



Since 1881

The American College

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

Madurai -625002

Meeting of the Academic Council

Wednesday, June 10, 2015

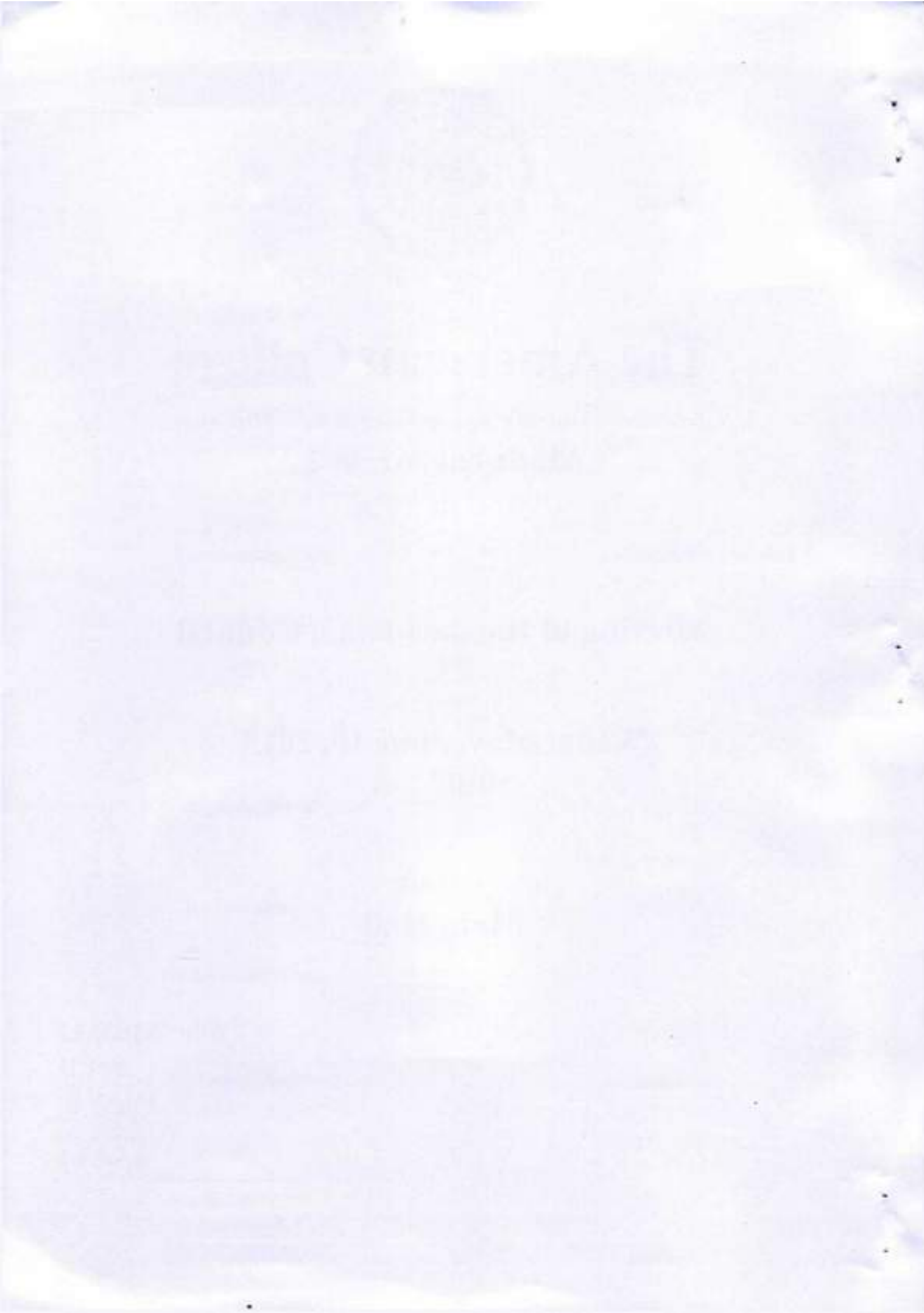
10:00 am

Venue

Main Hall

APPENDIX AJ

Vol. II



Department of Hindi (SF)
SYLLABUS
For UG program Under Part-I
Academic Year 2015-2016 onwards

Objectives:

- To make the students proficient in Hindi language.
- To help them invest knowledge in their career.
- To develop their communicative skills.
- To enhance their ability in speaking, reading and writing Hindi.
- To acquire good pronunciation and speak fluently.

Course structure: Text, grammar and applied grammar.

No of Papers: One per Semester

No of Lectures: One hour per day; Three hours per week.

Language Courses offered Under Part-I
(2015-16 onwards)

Semester	Course Code	Course Title	Credits	Hours per week	Hours per Semester
I	HIS1201	General Hindi-I	2	3	45
II	HIS1202	General Hindi-II	2	3	45
III	HIS2215	General Hindi-III	2	3	45
IV	HIS2216	General Hindi-IV	2	3	45

Part-I General Hindi

This course is open to all except for the students who studied Hindi up to 10th & 12th standard. The objective of the course is to support and promote the learning of Hindi language from the Basics.

Evaluation Pattern

Ratio of Marks awarded

Internal: 100 Marks

Test-1(30 Marks) + Quiz-1(10 Marks) +Assignment-1(10 Marks) =50Marks

Test-2(30 Marks) + Quiz-2(10 Marks) +Assignment-2(10 Marks) =50Marks

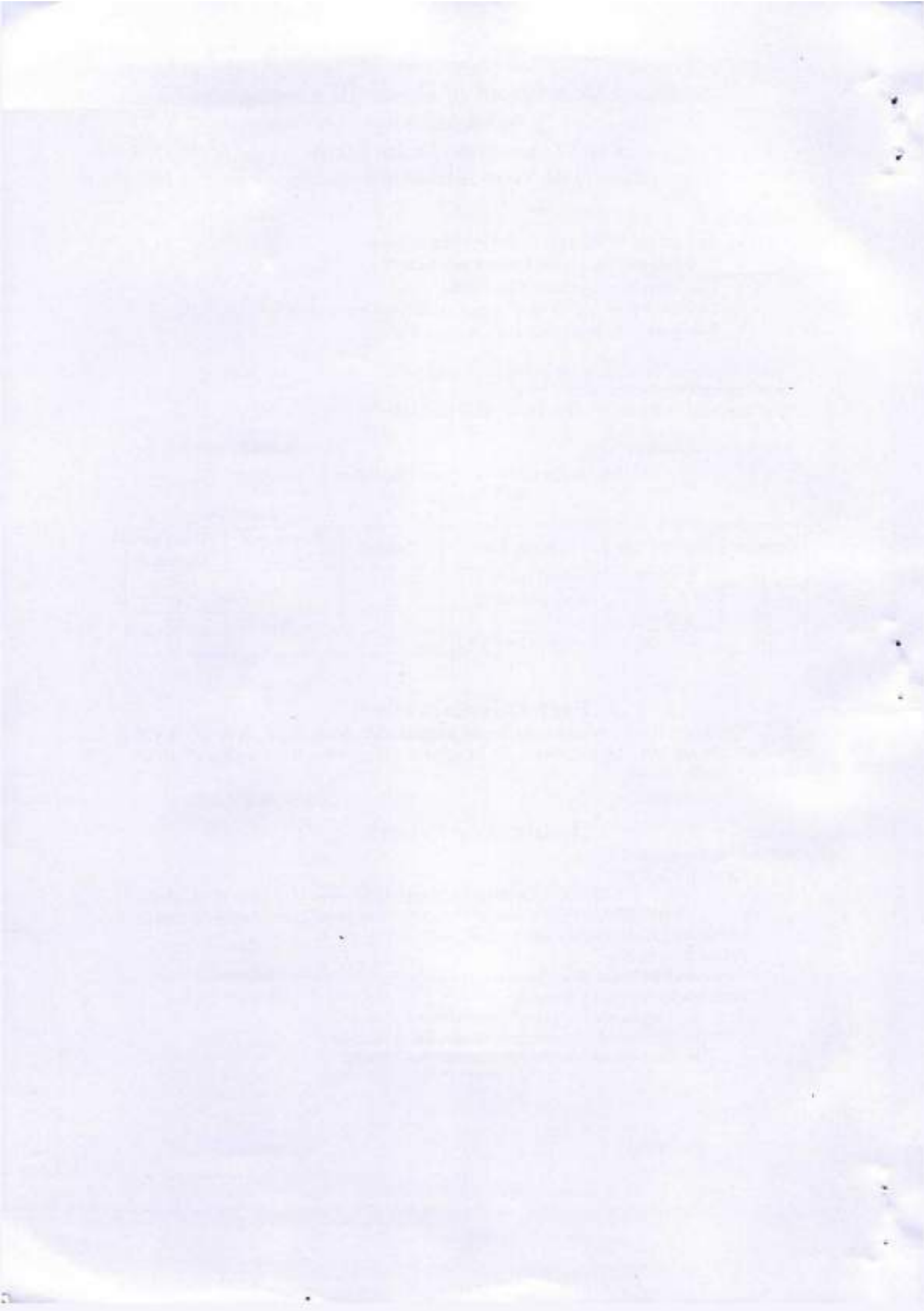
Duration of the Internal Test: 1 Hour.

External: 60 Marks

Duration of External Examination: 2 Hours.

Total Marks: Internal + External.

- o Two Academic years/Four semesters
- o The course curriculum is divided into 3 Modules.
- o Each Module for 15 Hours classroom teaching.



DEPARTMENT OF HINDI
B.A. Hindi UG Programme

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
1	I	HIS1201	General Hindi-I	3	2	30	
	II	ENS 1201	Conversational Skills	3	2	30	
	III	Core	HIS1503	Intro to Hindi language	5	5	75
			HIS1405	Prose-I	4	4	60
			HIS1407	Grammar-I	4	4	60
		Supportive	HIS1409	Link Language Hindi	5	4	60
IV	Non-Major Elective -I	HIS1211	Basic Grammar & Translation	3	2	30	
	Life skill-I	HIS1213	Business Hindi	3	2	30	
V	NSS/PED		Extension	-	-	-	
Total				30	25	375	

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
2	I	HIS1202	General Hindi-II	3	2	30	
	II	ENS 1202	Reading & Writing Skills	3	2	30	
	III	Core	HIS1504	Hindi stories	5	5	75
			HIS1406	Prose-II	4	4	60
			HIS1408	Grammar-II	4	4	60
		Supportive	HIS1410	North Indian culture and Tradition	5	4	60
IV	Non-Major Elective -2	HIS1212	Hindi in day to day life	3	2	30	
	Life skill-2	HIS1214	Administrative Hindi	3	2	30	
V	NSS/PED		Extension	-	1	-	
Total				30	25+1	375	

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
3	I	HIS2215	General Hindi-III	3	2	30	
	II	ENS 2201	Study Skills	3	2	30	
	III	Core	HIS2617	History of Hindi Literature	6	6	90
			HIS2519	Ancient poetry	5	5	75
			HIS2421	Poetics	4	4	60
			HIS2423	Essay & Composition	4	4	60
		Supportive	HIS2425	Origin and evolution of Hindi Language	5	4	60
	V	NSS/PED		Extension	-	-	-
Total				30	27	405	

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
4	I	HIS2216	General Hindi-IV	3	2	30	
	II	ENS 2202	Career Skills	3	2	30	
	III	Core	HIS2618	History of Modern Hindi Literature	6	6	90
			HIS2520	Modern poetry	5	5	75
			HIS2422	One act play	4	4	60
			HIS2424	Hindi and Mass Media	4	4	60
		Supportive	HIS2426	Fiction and Hindi Film	5	4	60
V	NSS/PED		Extension	-	1	-	
Total				30	27+1	405	

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
5	III	Core	HIS3627	Intro to Linguistics	6	6	90
			HIS3629	Novel	6	6	90
			HIS3631	Fuctional Hindi-I	6	6	90
		Innovative	HIS3533	Creative Writing	5	5	75
	IV	Life skill-3	HIS3235	Spoken Hindi-I	3	2	30
		VAL		Value Education	4	2	30
Total				30	27	405	

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
6	III	Core	HIS3628	Hindi Drama	6	6	90
			HIS3630	Hindi in Computer	6	6	90
			HIS3632	Official Hindi Language	6	6	90
		Innovative	HIS3534	Translation Theory & Practice	5	5	75
	IV	Life skill-4	HIS3236	Spoken Hindi-II	3	2	30
		EVS	HIS3237	Environmental Studies	4	2	30
Total				30	27	405	
Grand Total				180	158+2	2370	

Courses offered by Department of Hindi**Part-I -General Hindi**

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks
1	I	HIS1201	General Hindi-I	3	2	30
2	I	HIS1202	General Hindi-II	3	2	30
3	I	HIS2215	General Hindi-III	3	2	30
4	I	HIS2216	General Hindi-IV	3	2	30
Total				12	8	120

Part-III-Supportive course

Sem	Dept	Course No.	Course Title	Hr/wk	Credit	Marks
1	French	HIS1409	Communication skills in Hindi	5	4	60
2	French	HIS1410	North Indian culture and Tradition	5	4	60
3	Hindi	HIS2425	Indo-Aryan Civilization	5	4	60
4	Hindi	HIS2426	Fiction and Hindi Film	5	4	60
Total				20	16	240

Part-IV-Non-Major Elective

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks
1	IV	HIS1211	Basic Grammar & Translation	3	2	30
2	IV	HIS1212	Hindi in day today life	3	2	30
Total				6	4	60

Part-IV Life skill Courses

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks
1	IV	HIS1213	Business Hindi	3	2	30
2	IV	HIS1214	Administrative Hindi	3	2	30
5	IV	HIS3235	Spoken Hindi-I	3	2	30
6	IV	HIS3236	Spoken Hindi-II	3	2	30
Total				24	12	120

HIS1201	Semester-I General Hindi-I	3Hr/2Cr
----------------	---	----------------

Objective:

- To make the students learn from words to sentences.
- To impart Basic Hindi Knowledge.

Module-I (Vocabulary)

Days
Months
Relations
Vegetable
Fruits
Flowers
Numbers (1 to 100)

Reference:

Hindi Vatayan-Dr.K.M.Chandramohan-Vishva vidhyalay Publication,
Varanasi, 2010.

Module-II (Prose)

Samay ka sadhupayog
Sant Tulsidaas
Mahakavi Thiruvalluvar
Rastrakavi Bharati

Reference:

Hindi Parichay-Dakshin Bharat Hindi Prachar Sabha, 2006.

Module-III (Grammar & Translation)**Unit-I (Grammar)**

Singular-Plural
Gender
Synonyms
Antonyms
Question Making

Unit-II (Translation)

Exercise 1 to 5

Reference:

Hindi Parichay-Dakshin Bharat Hindi Prachar Sabha, 2006.

HIS1503

हिंदी भाषा का परिचय

5Hr/5Cr

Introduction to Hindi Language

The course aims to give students a basic understanding about the historic aspects of Hindi language. The evolution of Hindi language from Vedic period and its individual identity were explained. The course would help the students to attain knowledge about the "Devanagri Lipi" (the script used for Hindi) and its proper pronunciation. The introduction to gradual origin development of the Hindi language as Indo-Aryan a branch of Indo-European family of languages is explained in the course.

इकाई-1: देवनागरी का परिचय (Introduction to Devanagiri Script)

इकाई-2: हिन्दी - स्वरूप और प्रकार (format and type)

इकाई-3: हिन्दी की उप भाषाएँ (Hindi bids)

इकाई-4: शब्द और वाक्य प्रयोग (Words and Sentences)

इकाई-5: अनुच्छेद लेखन (Paragraph Writing)

Recommended Texts:

- Hindi Bhasha ka Ithihas by Bholanath Tiwari, Vani Prakashan, New Delhi, 2002.

Reference:

- Bharatheeya aya bhasha aur Hindi -Dr.Sunithikumaar chatujaryaa-Rajkamal prakashan.
- Hindi bhasha ki samajit bhoomika-bholnaath tivaari, Mukul priyadarshini-Dhankin Bharat Hindi prachar saba.
- Hindi Bhasha Aur Nagari Lipi by Bholanath Tiwari - Lokbharathi prakashan, Allahabad, 1996.
- Hindi bhasha ka sankship Ithihaas - Gopal lal Khanna, Indian Press LTD, Alahabad.
- Samanya Hindi - Dr.Vijaypal, Hindi prachar Snasthan.
- Vishwa Hindi - Sri Shankar rao, Mahachiv (Sangatan), Vishwa Hindi Sammelan, Delhi, 1983.
- Hindi Bhasha Aur Lipi- Dheerendra Varma, Hindustani Academy, Alahabad.
- Hindi Bhasha, Vyakaran aur Rachna - Arjun Tiwari, Vishwavidhyalay prakashan, Varanasi, 2010.

HIS1405

गद्य - I

4Hr/4Cr

Prose -I

The course helps the students to understand the language used in the prose writing. The course also promotes the understanding of simple communicational language.

इकाई-1: हिन्दी गद्य का परिचय

इकाई-2: गद्य

- मेरी वसीयत - जवाहरलाल नेहरू
- ताज - रघुवीर सिंह

इकाई-3: गद्य

- मिलन मुहूर्त - गोविंदवल्लभ पंत
- हाथी के दांत - अनंत गोपाल शेवड़े

इकाई-4: गद्य

- आईने के सामने - अमृता प्रीतम
- त्रिशंकु बेचारा - हरिशंकर परसाई

Recommended Texts:

- Gadhya Manjusha-Govind, Amar prakashan, Mathura, UP, 2002.

HIS1407

व्याकरण - I

4Hr/4Cr**Grammar - I**

The course trains the student with basic grammar. It also guides in equipping themselves in utilization of Hindi language without grammatical error.

इकाई-1: संज्ञा, सर्वनाम, विशेषण

इकाई-2: क्रिया, क्रिया विशेषण

इकाई-3: उपसर्ग, प्रत्यय

इकाई-4: संबन्धोद्यक, समुच्चयबोधक, विस्मयादिबोधक

Recommended Texts:

- Adhunik Hindi Vyakaran evam Rachana-Meenu Karthiya Kapil, Kumar Publications, Delhi, 2012.

Reference:

- Hindi Vyakaran tatha prayog – Harishankar, Rajlakshmi publication, Chennai, 2003.
- Pramanik vyakaran evam rachna- Dr.vijaypaal singh, Vishva vidhyalay prakashan, Varanasi, 2004.
- Saral Hindi vyakaran-3, Dakshin Bharat Hindi Prachar saba, Chennai, 2004.
- Adhunik Hindi vyakaran – Alok kumar raisihoge, Madhur books, 2011.
- Sudh hindi tatha vyakaran – D.Sarojini gupt, Saint Joseph publishing house, 2004.
- Vyakaran pradeep – Ramdev, Hindi Bhavan, Jalandhar & Alahabad.
- Hindi bhasha ka sankship Ithihaas – Gopallal Khanna, Indian Press LTD, Alahabad.
- Sugam Hindi Vyakaran –Vamshidhar Dharmapal Sastri, Shiksha Bharati, Delhi, 1998.
- Hindi vyakaran Prakash-Dr.Mahendra Sigh Rana, Harsha Prakashan, Agra, 2006.
- Hindi Bhasha, Vyakaran aur Rachna – Arjun Tiwari, Vishwavidhyalay prakashan, Varanasi, 2010.
- Hindi Vyakaran Vimarsh- Dr.Brajkishore, Sahni publications, Delhi, 2012.

HIS1409

संपर्क भाषा हिंदी

5Hr/4Cr**Link Language Hindi**

The aim of this course is to develop an independent out look towards the study of language and communication. The course encourages the student to learn Hindi for effective communication in different fields and analyze the problems and challenges of effective communication in Hindi.

Module I

Introduction to Hindi language.
Words and sentences

Vocabulary
Pronunciation

Module II

Parts of sentence
Transformation of sentence

Module III

Idioms and Phrases

Module IV

Current Trends in Hindi
Communicative in different spheres of life
Words used in day to day life

Module V

Correspondence in Hindi
Conversations through dialogues

Reference:

- Hindi Vatayan-Dr.K.M.Chandramohan-Vishva vidhyalay Publication, Varanasi, 2010.
- Vyavasayik Hindi – R.N.Dube, Prathagar gupt, National publishing House, Delhi, 1979.
- Bolchal ki Hindi- Dr. Suseela Gupta, Lokbharati Prakasan, Allahabad.
- Prayojan Moolak Hindi-Dr.Vinod godrey, Rajya hindi Sahithya Academy, Mumbai, 2007.

HIS1211**Basic Grammar & Translation****3Hr/2Cr**

The aim of the course is to facilitate the use of translation as a tool for greater communication between divergent groups of people belonging to different speech communities. The course guides in understanding translation as a linguistic, cultural and professional activity.

Module-I

Introduction to Hindi Language

Module-II (Basic Grammar)

Auxiliary verbs
Case ending
Tense
Voice

Module-III (Translation Practice)

Translation of Words
Translation of Sentences

Reference Text:

- Hindi Vatayan-Dr.K.M.Chandramohan-Vishva vidhyalay Publication, Varanasi, 2010.
- Hindi Vyakaran praveshika-1-Dakshin Bharat Hindi Prachar Sabha, 2012.
- Subodh Hindi Rachna-Dhakshin Bharat Hindi pracahar sabha, 2013.
- Hindi Parichay-Dakshin Bharat Hindi Prachar Sabha, 2006.

HIS1213**Business Hindi****3Hr/2Cr**

The aim of this is to make the student understand the various types of business communications, correspondence and their peculiarities. The course makes the students familiar to Business terms in Hindi, develops their conversation skill and also makes the student able to communicate in Hindi in the fields of Business, Banking etc.

Module-I

Introduction to Hindi Script

Module-II

Application for job
Application for loan
Placing an Order
Complaint Letter

Module-III

Advertisement of a Product
Conversation on Business Correspondence

Reference:

- Vyavasayik Hindi – R.N.Dube, Prathagar gupt, National publicating House, Delhi, 1979.
- Bolchal ki Hindi- Dr. Suseela Gupta, Lokbharati Prakasan, Allahabad.
- Prayojan Moolak Hindi-Dr.Vinod godrey, Rajya hindi Sahithya Academy, Mumbai, 2007.
- Kamkaajeya Hindi – Dr.P.M.Thomsaon, Sameeksha Publication House, Delhi, 2008.
- Hindi Vatayan-Dr.K.M.Chandramohan-Vishva vidhyalay Publication, Varanasi, 2010.

Semester-II**HIS1202****General Hindi-II****3Hr/2Cr****Objective:**

- To enhance creative thinking through short stories.
- To develop the reading, speaking and writing skills in Hindi.

Module-I (Short Stories)

Kuve me chand
Kapati Kauva
Lalchi kutta

Fakeer aur Badshah
Aam ke ped
Bandar aur Bakra
Shikaree aur sher

Reference:

Mazedhaar Kahaniyan-Dhakshin Bharat Hindi prachar sabha, 2006.

Module-II (Conversion & Letter writing)**Unit-I (Conversation)**

In the Bus stand
In the Lodge
In the Hotel
Between Doctor and Patient
Between Student and Teacher

Unit-I (Letter writing)

Letter to Friend
Leave Letter
Books Order
Complaint Letter

Reference:

Hindi Parichay-Dakshin Bharat Hindi Prachar Sabha, 2006.

Pramanik Alekhan aur tippan-Prof.M.A.Viraj, Shiva Shakti Printers, Delhi, 2013.

Module-III (Grammar and Translation)

Introduction to Tense
Translation - Exercise 1 to 5

Text Book:

Subodh Hindi Rachna-Dhakshin Bharat Hindi prachar sabha, 2013.

HIS1504

हिंदी कहानियाँ

5Hr/5Cr

Hindi Stories

To develop the reading skill and increase the vocabulary. To make the students enjoy short stories and develop their creative mind.

इकाई-1: हिंदी कहानी का उद्भव और विकास

इकाई-2: कहानियों के तत्व और प्रकार

इकाई -3: हिंदी के प्रसिद्ध कहानीकार

इकाई -4: पूस की रात - प्रेमचंद

चीफ की दावत - भीष्म साहनी

इकाई -5: मेहमान - राजेंद्र यादव

रोज - आग्नेय

Text Book:

Kahani kunj-Lokbharati prakashan-Delhi, 2009.

HIS1406

गद्य - II

4Hr/4Cr

Prose - II

To get the knowledge about the simple language through prose. To develop the reading skill and increase the vocabulary.

इकाई-1: भारत एक है – रामधारी सिंह दिनकर

इकाई-2: हार की नीत - सुदर्शन

इकाई -3: विन्यापन युग - मोहन राकेश

इकाई -4: समय पर मिलनेवाले – हरिशंकर परसाई

Text Book:

Gadhya chayan-Satyakam vidyalankar- Shiksha Bharati – delhi- 2011.

HIS1408

व्याकरण - II

4Hr/4Cr

Grammar-II

The course aims on understanding of communicational language with proper Grammar. The course trains the student with basic grammar. It also guides in equipping themselves in utilization of Hindi language without grammatical error.

इकाई-1: क्लृप्त परिभाषा भेद और अभ्यास

इकाई-2: वाच्य परिभाषा भेद और अभ्यास

इकाई -3: क्लृप्त परिभाषा भेद और अभ्यास

इकाई -4: समास परिभाषा प्रकार और अभ्यास

Recommended Texts:

- **Adhunik Hindi Vyakaran evam Rachana**-Meenu Karthiya Kapil, Kumar Publications, Delhi, 2012.

Reference:

- **Hindi Vyakaran tatha prayog** – Harishankar, Rajlakshmi publication, Chennai, 2003.
- **Pramanik vyakaran evam rachna**- Dr.vijaypaal singh, Vishva vidhyalay prakashan, Varanasi, 2004.
- **Saral Hindi vyakaran-3**, Dakshin Bharat Hindi Prachar saba, Chennai, 2004.
- **Adhunik Hindi vyakaran** – Alok kumar raisihoge, Madhur books, 2011.
- **Sudh hindi tatha vyakaran** – D.Sarojini gupt, Saint Joseph publishing house, 2004.
- **Vyakaran pradeep** – Ramdev, Hindi Bhavan, Jalandhar & Alahabad.
- **Hindi bhasha ka sankship lthihaas** – Gopallal Khanna, Indian Press LTD, Alahabad.
- **Sugam Hindi Vyakaran** –Vamshidhar Dharmapal Sastri, Shiksha Bharati, Delhi, 1998.
- **Hindi vyakaran Prakash**-Dr.Mahendra Sigh Rana, Harsha Prakashan, Agra, 2006.
- **Hindi Bhasha, Vyakaran aur Rachna** – Arjun Tiwari, Vishwavidhyalay prakashan, Varanasi, 2010.
- **Hindi Vyakaran Vimarsh**- Dr.Brajkishore, Sahni publications, Delhi, 2012.

HIS1410

उत्तर भारतीय संस्कृति और परंपरा
North Indian Culture and Tradition

5Hr/4Cr

The course aims at imparting the student with knowledge about the tradition and culture of the Hindi people. The course also helps them to understand the North Indian life style.

इकाई-1: हिंदी भाषा का परिचय (Introduction to Hindi language)

लिपि, उच्चारण, पढ़ना, लिखना ।

इकाई-2: हिंदी संस्कृति की महत्ता (Importance of Hindi Culture)

भारत की प्राचीन संस्कृति, भारतीय संस्कृति, वैदिक, भाषा, धर्म, दर्शन शास्त्र आदि ।

इकाई -3: रीति - रिवाज़ (Customs)

भोजन, वस्त्र-धारण, जाति व्यवस्था, परिवार, पशु, परम्परा एवं रीति, त्योहार ।

इकाई -4: हिंदी का साहित्य क्षेत्र (Literature)

इतिहास, काव्य, महाकाव्य आदि ।

इकाई -5: उत्तर भारतीय कला (North Indian art)

प्रदर्शन कला-संगीत, नृत्य, नाटक और रंगमंच, चित्रकला, मूर्तिकला, वास्तुकला, मनोरंजन और खेल आदि ।

References:

- Bharatheeya Arya Bhasha aur Hindi –Dr.Sunithikumaar chatujaryaa-Rajkamal prakashan.
- Bharatiya Pracheen Sanskruti-Dr.Ramji Bharatiyar, Lokbharati prakashan, Alahabad.
- Bharatiya Samaj aur Snaskruti – Prof.Surendra Kumar Srivatsav, Vishwavidhyalay prakashan, Varanasi, 1985.
- Bharatiya Sanskruti-Dr.Prathiba Goye, Minarva Publications, Jodhpur, 2000.
- Samanya Samaj Adhyayan-Dr.Deenanath Varma, Bharatiya Bhavan, Partna, 1991.

HIS1212

आम जीवन में हिंदी

3Hr/2Cr

Hindi in day today life

The aim of this course is to train the students to speak in Hindi fluently and efficiently. The course also aims to encourage the students to speak in Hindi in day-to-day life, offices and other fields of life.

Module-I

- Word Building
- Sentence Framing
- Present Tense
- Past Tense
- Future Tense

Module-II

Present, Past and Future Continuous
Types of Sentences
Use of Imperative

Module-III

Answering the Questions
Framing Questions

Reference:

- Hindi Parichay-Dakshin Bharat Hindi Prachar Sabha, 2006.
- Hindi Vatayan-Dr.K.M.Chandramohan-Vishva vidhyalay Publication, Varanasi, 2010.
- Hindi Vyakaran praveshika-1-Dakshin Bharat Hindi Prachar Sabha, 2012.
- Subodh Hindi Rachna-Dhakshin Bharat Hindi pracahar sabha, 2013.

HIS1214

राजभाषा हिंदी

3Hr/2Cr

Administrative Hindi

The course aims to introduce the Official language. It facilitates the students to understand the Administrative terminologies and familiarizes them to the Formal correspondence language.

Module-I

General introduction
Role of correspondence in Administration
E-Correspondence

Module-II

Name of Posts
Name of Ministries

Module-III

Official Terminologies
Administrative Words and Phrases.

Module-IV

Application for leave
Application for transfer
Circular
Notice

Reference:

- Kamkaajeya Hindi – Dr.P.M.Thomsaon, Sameeksha Publication House, Delhi, 2008.
- Vyavahari Hindi-Sri.Nagappa, Dhakshin Bharat Hindi Prachar Sabha, Chennai, 1958.
- Anuprayogik Hindi- Dr.Krishna Kumar Goswami, Arunoday Prakasan, Delhi.
- Saras Nibandh Evam Saral Patra Lekhan-Prema Jothi, Sahni Publication, Delhi, 2012.
- Prayojan Moolak Hindi-Dr.Vinod godfrey, Rajya hindi Sahithya Academy, Mumbai, 2007.

HIS2215

Semester-III
General Hindi-III

3Hr/2Cr

Objective:

- To make the students appreciate the nuances of Hindi language through one act plays.
- To develop the art of writing essays.
- To have the basic knowledge in Hindi grammar.

Module-I (One act play)

Seetha
Apoorva thiyag
Parivartan
Sone ki Varsha

Reference:

Sone ki Varsha-Dhakshin Bharat Hindi prachar sabha, 2009.

Module-II (Grammar)**Unit-I (Grammar)**

Sangya
Sarvanaam
Visheshan
Kriya
Kriya visheshan

Unit-II (Applied Grammar)

Hints Development.

Reference:

Hindi Vyakaran praveshika-1-Dakshin Bharat Hindi Prachar Sabha, 2012.

Module-III**Unit-I (General Essays)**

Hamara desh
Rashtra Bhasha Hindi
Madurai
Tajmahal
Vidhyasagar
Vivekanand

Unit-II

Comprehension
Translation (Ex. 5 to 10)

Reference:

Subodh Hindi Rachna-Dhakshin Bharat Hindi prachar sabha, 2013.
Comprehension as Prepared by the Department.

HIS2617

हिंदी साहित्य का इतिहास (रीति काल तक)

6Hr/6Cr

History of Hindi Literature (Up to Post Medieval period)

The brief introduction to History of Hindi literature is given in this course. The different classification of Hindi literature into periods by different authors and their naming

were explained. The Ancient and the medieval period of Hindi literature were detailed in the course.

इकाई -1: हिन्दी साहित्य के इतिहास का परिचय (Introduction to the History of Hindi literature)
राजनेतिक, सामाजिक, धार्मिक, सांस्कृतिक परिवेश, इतिहास की अवधि आदि।

इकाई -2: काल विभाजन (Classification of period)
विभिन्न लेखकों द्वारा वर्गीकरण और नामकरण।

इकाई -3: प्राचीन काल में हिन्दी साहित्य (Hindi literature in ancient times)
वीरगाथा काल, सिद्ध साहित्य, जैन साहित्य, रासो काव्य, अन्य कृतियाँ।

इकाई -4: निर्गुण भक्ति (Nirgun Bhakti era)
कबीरदास, गुरु नानक।

इकाई -5: सगुण भक्ति (Sagun Bhakti era)
रामभक्ति, कृष्ण भक्ति भक्ति विहारी, मीराबाई, अष्टछाप कवि आदि।

इकाई -6: रीतिकाल (Reeti era)
नीति और शृंगार, विहारी, घनानंद आदि।

Recommended Texts:

- Hindi Sahitya ka Sanshipt Ithihas- Babu Gulabroy, Lakshmi Narayan Agrawal, Agra.

Reference:

- Hindi sahitya ka Ithihas – Acharya Ramchandra Shukl, Kashinagari prachrini sabha, Kashi, 2012.
- Hindi Sahitya ka Udbhav aur vikas – Hajari Prasad Divedi, Rajkamal prakashan, Delhi, 1982.
- Hindi Sahitya ka Adikaal – Acharya Hajari Prasad divedi, Bihari Rashtrabhasha parishad, Patna, 1959.
- Hindi Ithihas kaa Naveen Ithihas- Dr.Lala sahib singh, Vishvavishyalay prakashan, Varanasi, 2013.
- Hindi Sahitya ka uttar madhyakaal (Reeti kaal) – Dr.Mahendra kumar, Sukhpaal Gupt arya book depot, New Delhi, 1991.
- Bharat ki santh parampara – Dr.Radha Mohan Shrivatsav, Vibhor prakashan, 2007.
- Hindi sahitya ka ithihaas (Adikaal se reeti kaal tak) – Ramchandra shukla, kaarvi prakashan, jaipur, 2011.
- Ithihaas aur alochana – Namvar Sing, Lok Bharati prakashan, Alahabad, 1962.
- Sahitya Garima – Indu prakash pandey, Ramnarayanlal beni Prasad, Ilahabad.
- Hindi Sahitya ka Sanskipt Ithihas – Dr.Ramratan Bhatnagar & Govinda dass Maheswari, Manoj printing press, Varanasi.
- A History of Hindi Literature by Frank Ernest Keay Ma, Forgotten Books, 2013.

HIS2519

प्राचीन पद्य

5Hr/5Cr

Ancient Poetry

The course encourages the students to have the taste of reading poetry. The language used in the Ancient poetry was explained with famous poems of the period.

इकाई -1: प्राचीन पद्य - एक परिचय (Introduction about Ancient Poetry)

प्राचीन काव्य की भाषा, उपयोग आदि।

इकाई -2: प्राचीन कवि (Ancient poet)

कबीर, तुलसी, सूरदास, रहीम और मीराबाई ।

इकाई -3: वीरगाताकालीन काव्य (Ancient Epic poems)

इकाई -4: दोहा (Couplet)

- साष्ठी और पद - कबीर दास
- रहीम सुधा - रहीम

इकाई -5: प्राचीन पद्य (Ancient poetry)

- भजन - सूरदास
- कवितावली, चिनयपत्रिका और रामचरितमानस - तुलसीदास
- पद - मीराबाई

Recommended Text:

- Kavya Tarang- Dr.Niranjan, Javahar Pustakalay, Matura, UP, 2013.

Reference:

- Praceen Kavya Sangrah - Dakshin Bharat Hindi Prachar saba, Chennai, 2006.
- Sur Sahithya - Aacharya Hajari Prasad Divedi - Rajkamal Prakashan , New Delhi, 1973
- Kavya Vatika - Dr. Dhasharadh Ojha - Rajpal & Sons, New Delhi, 1996.
- Kavya Kusum-Dakshin Bharat Hindi prachar Sabha, 2011.
- Kabir rachanavali- Ayodhyasinmh upadhyay, Kashi nagari pracharini, kasi.
- Sant kabir-ramkumar varma, sahitya bhavan ltd, Ilahabad, 1947.
- Bharatiya kavya sastra ki parampara- Dr.Nagendra, National publishing house, Delhi.
- Soor padhawali - Sri.Girijadut shukl Girish, Hindi Sahitye Samelan, 2000.
- Hindi kavita me yugantar - Pro.Surendra Atmaraam & sons, Delhi, 1950.
- Kabir - Prabhakar Bhacve, Sahitya Academy, 1984.
- kavya lahri - Ramswaroop , Vimal prakashan, New Delhi.
- Soordass - Ek Adhyayan - Ramratan Bhatnagar.
- Vinay Patrika Satik-Dr.Suresh Agrawal, Ashok Prakashan, Delhi, 1985.

HIS2421

काव्यशास्त्र

4Hr/4Cr

Poetics

The aim of the course is to provide knowledge about the theories of Indian Literary Criticism. To make the students understand the theories of Indian thinkers regarding Literature. The course also gives the knowledge about the poetic concepts of Hindi.

इकाई - 1: काव्यशास्त्र परिचय (Introduction to Poetics)

इकाई - 2: भारतीय काव्य साहित्य: वचधारणा एवं स्वरूप (Indian Poetics: Concept and Format)

परिचय , साहित्य और इसके रूप, लक्षण तथा विशेषताएँ ।

इकाई – 3: भारतीय काव्य शास्त्र (Indian poetics-science)

रस – अवधारणा एवं स्वरूप, शब्द शक्तियों, आधुनिक गद्य के विविध रूप ।

इकाई – 4: रस (Ras)

रस का अर्थ, रस के प्रकार, स्थायी भाव ।

इकाई – 5: छंद (Chand)

शब्दार्थ, छंद के अंग, यति, गति, तुक, मात्रा, गण, छंद के प्रकार ।

इकाई – 6: अलंकार (Alankaar)

शब्दार्थ, स्थान और महत्व, वर्गीकरण, विभाजन ।

Reference:

- Bharatiya kavya sastra ki parampara- Dr.Nagendra, National publishing house, Delhi.
- Hindi kavita me yugantar – Pro.Surendra Atmaraam & sons, Delhi, 1950.
- Bharatiya Sahitya Shastra (Pratam Khand) – Baldev Upadhyaya, Sahityaacharya tatha Ramdeen Reeder, Prashad Parishad, Kasi, 2000.
- Bharatiya Sahitya sastra – Baldev Upadhyaya tatha ramdeen prakashan, Prasad Parishad, Varanasi.
- Bharateeya evam Paschatya Kavyashastra ki Rooprekha - Ramachandra Tiwari, Lokbharati, Allahabad.
- Paschatya Kavyasastra-Adhunatan Sandarbh- Satyadev Misra, Lokbharati Prakashan, Allahabad.
- Bharateeya evam Paschatya Kavyashastra -Dr.Ganapatichandra Gupta, Rajkamal Prakashan, New Delhi.
- Bharateeya evam Paschatya Kavyashastra -Dr.Ganapatichandra Gupta, Rajkamal Prakashan, New Delhi.

HIS2423

निबंध और संरचना लेखन

5Hr/4Cr

Essays and Composition

The art of writing of essays and composition were given practice by this course. The course details about the method of writing and the utilization of communicative language in the essays and the compositions.

इकाई – 1: निबंध साहित्य (Essays-Introduction)

विधियाँ, प्रकार, राजनीतिक, सामाजिक, सांस्कृतिक आदि ।

इकाई – 2: प्रसिद्ध निबंधकार (Famous essay writers)

इकाई – 3: संरचना लेखन और अंग (Parts of Composition)

इकाई – 4: चिंतामणि (Lessons form Chintamani)

श्रद्धा, और भक्ति ।

इकाई – 5: चिंतामणि (Lessons from Chintamani)

उत्साह और करुण ।

Recommended Texts:

- Chintamani-

Reference:

- Rajneetik Evam Sanskritik Nibandh-Dr.Bharati Gubalkar, Sahani Publication, Delhi, 2012.
- Gyan Nibandh Sagar-Hari Shankar, Rajalakshmi Publication, Chennai.
- Adhunik Hindi Nibandh-Prakashan Kendra, Lucknow, 1998.
- Shresta Hindi Nibandh-Shri Sharan, Dr.Ashok Kumar Saraswathi, Calara Publication, Delhi.

HIS2425

हिंदी भाषा का उद्भव और विकास

5Hr/4Cr

Origin and Evolution of Hindi Language

The course aims to give students a basic knowledge about the historic aspects of Hindi language: The evolution of Hindi language from Vedic period and its individual identity. It includes the "Devanagari Lipi" (the script used for Hindi) and its proper pronunciation, an introduction to origin and gradual development of Hindi language.

इकाई-1: हिंदी भाषा का इतिहास (History of Hindi language)

भाषा के इतिहास, नामकरण

इकाई-2: हिन्दी - स्वरूप और प्रकार (Hindi-format and type)

वेदिक, संस्कृत, प्राकृत, पाली, अपभ्रंश आदि

इकाई -3: हिन्दी बोलियाँ (Hindi bids)

पश्चिमी, पूर्वी, बिहारी, राजस्थानी, पहाड़ी।

इकाई -4: खड़ीबोली हिंदी (Khariboli Hindi)

हिंदुस्तानी, उर्दू, दक्खिनी, खड़ी बोली।

इकाई -5: देवनागरी लिपि (Devanagari script)

लिपि का स्वरूप, ध्वनि, उच्चारण, शब्द और वाक्य प्रयोग

इकाई -6: भाषाशास्त्र (Philology)

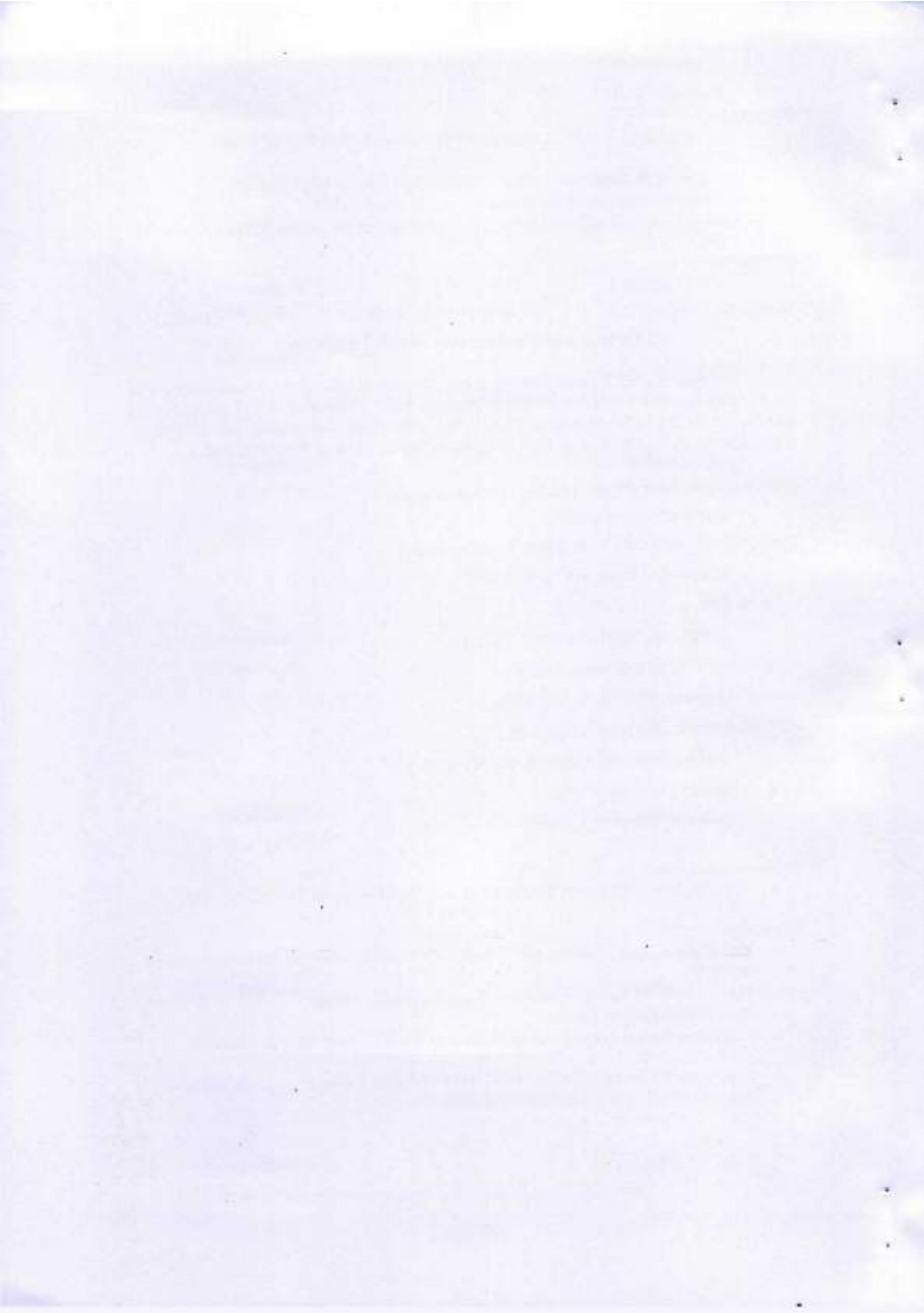
अवधारणा, विशेषताएँ, परिवर्तना

Recommended Texts:

- Hindi Bhasha ka Ithihas by Bholanath Tiwari, Vani Prakashan, New Delhi, 2002.

Reference:

- Bharatheeya arya bhasha aur Hindi –Dr.Sunithikumaar chatujaryaa-Rajkamal prakashan.
- Hindi bhasha ki samajit bhoomika-bholnaath tivaari, Mukul priyadarshini-Dhankin Bharat Hindi prachar Saba.
- Hindi Bhasha Aur Nagari Lipi by Bholanath Tiwari – Lokbharathi prakashan, Allahabad, 1996.
- Hindi bhasha ka sankship Ithihaas – Gopal lal Khanna, Indian Press LTD, Alahabad.
- Samanya Hindi – Dr.Vijaypal, Hindi prachar Snasthan.



- Vishwa Hindi – Sri Shankar rao, Mahachiv (Sangatan), Vishwa Hindi Sammelan, Delhi, 1983.
- Hindi Bhasha Aur Lipi- Dheerendra Varma, Hindustani Academy, Alahabad.
- Hindi Bhasha, Vyakaran aur Rachna – Arjun Tiwari, Vishwavidhyalay prakashan, Varanasi, 2010.

HIS2216 **Semester-IV** **General Hindi-IV** **3Hr/2Cr**

Objective:

- To familiarize the students with poetic words.
- To enhance the students' linguistic competency.
- To enable them to use the different registers through grammar at an advanced level.

Module-I (Modern Poetry)

Bhikshuk
Maa kahe kahani
Pupshp ki Abhilasha
Raja aur Rani
Khilouna

Reference:

Padhya sarita-Dhakshin Bharat Hindi pracahar sabha, 2009.
Kavya kusum-Bharat Hindi pracahar sabha, 2009.

Module-II (Grammar)

Sambandbodhak
Samuchchaybodhak
Vismayaadibodhak
'Ne' ka proyog
Upasarg
Prathyai

Reference:

Hindi Vyakaran praveshika-I-Dakshin Bharat Hindi Prachar Sabha, 2012.

Module-III (Grammar and Translation)

Translation.
Precise Writing.

Reference:

Subodh Hindi Rachna-Dhakshin Bharat Hindi pracahar sabha, 2013.
Pramanik aalekhan aur tippani- prof.M.A.Viraj-Shivasakti printers, Delhi, 2013.

HIS2618

आधुनिक हिंदी साहित्य का इतिहास

6Hr/6Cr

History of Modern Hindi Literature

The course helps the students to understand the Modern period of the Hindi literature. The course also explains the Evolution of prose from the poems. The part of Hindi literature in the independence moment was also discussed in the course.

इकाई -1: आधुनिक हिन्दी साहित्य –परिचय (Introduction about Modern Hindi Literature)

भारतेन्दु युग, द्विवेदी युग, छायावाद, प्रगतिवाद, प्रयोगवाद।।

इकाई -2: आधुनिक कवि और लेखक - सामान्य परिचय (Intro to Modern Poets and Writers)

नई अवधारणा गद्य, भाषा, गद्य लेखक, अवधारणा ।

इकाई -3: छायावाद (Chayavaad)

जबशंकर प्रसाद, निराला, सुमित्रानंदन पंत, महादेवी वर्मा आदि मुख्य कवि ।

इकाई -4: गद्य की अन्य विधाएँ (Genres of Prose)

जीवनी, आत्मकथा, यात्रा वृत्तांत, संस्मरण और रेखाचित्र, गद्य, कविताएँ, साक्षात्कार ।

इकाई -5: हिंदी और स्वतंत्रता आंदोलन (Hindi Literature and Indian Independence)

स्वतंत्रता आंदोलन में हिंदी, हिंदी राजभाषा के रूप में, राष्ट्रभाषा हिंदी ।

इकाई -6: 21 वीं सदी की कविताओं में नई प्रवृत्तियाँ (New Trends in the 21st Century)

समकालीन हिंदी कविता मुख्य प्रवृत्तियाँ, लेखक, भाषा में नई अवधारणाएँ ।

Recommended Texts:

- Hindi Sahitya ka Sanshipt Ithihas- Babu Gulabroy, Lakshmi Narayan Agrawal, Agra.

Reference:

- Hindi sahitya ka Ithihas – Acharya Ramchandra Shukl, Kashinagari prachrini sabha, Kashi, 2012.
- Hindi Sahitya ka Udbhav aur vikas – Hajari Prasad Divedi, Rajkamal prakashan, Delhi, 1982.
- Hindi Ithihas kaa Naveen Ithihas- Dr.Lala sahib singh, Vishvavishyalay prakashan, Varanasi, 2013.
- Adhunik Hindi Lekhan – Prabhakar Maachve & Krishna Murari Sharma, Thomson press ltd. Department of Publication, Delhi, 1974.
- Ithihaas aur alochana – Namvar Sing, Lok Bharati prakashan, Iahabad, 1962.
- Chayavaad Aur Rahasyavaad – Sri.Gangaprasad Pandey, Ram narayan lal publication & Book Seller, Iahabad, 1945.
- Sahitya Garima – Indu prakash pandey, Ramnarayanlal beni Prasad, Iahabad.
- Adhunik Sahitya – Dr.Omprakash, Alekh prakashan, Delhi.
- Hindi Sahitya ka Sanskipt Ithihas – Dr.Ramratan Bhatnagar & Govinda dass Maheswari, Manoj printing press, Varanasi.

HIS2520

आधुनिक कविता

5Hr/5Cr

Modern Poetry

The course aims to make the students to grasp the differentiation of modern poetry from the ancient poetry. The course encourages the students to understand the style of modern poetic language with some famous modern poems.

इकाई -1: आधुनिक पद्य लेखन - एक परिचय (Modern Verse Writing - An Introduction)

कविता लेखन, विधि, रुचि आदि।

इकाई -2: आधुनिक कवियों का सामान्य परिचय (Intro to Modern poets)

इकाई -3: आधुनिक पद्य (Modern Poetry)

- तारे गाते हैं - हरिवंशराय बच्चन
- मुरझाया फूल - महादेवी वर्मा
- अनल किरीट - रामधारीसिंह 'दिनकर'
- अब है मेरी बारी - मैथिलीशरण गुप्त
- वसंत आया - सूर्यकांत त्रिपाठी निराला
- बादल - सुमित्रानंदन पंत

इकाई -4: समकालीन कविता (contemporary poetry)

- धूमिल की अंतिम कविता - कल सुन्ना मुझे
- रामदरश मिस्र - जुलूस कहाँ जा रहा है
- अशोक वाजपेयी - कुछ तो
- अरुण कमल - वक्त
- सुनीता जैन - माचिस

इकाई -5: ई-कविताएँ (E-Poems)

भाषा, भाव, बोध गम्यता, सहज संप्रेषण, मनोरंजक, हृदयगम आदि।

Recommended Texts:

- Kavya Sourabh, Dakshin Bharat Hindi prachar sabha, Chennai, 2008.
- Kavya Tarang- Dr.Niranjan, Javahar Pustakalay, Matura, UP, 2013.

Reference:

- Bharatiya kavya sastra ki parampara- Dr.Nagendra, National publishing house, Delhi.
- Hindi kavita me yugantar – Pro.Surendra Atmaraam & sons, Delhi, 1950.
- kavya lahri – Ramswaroop , Vimal prakashan, New Delhi.

HIS2422

एकांकी

4Hr/4Cr

One Act Play

The aim of the course is to sensitize the student to the aesthetic, cultural and social aspects of literary appreciation and analysis. It helps the students to understand the one-act plays in Hindi.

- इकाई -1: एकांकी कला (Art of One-act play)
उद्भव और विकास, हिंदी के प्रसिद्ध एकांकीकार और एकांकी।
- इकाई -2: एकांकी (One-act play)
बहु कि विदा - विनोद रस्तोगी
- इकाई -3: एकांकी (One-act play)
सूखी डाली - उपेंद्रनाथ अशक
- इकाई -4: एकांकी (One-act play)
चरुमित्रा - रामकुमार वर्मा

Recommended Texts:

- Aat ekanki – kamalnayan tandan, Ek adhyayan, Hindi sahitya bandaar, lacknow, 1965.
- Bahu ki vida – Vinod Rastogi, Anjali prakashan, Delhi.
- Charumitra – Ramkumar Varma, Sadhana Sadan, Alahabad.

Reference:

- Hindi Natak Sahitya ka Ithihas – Somnath Gupt, Hindi Bhavan, Alahabad, 1951.
- Hindi sahitya ka Ithihas – Acharya Ramchandra Shukl, Kashinagari prachrini sabha, Kashi, 2012.
- Adhunik Hindi Lekhan – Prabhakar Maachve & Krishna Murari Sharma, Thomson press ltd. Department of Publication, Delhi, 1974.

HIS2424

**हिंदी और जनसंपर्क
Hindi and Mass Media**

4Hr/4Cr

The course is based on the modern technologies of communication. The course provides the students the necessary basic knowledge about Mass media and their latest trends. The course provides brief study on Media, journalism and Advertisement.

- इकाई – 1: जन संचार का परिचय (Introduction to mass communication)
संचार परिभाषा और प्रकार ।
- इकाई – 2: पत्रकारिता (Journalism)
समाचार, प्रकार, पत्रिका, पत्रकार, हिंदी पत्रिकाएँ ।
- इकाई – 3: रेडियो और दूरदर्शन (Radio and Television)
आकाशवाणी और प्रसार भारती ।
- इकाई – 4: विज्ञापन (Advertisement)
प्रकार, तरीके, विज्ञापन दाता, प्रभाव ।

Reference:

- Print media – Roopchand gowtham, Shri Natraj prakashan, 2008.
- Jansampark prabhandan – M.P.Choudri, Shri Badrinath Books company, 2012.
- Hindi Patrakarita – Dr.Krushna Bihari Misr, Bharatiye Gyanpeet Prakashan, 1985.
- Vigyaan preeti aur manav – Priyadasi prakash, Saksharta Kendra, Ludiana, 2011.
- Akashvani Evam Rashtriyata-Dr.Bhavani, Surendra kumar & Sons, Delhi, 2013.
- Radio Natak Lekhan-Usha Saksena, Shri Natraj Prakashan, Delhi, 2007.
- Adhunik Vigyapan Kala Evam Vyavahaar-Dr.Arjun Tiwari, Vishwavidhyalay Prakashan, Varanasi, 2010.

HIS2426

कथा साहित्य और हिंदी फिल्म
Fiction and Hindi Film

5Hr/4Cr

The course aims to provide students with the knowledge of Hindi fictions, style, characterization and also briefs about the Hindi Films. The course helps them acquire an introduction about how the fictions are made into Films with some examples.

इकाई-1: हिंदी कथा साहित्य का परिचय (Introduction to Hindi Fiction)

कहानी, एकांकी, नाटक, आदि।

इकाई-2: बॉलीवुड का परिचय (Introduction to Bollywood)

हिंदी सिनेमा-उद्भव और विकास, प्रवृत्तियाँ।

इकाई -3: देवदास उपन्यास (Devadass- Novel)

देवदास-शरतचंद्र चट्टोपाध्याय-उपन्यास देवदास पर आधारित सिनेमा।

इकाई -4: फाइव पॉइंट सम ओन (Five point someone-Novel)

3 इंडियट्स-राजकुमार हिरानी- उपन्यास फाइव पॉइंट सम ओन पर आधारित सिनेमा।

इकाई -5: कोहबर की शर्त (Condition of Kohbar -Novel)

नदिया के पार - हिरेन नाग - हम आपके हैं कौन के रूप में राजश्री प्रोडक्शंस - उपन्यास कोहबर की शर्त पर आधारित सिनेमा।

References:

- Hindi Cinema Ka Ithihaas-Sanjeev Srivatsav, Prakashan Vibhag, Bharat Sarkar, New Delhi, 2006.
- Hindi Cinema Beesvi se Ikkisvi Tak-Prahalad Agrawal, Sahitya Bhandar, Delhi, 2009.
- Indian Cinema, A Visual Voyage-Publication Division, Ministry of Information & Broadcasting, Government of India, 1998.

HIS3627

भाषाविज्ञान परिचय
Intro to Linguistics

6Hr/6Cr

The course deepens and enlarges the students' mastery of Hindi. They will acquire the basic knowledge on study of Linguistics in Hindi.

इकाई -1: भाषाविज्ञान – अध्ययन (Study on Linguistics)

परिभाषा, पद्धतियाँ, ऐतिहासिक पद्धति, कालक्रमिक, तुलनात्मक, संरचनात्मक ।

इकाई -2: स्वरविज्ञान और रूपविज्ञान (Phonetics and Morphology)

ध्वनिक भाषण की अंग ध्वनि का तंत्र, उत्पादन, भाषण का वर्गीकरण, स्वर और व्यंजन ध्वनि ध्वनि गुणतनाव, पिच, टोन, फाकू - शब्दांश, सरकना ।

इकाई -3: अर्थविज्ञान (semantics)

शब्दार्थ, वाक्य, अर्थ का विस्तार, अर्थ का संकुचन, अर्थ के स्थानांतरण ।

इकाई -4: वाक्यविज्ञान (syntax)

वाक्य का वर्गीकरण ।

इकाई -5: शैली (style)

लिखने, पढ़ने और बोलने की शैली ।

इकाई -6: प्रायोगिक भाषाविज्ञान (pragmatics)

हिन्दी पर अंग्रेजी के भाषाई प्रभाव ।

Reference:

- Hindi sahitya ka sambandhan ithihaas- Dr.Rajendra Prasad singh, Gowtam book centre, 2009.
- Bhasha Vigyan – Bolnath tiwari, Kitab Mahal, Alahabad, 2001.
- Adhunik Bhashavigyan - Dr.Rajmani Sharma, Vani Prkashan, New Delhi.
- Bhasha Vigyan Pravesh-Sumatheendra-Dhakshin Bharat Hindi Prachar Saba, Chennai, 1994.

HIS3629

उपन्यास और आलोचना
Novel and criticism

6Hr/6Cr

The aim of the course is to centralizes on the Hind Novel and builds the students to develop the art of criticism. It helps the students to understand the Theme and Characterisation according with the historic, social and political situations. The course also guides the students to get the concepts of Criticism.

इकाई -1: उपन्यास - परिचय (Novel-Introduction)

पहला उपन्यास, हिंदी का पहला उपन्यास, प्रसिद्ध उपन्यासकार

भौगोलिक, सामाजिक, राजनीतिक, आर्थिक परिस्थितियाँ, ऐतिहासिक परम्परा

इकाई -2: उपन्यास के तत्व (Elements)

पात्र, कथावस्तु और कथानक, कथोपकथन, देशकाल, भाषा और शैली, उद्देश्य

इकाई -3: आलोचना – परिचय (Criticism-Introduction)

परिभाषा, प्रकार आदि।

इकाई -4: उपन्यास के भेद (Types)

सामाजिक, राजनीतिक, ऐतिहासिक, मनोवैज्ञानिक, औचलिक, जीवनी परक
घटना प्रधान, चरित्र प्रधान, वातावरण प्रधान आदि।

इकाई -5: आलोचना (Criticism)

इकाई -6: उपन्यास (Novel)

समुद्र में खोया हुआ आदमी - कमलेश्वर

Reference:

- Ithihaas aur alochana – Namvar Sing, Lok Bharati prakashan, Allahabad, 1962.
- Hindi sahitya ka Ithihas – Acharya Ramchandra Shukl, Kashinagari prachrini sabha, Kashi, 2012.
- Adhunik Hindi Lekhan – Prabhakar Maachve & Krishna Murari Sharma, Thomson press ltd. Department of Publication, Delhi, 1974.
- Alochana Aur Sahitya-Dr.Indranath Madan, Neel Book Prakashan, Allahabad, 2006.

HIS3631

कामकाजीय हिंदी-I
Function Hindi - I

6Hr/6Cr

The course helps the students to acquire a level of language competence that allows them independent handling of almost any Hindi text. In addition, the students will substantially have broadened their intercultural competence and thus their scope of dealing with the different cultures of India.

इकाई -1: अभिवादन / प्रत्यभिवादन (Greetings)

इकाई -2: घरेलू वार्तालाप (Household conversation)

इकाई -3: कामकाजीय वार्तालाप (Official conversation)

इकाई -4: पत्र लेखन / पत्राचार (Letter writing / correspondence)

इकाई -5: भेंटवार्ता / साक्षात्कार (Interview)

इकाई -6: राजभाषा (Official Language)

Recommended Texts:

- Kamkaajeya Hindi – Dr.P.M.Thomson, Sameeksha Publication House, Delhi, 2008.

Reference:

- Vyavasayik Hindi – R.N.Dube, Prathagar gupt, National publicating House, Delhi, 1979.
- vyavahari Hindi-Sri.Nagappa, Dhakshin bharat hindi prachar sabha, Chennai, 1958.
- Bolchal ki Hindi- Dr. Suseela Gupta, Lokbharati Prakasan, Allahabad.

- Anuprayogik Hindi- Dr.Krishna Kumar Goswami, Arunoday Prakashan, Delhi.
- Saras Nibandh Evam Saral Patra Lekhan-Prema Jothi, Sahni Publication, Delhi, 2012.
- Prayojan Moolak Hindi-Dr.Vinod godrey, Rajya hindi Sahithya Academy, Mumbai, 2007.

HIS3533

सृजनात्मक लेखन

5Hr/5Cr

Creative Writing

The course aims to provide the informations about the Art of Story writing by detailing about the Theme, Characterisation, Emotions, Imaginations, Language and Acting etc. The course also encourages the Art of Story Writing among the Students.

इकाई -1: हिंदी लघु कथाओं की उद्भव और विकास

(Origin and Development of Hindi Short Stories)

इकाई -2: कहानी के तत्व (Elements of Story)

कथावस्तु और कथानक, कथोपकथन, देशकाल, पात्र और चरित्र चित्रण, भाषा और शैली, उद्देश्य ।

इकाई -3: सृजनात्मक लेखन (Creative Writing)

तत्व, रूप, विभिन्न प्रकार, कला, भाषा, भाव आदि।

इकाई -4: हिन्दी कहानियाँ (Hindi Short Stories)

आकाश दीप - जयशंकर प्रसाद

इनाम - जेनेद्र कुमार

बोलाराम का जीव - हरिशंकर परसाई

शत्रु - अज्ञेय

इकाई -5: सृजनात्मक लेखन का अभ्यास और परियोजना (Creative writing Practice and Project)

Reference Text:

- Pradinidi Kahaniyan-Eswarchandra, Shiksha Bharati, Delhi, 2013.
- Kahani Koonan-Dr.Kailash Chandra Agrawal, Harsha Prakashan, Agra, 2012.

Reference:

- Hindi Kahani: Udbhav aur Vikas-Dr. Suresh Sinha, Vani Prakashan, Delhi.
- Hindi Kahani: Antarang Pahchan-Ramdaras Misra, Vani Prakashan, Delhi.
- Hindi sahitya ka Itihas – Acharya Ramchandra Shukl, Kashinagari prachrini sabha, Kashi, 2012.
- Adhunik Hindi Lekhan – Prabhakar Maachve & Krishna Murari Sharma, Thomson press ltd. Department of Publication, Delhi, 1974.

HIS3235

बोलचाल हिंदी-I

3Hr/2Cr

Spoken Hindi - I

The course encourages the Non-Hindi speaker to speak Hindi by making the students enjoy the Spoken Hindi. It also provides the practice the pronunciation of Hindi words and with simple conversations.

Module-I (vocabulary)

Days
Months
Parts of Body
Relations
Vegetables, Fruits and Flowers
Directions
Seasons
Numbers (1 to 100)

Module-II (Grammar)

Tense
Sentence making

Module-III (Conversation & Translation)**Unit-I (conversation)**

Doctor and patient
Passenger and Conductor
Customer and Shop keeper
Mother and son
In the police station
In the Hotel
In the road
In the Marriage

Unit-II (Translation)

Exercise (1 to 10)

Reference Text:

- Subodh Hindi Rachna-Dhakshin Bharat Hindi prachar sabha, 2013.
- Hindi vyakaran tatha prayog – Harishankar-Rajalakshmi publications, Chennai, 2003.
- Hindi Parichay-Dakshin Bharat Hindi Prachar Sabha, 2006.
- Bol chaal ki Hindi – Samiksha prakashan, 2004.

HIS3628

हिंदी नाटक

6Hr/6Cr

Hindi Drama

The aim of the course is to sensitize the student to the aesthetic, cultural and social aspects of literary appreciation and analysis. It helps the students to understand the Drama and one-act plays in Hindi. The course also guides the students to get the concepts used in the plays and their way of presentation on stage.

इकाई -1: नाटक और रंगमंच (drama and stage - An Introduction)

भारतेन्दु हरिश्चन्द्र, हिंदी नाटककार, कल्पना, हिंदी सिनेमा ।

इकाई -2: हिंदी नाटक का उद्भव और विकास (Origin and Evolution of Hindi Drama)

इकाई -3: हिंदी के प्रसिद्ध नाटककार (Famous Drama Writers in Hindi)

इकाई -4: नाटक (Drama)

आषाढ का एक दिन - मोहन राकेश

Recommended Texts:

- Hindi Natak – Udbhav aur Vikas –Dr.Dashrath Oja, Yugantar press, Delhi.
- Ashad ka ek din – Mohan Rakesh, Rajpal & Sons, Delhi, 2011.
- Bahu ki vida – Vinod Rastogi, Anjali prakashan, Delhi.
- Charumitra – Ramkumar Varma, Sadhana Sadan, Alahabad.

Reference:

- Hindi Natak Sahitya ka Ithihas – Somnath Gupt, Hindi Bhavan, Alahabad, 1951.
- Hindi sahitya ka Ithihas – Acharya Ramchandra Shukl, Kashinagari prachrini sabha, Kashi, 2012.
- Adhunik Hindi Lekhan – Prabhakar Maachve & Krishna Murari Sharma, Thomson press ltd. Department of Publication, Delhi, 1974.

HIS3630

कंप्यूटर में हिंदी

6Hr/6Cr

Hindi in Computer

The course enables the students to understand the functioning of computer and to train them in Hindi computing. The course makes the students understand the uses and utilities of computer and makes them able to understand the functioning of Hindi Computing.

इकाई -1: संगणक एक परिचय (Introduction to Computer)

संचालन, बुनियादी और विशेषताएँ

इकाई -2: कंप्यूटर उपकरण (Parts of Computer)

इकाई -3: संगणक में हिंदी की उपयोग (Hindi in Computer)

हिंदी वेबसाइट, शिक्षा में प्रयोग, सहायक उपकरण

इकाई -4: संगणक और इंटरनेट (Computer and Internet)

इ-मेल, वेबसाइट।

इकाई -5: हिंदी टंकण अभ्यास (Hindi typing-practice)

इकाई -6: हिंदी संगणक टंकण अभ्यास (Hindi typing in Computer-practice)

Reference:

- Computer gyan sarovar – Prof.D.P.Chirania, Promit prakashan, 2010.
- Shikshan takneeki- Dr.Jaiprakash singh & Dr.Dilip yadav, Arpita prakashan, 2012.
- Computer: Shbd parichay evam pratibha – Dr.Sarojini gupta, St.Joseph publishing house, 2010.
- Vigyaan preeti aur manav – Priyadasi prakash, Saksharta Kendra, Ludiana, 2011.
- Computer Parichalan Tattva - Ram Bansal, Satsahitya Prakashan, Delhi 110006

- Computer: Samanya Gyan evam User Guide -Ram Bansal Vigyacharya, Vani Prakashan, New Delhi- 110002.
- Computer ka Bhashik Anuprayog- Vani Prakashan New Delhi -110002.

Web Source:

www. I speak hindi.com
 www.webdunia.com
 www.hindinest.com
 www.bhashaindia.com
 www.jagaransahitya.com
 www.literatureworld.com
 www.languageindia.com
 www.hindi.com

HIS3632

राजभाषा हिंदी
Official Hindi Language

6Hr/6Cr

The course trains the learners with the official language. The differences between ordinary conversation and the official communication were highlighted. The aim is to make the students to familiar with the official language.

इकाई -1: राजभाषा हिंदी की आवश्यकता (Importance of official Hindi)

इकाई -2: प्रशासनिक शब्दावली और वाक्यांश (Administrative vocabulary and Phrases)

इकाई -3: सरकारी और अर्धसरकारी पत्र (Government and Semi-Government letters)

इकाई -4: परिपत्र (Circular)

इकाई -5: कार्यालय अनुवाद (Official Translation)

इकाई -6: टिप्पण और प्रारूपण (Noting and Drafting)

Recommended Texts:

- Kamkaajeya Hindi – Dr.P.M.Thomsaon, Sameeksha Publication House, Delhi, 2008.

Reference:

- Vyavasayik Hindi – R.N.Dube, Prathagar gupt, National publishing House, Delhi, 1979.
- vyavahari Hindi-Sri.Nagappa, Dhakshin bhara hindi prachar sabha, Chennai, 1958.
- Bolchal ki Hindi- Dr. Suseela Gupta, Lokbharati Prakasan, Allahabad.
- Anuprayogik Hindi- Dr.Krishna Kumar Goswami, Arunoday Prakasan, Delhi.
- Saras Nibandh Evam Saral Patra Lekhan-Prema Jothi, Sahni Publication, Delhi, 2012.
- Prayojan Moolak Hindi-Dr.Vinod godrey, Rajya hindi Sahithya Academy, Mumbai, 2007.

HIS3534

अनुवाद सिद्धांत और व्यवहार
Translation Theory and Practice

5Hr/5Cr

The course introduces the art of translation in Hindi. It also differentiates the translation from the transliteration. The course helps in understanding the method of translation without the grammatical error. The course also gives the practice of translation.

इकाई -1: अनुवाद सिद्धांत (Translation Theory)

परिचय, वैश्विक परिप्रेक्ष्य, अनुवाद की परिभाषा, अनुवाद का महत्व, प्रकार।

इकाई -2: अनुवाद की समस्याएँ (Problems of Translation)

अनुवादक के गुण और दोष, विज्ञान और प्रौद्योगिकी के साथ जुड़ा अनुवाद सामग्री।

इकाई -3: अनुवाद में आधुनिक तकनीक (Modern Technology)

तकनीकी शब्दावली, साधारण अनुवाद और मशीन अनुवाद।

इकाई -4: अनुवाद का अभ्यास (Exercise-Translation)

अंग्रेजी से हिंदी और हिन्दी से अंग्रेजी, शब्द, वाक्य, अनुच्छेद।

इकाई -5: साहित्यिक अनुवाद (Literary Translation)

परिचय और अभ्यास।

Recommended Texts:

- Vyavaharik Hindi Rachana-Harishankar Gupt. Rajlakshmi Publications, 2000.

Reference:

- Hindi me vyavaharik Anuvaad – Dr.Aalok kumar rastogi , Jeevan jyoti prakashan, Delhi.
- Anuvaad kya hay – Dr. Rajasekar, Vani prakashan, Delhi.
- Anuvaad prakriya evam pradharshiya – Reeti rani palival, Vani prakashan, Delhi.
- Anuvaad aur rachna ka uttar jeevan – Dr.Raman Shimha, Vani prakashan, Delhi.
- Anuvad: Sidhant aur Prayog-Dr.G.Gopinathan,Lokbharati Prakasan, Lucknow.
- Ikkeesvim Sadee me Anuvad-Dasayen aur Disayen- Ed; K.C.Kumaran,Jawahar Pustakalay, Mathura.
- Sahityanuvad: Samvad aur Samvedana-Dr.Arsu,Vani Prakasan,NewDelhi.
- Anuvad-Bhashyem-Samasyayem-Dr.N.E.Viswanatha Ayyar, Gyan Ganga, Delhi.
- Natyanuvad: Sidhant aur Vivechan-Dr.A.Achutan, Vani Prakashan, New Delhi.
- Anuvaad ki vyavaharik samasya-Bolnath Tiwari, Paramahans Press, Delhi.

HIS3236

बोलचाल हिंदी - II

3Hr/2Cr

Spoken Hindi - II

The aims to enhance the writing and reading skill of the students. It also aims to practice the apt way of communicative language and develop the creativity of students in usage of Descriptive language.

Module-I

Incident writing (1 to 5)

Composition of story (1to 5)

Module-II (Functional language)

Muhavre
Lokokti

Module-III**Unit-I (Story development)**

Picture describing

Unit-II (Conversation)

In the Hospital

In the Airport

In the Cricket Match

In the office

In the Court

In the Browsing Centre

Between passenger and Riskhawala

Reference:

- Hindi Prayog – Dakshin bharat Hindi prachar sabha, 2006.
- Hindi Vatayan-Dr.K.M.Chandramohan-Vishva vidhyalay Publication, Varanasi, 2010.
- Bol chaal ki Hindi – Samiksha prakashan, 2004.

HIS3437

पर्यावरण शिक्षा

4Hr/2Cr**Environmental Studies**

The course alerts the students about the environment and its challenges. It also awakes their responsibility to preserve natural wealth.

इकाई-1: पर्यावरण और संस्कृति (Environment and Culture)

प्रकृति की सम्पदा, पशु, पक्षी, वन, खनन आदि ।

इकाई-2: प्रदूषण (Pollution)

भूमि, जल, वायु, शोर, कारण और प्रभाव आदि ।

इकाई -3: ताजमहल और प्रदूषण (Taj mahal and pollution)

आकार, संगमरमर पत्थर, प्रदूषण का अभिशाप ।

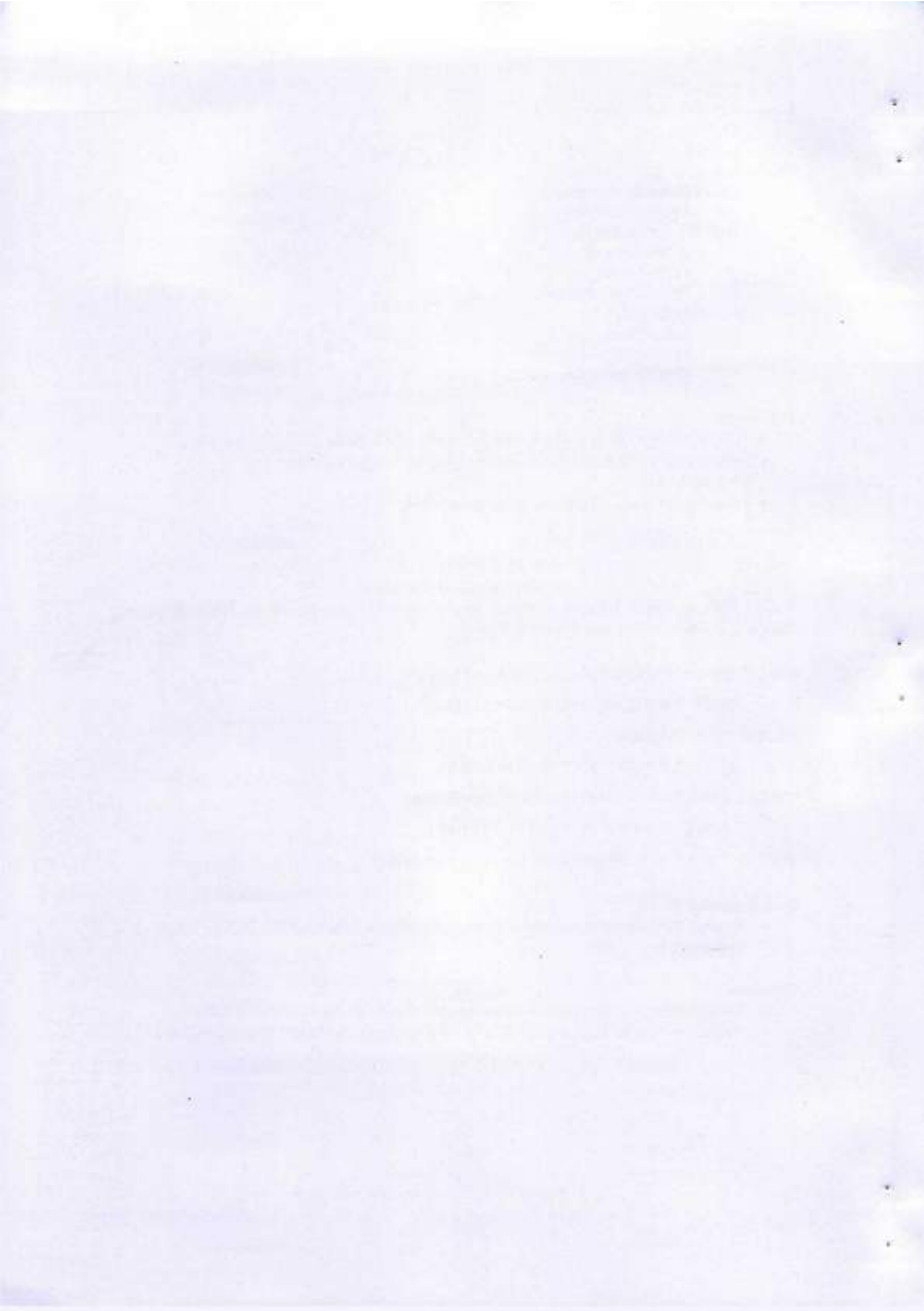
इकाई -4: पर्यावरण सुरक्षा और हम (Environmental Protection)

Recommended Texts:

- Prakruti Paryavaran Samasyayen evam Samadhaan- keseri nandan shukla, navdeep prakashan, Delhi, 2009.

Reference:

- Vedon me paryavaran shiksha – daya dev, surabhi publications, jaipur, 2008.
- Global warming samasya aur samadaan – Rajiv Ganga, Radha rani Prakashan, 2012.



PROGRAMME FRAME
UNDERGRADUATE DEPARTMENT OF FRENCH
Courses Offered From 2015 Batch Onwards

Sem	Part	Code	TITLE	Hr/ Wk	Cr	Marks	
1	Part I	TAM/HIS/FRS		3	2	30	
	Part II	ENS 1201	Conversational Skills	3	2	30	
	Part 3 Major	Core	FRS 1501	Le français élémentaire (<i>Fundamental French</i>)	5	5	75
			FRS 1403	Le français interactif - I (<i>Communicative French - I</i>)	4	4	60
			FRS 1405	L'écoute et la lecture- I (<i>Listening & Reading Skills I</i>)	4	4	60
	Sup.	HIS 1409	Communication Skills in Hindi	5	4	60	
	Part 4	N M E 1	XXX0000	Basic Tamil/Advance Tamil/Non-Major Elective	3	2	30
		L S 1	XXX0000		3	2	30
	Total				30	25	375

Sem	Part	Code	TITLE	Hr/ Wk	Cr	Marks	
2	Part I	TAM/HIS/FRS		3	2	30	
	Part II	ENS 1202	Reading & Writing Skills	3	2	30	
	Part 3 Major	Core	FRS 1502	Le français intermédiaire (<i>Intermediate French</i>)	5	5	75
			FRS 1404	Le français interactif - II (<i>Communicative French- II</i>)	4	4	60
			FRS 1406	L'écoute et la lecture- II (<i>Listening & Reading Skills II</i>)	4	4	60
	Sup.	HIS 1410	North Indian Culture and Tradition	5	4	60	
	Part 4	N M E 2	XXX0000	Basic Tamil/Advance Tamil/Non-Major Elective	3	2	30
		L S 2	XXX0000		3	2	30
	Part 5	Extension	XXX0000	NSS/ PED	1	1	15
	Total				30	25 +1	375

Sem	Part	Code	TITLE	Hr/Wk	Cr	Marks	
3	Part I	TAM/HIS/FRS		3	2	30	
	Part II	ENS 2201	Study Skills	3	2	30	
	Part 3 Major	Core	FRS 2601	La phonétique française (<i>French Phonetics</i>)	6	6	90
			FRS 2501	Les régions de la France (<i>Regions of France</i>)	5	5	75
			FRS 2403	L'expression écrite-I (<i>Writing Skills-I</i>)	4	4	60
			FRS 2401	Le français accéléré (<i>Advanced French</i>)	4	4	60
	Sup.	ENS 0000	English Phonetics and Phonology	5	4	60	
Total				30	27	405	

Sem	Part	Code	TITLE	Hr/Wk	Cr	Marks	
4	Part I	TAM/HIS/FRS		3	2	30	
	Part II	ENS 2202	Career Skills	3	2	30	
	Part 3 Major	Core	FRS 2602	L'initiation à la traduction (<i>Introduction to Translation</i>)	6	6	90
			FRS 2502	L'histoire de France (<i>History of France</i>)	5	5	75
			FRS 2404	L'expression écrite-II (<i>Writing skills-II</i>)	4	4	60
			FRS 2408	Le cinéma français (<i>French Cinema</i>)	4	4	60
	Sup.	ENS 0000	Theories of Translation	5	4	60	
Total				30	27 + 1	405	

Sem	Part		Code	TITLE	Hr/Wk	Cr	Marks
5	Part 3 Major	Core	FRS 3601	La pratique de la traduction (<i>Translation Techniques</i>)	6	6	90
			FRS 3603	Le Roman français (<i>French Novel</i>)	6	6	90
			FRS 3605	Le français des affaires (<i>Business French</i>)	6	6	90
		Innova tive	FRS 3507	La musique française: Chanson (<i>French Song</i>)	5	5	75
	Part 4	L S 3	XXX0000	Life Skill I	3	2	30
		VAL	VAL 3200	Value Education	4	2	30
Total					30	27	405

Sem	Part		Code	TITLE	Hr/Wk	Cr	Marks
6	Part 3 Major	Core	FRS 3602	La poésie française (<i>French Poetry</i>)	6	6	90
			FRS 3604	Le théâtre français (<i>French Theatre</i>)	6	6	90
		Innova tive	FRS 3606	La France contemporaine (<i>Contemporary France</i>)	6	6	90
			FRS 3508	Le français de l'hôtellerie et du tourisme (<i>Hotel French and Tourism</i>)	5	5	75
	Part 4	L S 4	XXX0000	Life Skill II	3	2	30
		EVS	FRS 1200	ECO French	4	2	30
Total					30	27	405
Grand Total for Semesters I-VI					180	158 + 2	2370

Courses offered to Non-major students by the Department of FRENCH

PART III Supportive

<i>SEM</i>	<i>COURSE NO.</i>	<i>COURSE TITLE</i>	<i>Hrs.</i>	<i>Cr.</i>	<i>Marks</i>
I	FRS 1407	Langue et culture françaises- I (French language and Culture -I)	5	4	60
II	FRS 1408	Langue et culture françaises- II (French language and Culture -II)	5	4	60
III	FRS 2407	L'initiation à la langue française (Introduction to Functional French)	5	4	60
IV	FRS 2408	L'initiation à la littérature française (Introduction to French Literature)	5	4	60
Total			20	16	240

PART IV Non-Major Electives

<i>SEM</i>	<i>COURSE NO.</i>	<i>COURSE TITLE</i>	<i>Hrs.</i>	<i>Cr.</i>	<i>Marks</i>
I	FRS 1207	Introduction to French Language	4	2	30
II	FRS 1208	French civilisation	4	2	30
Total			8	4	60

PART IV Life Skill Courses

<i>SEM</i>	<i>COURSE NO.</i>	<i>COURSE TITLE</i>	<i>Hrs.</i>	<i>Cr.</i>	<i>Marks</i>
I	FRS 1209	La francophonie (French in the world)	4	2	30
II	FRS 1210	Découverte de la France (Discovery of France)	4	2	30
V	FRS 3209	Parlons français – I (Let's speak French-I)	4	2	30
VI	FRS 3210	Parlons français – II (Let's speak French-II)	4	2	30
Total			16	8	120

French – Part – I
Study plan for UG (SF) students (2015 batch onwards)
Courses offered for UG Programme under Part I

Semester	Category	Code	Course Title	Hr/ wk	Cr.
I	Part I	FRS 1201	General French - I	3	2
II	Part I	FRS 1202	General French - II	3	2
III	Part I	FRS 2203	Advanced French - I	3	2
IV	Part I	FRS 2204	Advanced French - II	3	2

Rationale:

In the present context of globalization, mobility and migration, there is a growing need for learning a foreign language in order to compete with the job market. Learning a foreign language would also be a gateway to undertake higher studies in French / Francophone universities.

FRS1201 & FRS1202 – General French I & II**Objective:**

This course aims to develop the students' proficiency in the four basic skills of listening, speaking, reading and writing French, with equal thrust on vocabulary building and cultural awareness.

Syllabus structure:

The course content is based on the recommendations given by Common European Framework in Language Learning.

The syllabus aims at:

- (a) Developing communicative competence of the students in French.
- (b) Creating cultural awareness.
- (c) Promoting autonomy in learning French.

Text book:

Monique Denyer, Agustin Garmendia, Marie-Laure Lions-Olivieri, *Version Originale 1* Méthode de français – Livre d'élève (A1), Editions Maison des langues, Paris, 2009.

Grammar book for référence :

1. Roxane Boulet, Anne Vergne-Sirieys, Sylvie Poisson-Quinton. Célyne Huet-Ogle, *Grammaire expliquée du français*. (niveau débutant)

Dictionaries:

1. Bilingual: The Concise Oxford-Hachette French Dictionary
2. Monolingual French: Le Petit Robert.

Duration:

The course content to be covered in one semester is divided into 4 units. Each unit is taught for a period of 10 hrs.

FRS1201	GENERAL FRENCH – I	3hr / wk: 2cr
Unit 1 Parlez-vous français?	France, Greetings, Francophone countries	
Unit 2 Elle s'appelle Laura.	Social relations, French Personalities.	
Unit 3 Mon quartier est un monde.	Location - Locate a place in the map of France.	
Unit 4 Tes amis sont mes amis.	Invitations	

FRS1202	GENERAL FRENCH –II	3hr / wk: 2cr
Unit 1 Jour après jour	Social behaviour, Hobbies.	
Unit 2 On fait les boutiques	Clothes and fashion	
Unit 3 Et comme dessert?	Gastronomy / Gourmet	
Unit 4 Je sais bricoler.	Information and services	

FRS2203 & FRS2204 – Advanced French I & II

Objectives:

This course aims to develop the students' proficiency in the four basic skills of listening, speaking, reading and writing French, with equal thrust on vocabulary building and cultural awareness.

Syllabus structure:

This course helps the students to understand French society and its culture. It enables them to enrich their vocabulary and expressions. It also familiarizes them with the sentence structure of the language, reinforcing the grammar rules and the sentence patterns which have been dealt with in the earlier semesters. Focus will also be on translation skills which would open up opportunities for the students in areas of education, business transactions at international level, specifically in the IT & ITES organisations.

The syllabus aims at:

1. This course aims at developing communicative competence of the students in different situations (commercial, social, technical)
2. To introduce the students into the field of Translation

Text books:

1. Denis C. Meyer, *Clés pour la France en 80 Icônes Culturelles*, Hachette, Paris, 2010.
2. Evelyne Siréjols, Dominique Renaud, *Grammaire 450 nouveaux exercices* (niveau intermédiaire), CLE International, 2012.

Grammar books for reference:

1. Roxane Boulet, Anne Vergne-Sirieys, Sylvie Poisson-Quinton, Célyne Huet-Ogle, *Grammaire expliquée du français*. (niveau intermédiaire)

Dictionaries:

1. Bilingual: **The Concise Oxford-Hachette French Dictionary**
2. Monolingual French: **Le Petit Robert**.

Duration:

The course content to be covered in one semester is divided into 3 units. Each unit is taught for a period of 13 hrs.

FRS2203**ADVANCED FRENCH - I****3hr / wk: 2cr**

- Unit 1 Alimentation et gastronomie - Les pronoms personnels - Le pronom en - Le pronom y).
 Unit 2 Célébrités - Le temps passé (le passé composé) - L'imparfait.
 Unit 3 Histoire et institutions - Le Futur - Le conditionnel présent - Le Participe Présent - Le gérondif.

FRS2204**ADVANCED FRENCH - II****3hr / wk: 2cr**

- Unit 1 Langue, médias et culture - Les pronoms (possessifs, démonstratifs, interrogatifs)
 Unit 2 Industrie, éducation et travail - Le pronom relatif simple - Le subjonctif
 Unit 3 La vie quotidienne - Le conditionnel passé - Le plus-que parfait - Le futur antérieur

FRS 1501

Le français élémentaire
 (Fundamentals of French Language)

5Hr / 5Cr

Syllabus structure: This module includes basic sound patterns of the French language and rudiments of French grammar.

Objective: It aims at building a solid foundation in the acquisition of standard French through basic sound patterns of the French language and fundamental French grammar to the students.

- Unit 1: Les alphabets - Les sons - les accents - Les noms - Les articles
 Unit 2: Les verbes - Le présent - Le pronom sujet - L'interrogation simple - La négation
 Unit 3: Les adjectifs (Qualificatifs, Possessifs, Démonstratifs, Interrogatifs) - La place de l'adjectif - Les prépositions (à et de, de temps)
 Unit 4: Les temps : Le présent - Les verbes pronominaux - l'impératif
 Unit 5: Le présent progressif - Le futur proche - Le passé récent - Le temps futur

Text

Maïa Grégoire, *Grammaire progressive du français avec 400 exercices (niveau débutant)*, CLE International /SEJER, Paris, 2004.

Reference books

1. Claire Miguel, *Grammaire en dialogues (niveau débutant)*, CLE International, Paris, 2005.
2. Roxane Boulet, Anne Vergne-Sirieys, Sylvie Poisson-Quinton, Célyne Huet-Ogle, *Grammaire expliquée du français (niveau débutant)*, CLE International, Paris, 2003.

FRS 1403

Le français interactif – I
(Communicative French – I)

4Hr / 4Cr

Syllabus structure: It integrates modern communicative and interactive approach. It follows the 'a real action method' aligned with the A1 level established by Common European Framework of Reference for Languages (CEFR).

This manual comprises various multimedia and audio-visual elements (podcasts, videos, documents) that help the students to discover the French language and understand the functional use of the language in concrete situations in daily life.

Objective: The course aims at developing the student's proficiency in the four basic skills (speaking, listening, reading and writing) in French and sensitizing the students to appreciate the French culture.

Unit 1: Apprendre ensemble :	Vous comprenez? – Au travail! – On se détend? – Racontez-moi
Unit 2: Suivre en français :	Bon voyage – Bon appétit? – Quelle journée!
Unit 3: Etablir des contacts - I :	Souvenez-vous – On s'appelle?
Unit 4: Etablir des contacts - II :	Un bon conseil – Parlez-moi de vous!

Text

Girardet, J., Pécheur, J, *Echo A1, méthode de française*, CLE International, Paris, 2010

Reference books

1. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007
2. Claire Miguel, *Communication progressive du français avec 270 activités (niveau débutant)*, CLE International /SEJER, 2004.

FRS 1405

L'écoute et la lecture – I
(Listening and Reading Skills – I)

4Hr / 4Cr

Syllabus structure: It builds up the base for oral and reading skills, by initiating the students to the art of listening and reading. It is divided into four units with emphasis on the French sounds and sound pattern, syllabification, essential vocabulary needed for using in day to day conversation and understanding the basic documents and express their view in short sentences.

Objective: It aims at developing the reading and listening skills through variety of exercises in listening and reading.

- Unit 1: Faire les courses
Unit 2: Renseigner, se renseigner
Unit 3: Parler des lieux et des objets
Unit 4: Parler des autres

Text

Claire Miguel, *Communication progressive du français avec 270 activités (niveau débutant)*, CLE International /SEJER, 2004.

Reference books / Websites

1. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007
2. Girardet, J., Pécheur, J., *Echo A1, méthode de française*, CLE International, Paris, 2010
3. RFI, http://www1.rfi.fr/lffr/statiques/accueil_apprendre.asp
4. TV5Monde- www.tv5monde.com/
5. http://www.lepointdufle.net/apprendre_a_lire/presentation.htm

FRS 1407*Langue et culture françaises – I*
(French language and culture -I)**5Hr / 4Cr**

Syllabus structure: It is a beginners' course in French language. The content is divided into five units with emphasis on the real life situations that reflect the culture of the French people. It includes basics of the sound pattern and the essential grammar and vocabulary needed for communication in everyday conversation.

Objective: It aims at developing the four basic skills (speaking, listening, reading and writing) in French. It initiates the students to the study of French language by giving them an exposure to the everyday life of the French people and by helping them understand and appreciate the beauty and the culture of France.

Unit1: Bienvenue : Les alphabets – les sons – les accents- Prononciation – les voyelles. La nationalité – Communiquer – salutations.

Unit2: Bonjour! : Les nombres – les jours – l'heure – Les présentations –Introduire les verbes « être » Prononciation : liaison – les noms – masculin / féminin.

Unit3: Ça va? Le verbe 'avoir'. Mots utiles. Expressions pour la Conversation. Prononciation: le français et l'anglais Copain, copine Au café.

Unit4: Oui, nous parlons français! Les verbes en *er* – le présent – les trois formes. Négation – Dialogue dirigé. Les goûts et les préférences. Les prépositions

Text

The study material will be provided to the students by the course teacher.

Reference book

1. Claire Miguel, *Grammaire en dialogues (niveau débutant)*, CLE International, Paris, 2005.
2. Mahitha Ranjit, *Apprenons le français 2 and 3*, New Delhi: Educational Publisher, 2007.
3. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007
4. Website: http://www.a-vous-la-france.co.uk/apprenons_le_francais.htm

FRS 1207**Introduction to French Language****4Hr/ 2Cr**

Syllabus structure: It is an introductory course to the French language. It covers the fundamentals of French language such as French alphabets and phonetics, essential grammar and simple vocabulary.

Objective: It aims at initiating the students to the rudiments of French language and creates an interest in learning this foreign language.

Unit 1 Que savez-vous de la France ? L'Alphabet, les accents- Prononciation. Les Expressions - Salutations	What do you know about France? Alphabet- Accents -Prononciation Expressions – Greetings
Unit 2 Les jours, les mois, les nombres - Les articles, les noms et les adjectifs	Days, months and numbers articles, nouns and Adjectives
Unit 3 Les présentations - Se présenter	Introducing one self
Unit 4 L'heure - le temps – verbe « faire »	Time – Expressing Weather

Reference Book / website

1. Mahitha Ranjit, *Apprenons le français 2 and 3*, New Delhi: Educational Publisher, 2007.
2. Website: http://www.a-vous-la-france.co.uk/apprenons_le_francais.htm

FRS 1209**La Francophonie
(French in the world)****4Hr / 2Cr**

Syllabus structure: It is an introduction to the French speaking countries in the world. This module covers four thematic topics on the use of French language in the world, French speaking countries, their cultural and the linguistic diversity.

Objective: It aims at giving the students an exposure to the rich cultural diversity of the French speaking countries around the globe.

Unit 1 : La Francophonie, c'est quoi ?	What is Francophonie ?
Unit 2 : L'évolution de la Francophonie	Evolution of Francophonie.
Unit 3 : Les Pays francophones	Francophone countries
Unit 4 : Le fonctionnement et Les opérateurs de la Francophonie	Structure and Agencies.

Reference book

Jackson Noutchie Njike, *Civilisation progressive de la francophonie*. (Niveau débutant), CLE International-2005

FRS 1502

Le français intermédiaire
(Intermediate French)

5Hr / 5Cr

Syllabus structure: This module is comprised of an in-depth study of grammar categories and structures with practice drills to enable the students to use it more confidently.

Objective: It aims at increasing the students' linguistic competency which would enable them to apply the grammatical structures correctly to create original sentences.

Unit 1: Le temps passé (le passé composé) – Les pronoms (personnels, en, y, tonique)

Unit 2: L'imparfait – La comparaison de quantités – Le conditionnel présent
Les pronoms (possessifs, démonstratifs, interrogatifs)

Unit 3: Le pronom relatif simple – Le gérondif – Le conditionnel passé – Le plus-que
parfait – Le futur antérieur

Unit 4: Le pronom relatif composé – Le subjonctif

Unit 5: Le passif – Les discours rapportés

Text

Maïa Grégoire, Odile Thiévenaz, *Grammaire progressive du français avec 500 exercices (niveau intermédiaire)*, CLE International, VUEF, 2004

Reference books

1. Claire Miguel, *Grammaire en dialogues (niveau débutant)*, CLE International, Paris, 2005.
2. Roxane Boulet, Anne Vergne-Sirieys, Sylvie Poisson-Quinton, Célyne Huet-Ogle, *Grammaire expliquée du français (niveau intermédiaire)*, CLE International, Paris, 2003.

FRS 1404

Le français interactif – II
(Communicative French – II)

4Hr / 4Cr

Syllabus structure: It integrates modern communicative approach. It follows the 'a real action method' falling in line with the A2 level established by Common European Framework of Reference for Languages (CEFR).

This manual comprises various multimedia and audio-visual elements (podcasts, videos, documents) with grammar exercises, oral and written expression, phonetics, vocabulary and syntax.

Objective: It aims at enhancing the students' ability to recognize common expressions that relate to areas of personal relevance and communicate with ease.

Unit 1: S'adapter à de nouvelles réalités – I : Vivement demain ! – Tu as du boulot ?

Unit 2: S'adapter à de nouvelles réalités – II : Qu'en pensez-vous? – C'est tout un programme!

- Unit 3: Entretenir des relations : On se retrouve – Vous plaisantez –
On s'entend bien !
- Unit 4: Se débrouiller au quotidien : La vie est dure – Que choisir ? – Je sais
faire

Text

Girardet, J., Pécheur, J, *Echo A2, méthode de français* CLE International, Paris, 2010

Reference book

1. Claire Miguel, *Communication progressive du Français avec 365 activités (niveau intermédiaire)*, CLE International /SEJER, 2004.

FRS 1406

L'écoute et la lecture – II
(Listening and Reading Skills – II)

4Hr / 4Cr

Syllabus structure: It integrates communicative approach with action method. It focuses on more advanced conversational and reading skills. It consists of four units.

Objective: It aims at developing the communication skills and giving exposure to the use of different language registers. . Emphasis is placed on the refinement of reading skills.

Unit 1: Faire un commentaire

Unit 2: Raconter une activité

Unit 3: Parler des projets

Unit 4: Partager une expérience

Text

Claire Miguel, *Communication progressive du Français avec 365 activités (niveau intermédiaire)*, CLE International /SEJER, 2004.

Reference books / Websites

1. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007
2. Girardet, J., Pécheur, J, *Echo A1, méthode de française*, CLE International, Paris, 2010
3. RFI, http://www1.rfi.fr/lfr/statiques/accueil_apprendre.asp
4. TV5Monde- www.tv5monde.com/
5. http://www.lepointdufle.net/apprendre_a_lire/presentation.htm

FRS 1408

Langue et culture françaises –II
(French language and culture-II)

5Hr / 4Cr

Syllabus structure: It includes topics related to the French society: French family, French way of living, the youth, their studies and living condition, their dress sense and fashion,

Paris and vacation in France. The emphasis is on listening, reading and watching video clips of documentaries: <http://www.tv5.org/TV5Site/info/accueil.php>.

Objective: It aims at familiarizing the students with the life of the French people and helping them to understand the conversation spoken in a wider range of settings.

Unit1: Ma famille – Les vocabulaires– la famille et les relations personnelles. L'expression avec le verbe « être » - être à – les pronoms toniques.

Unit2: Les vêtements – La mode – les vocabulaires – les verbes acheter, porter, essayer, vendre. Les expressions avec *faire* – le temps et les saisons.

Unit3: Les jeunes – Les études – L'université – les vocabulaires : logement – Finances personnelles : L'argent – le prix.

Unit4: Paris – ville Lumière : Les vacances – Le bonheur- les monuments – Bon Appétit – Le repas français.

Text

The study material will be provided to the students by the course teacher.

Reference book

1. Claire Miguél, *Grammaire en dialogues (niveau débutant)*, CLE International, Paris, 2005.
2. Mahitha Ranjit, *Apprenons le français 2 and 3*, New Delhi: Educational Publisher, 2007.
3. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007
4. Website: http://www.a-vous-la-france.co.uk/apprenons_le_francais.htm

FRS 1208

French civilisation

4Hr/ 2Cr

Syllabus structure: It is an introductory course to the French civilisation. It also covers the fundamentals of French language such as French alphabets and phonetics, essential vocabulary.

Objective: It aims at initiating the students to the rudiments of French language and creating an interest in learning French civilisation.

Unit 1 Le pays, les régions et les grandes villes France (Regions and the big cities)

Unit 2 La famille et les jeunes Family and youth

Unit 3 La mode et les vêtements Fashion and clothes

Unit 4 Les fêtes françaises French festivals

Reference Book / website

1. Mahitha Ranjit, *Apprenons le français 2 and 3*, New Delhi: Educational Publisher, 2007.
2. Alice Doumikian, *La Civilisation Française*, Université linguistique v. Brioussov Erévan, 2006
3. Website: http://www.a-vous-la-france.co.uk/apprenons_le_francais.htm

FRS 1210*Découverte de la France
(Discovery of France)***4Hr/ 2Cr**

Syllabus structure: It is an introductory course to the French culture and society. It also covers the essential vocabulary related to the topics.

Objective: It aims at initiating the students to the rudiments of French language and creating an interest in learning French civilisation.

Unit 1 Qu'est-ce que c'est la France ? et Le Pays

Unit 2 Les symboles de la France

Unit 3 Les fêtes

Unit 4 Les monuments

Reference Book / Website

1. Mahitha Ranjit, Apprenons le français 2and 3, New Delhi: Educational Publisher, 2007.
2. TV5Monde- www.tv5monde.com/

FRS 2601*La phonétique française
(French Phonetics)***6Hr / 6Cr**

Syllabus structure: This module consists of introduction to IPA, phonetics and French phonology.

Objective: The aim of this module is to introduce the students to the IPA, French phonology and phonetics.

Unit 1: Phonétique, phonologie – API – Petit guide à l'usage des débutants

Unit 2: Les caractéristiques du français : Le rythme – La musique et l'intonation – Les lettres non prononcées – La chaîne des mots et la continuité

Unit 3: Les sons spécifiques du français : Le [y] et Le [z] – Le [œ] et Le [ɔ̃] – Le [u] et Le [R]

Unit 4: Les principales difficultés du français : La tension et La sonorité

Unit 5: Les principales difficultés du français : La labilité et L'acuité

Unit 6: Les principales difficultés du français : Autres difficultés

Text

1. Charliac Lucie, Jean Thierry, Le Bougnec, Bernard, Loreil, Annie-Claude, Motron, *Phonétique progressive du français* (Débutant) avec 400exercices, CLE International, 2003.

Reference books

1. Jean-Louis Chiss, Jacques Filliolet, Dominique Maingueneau, *Introduction à la linguistique française - tome 1* : notions fondamentales, phonétique, lexicque. Hachette Éducation, Paris, 2013.
2. Francis W. Nachtmann Exercises in French Phonics, Stipes Publishing Company, Illinois, 1981.

FRS 2501**Les régions de France**
(Regions of France)**5Hr / 5Cr**

Syllabus structure: This module centres on the discovery of France and its 22 regions.

Objective: The aim of this module is to give a panoramic view about the French regions, the departments, important personalities and the culinary specialities to the students.

Unit 1: L'île de France.

Unit 2: L'ouest.

Unit 3: Le nord et L'est.

Unit 4: Le centre.

Unit 5: Le sud-ouest et le grand sud.

Text

1. Ross Steele, *Civilisation progressive du français* (intermédiaire) avec 400 activités, CLE International, 2004.
2. Odile Grand-Clément, *Civilisation en dialogues*, niveau débutant, CLE International, 2007

FRS 2401**Le français accéléré**
(Advanced French)**4Hr / 4Cr**

Syllabus structure: It is comprised of important grammatical topics such as syntax and morphology to facilitate oral and written expression and comprehension of the French language.

Objective: It aims at developing the students' language proficiency at a higher level by building on the skills acquired at the previous level.

Unit 1: Présentations et usages – Les nationalités et les langues – La famille et les âges de la vie – Les relations et les sentiments – Le caractère et la personnalité.

Unit 2: Le temps qui passe – Les activités quotidiennes – L'école – Les professions et les métiers

Unit 3: La technologie – La communication – L'argent et la banque – Commerces et commerçants

Unit4: Les vêtements et la mode – La maison et le logement – Cuisine, restaurant et café – Loisirs, jeux et sports – Transports et circulation – Le tourisme et les vacances

Text

1. Claire Leroy-Miquel, Anne Goliot-Lété, *Vocabulaire progressive du français avec 250 exercices (niveau intermédiaire)*, CLE International, SEJER, 2007.
2. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007.

Reference book

1. Claire Miquel, *Vocabulaire Progressive du Français avec 250 exercices (niveau avancé)*, CLE International, 1999.

FRS 2403

L'expression écrite-I
(Writing skills –I)

4Hr. / 4Cr.

Syllabus structure: It is comprised of authentic documents used in day-to-day life, such as filling up forms, describing one's immediate environment, writing simple letters, personal letters, e-mails, messages, brochures, advertisements and posters. It aims at helping the students to become acquainted with the French culture through extracts from French newspapers and magazines.

Objective: It aims at strengthening the students' competency in the four skills already acquired, focussing on written comprehension and written expression.

Unit 1: Remplir une fiche – Annoncer quelque chose – Inviter quelqu'un– Accepter une invitation – Refuser quelque chose

Unit 2: Féliciter quelqu'un – Proposer quelque chose – Demander des renseignements sur un lieu – Expression de la cause

Unit 3: Décrire quelqu'un – Expliquer quelque chose – Donner des renseignements– Exprimer son opinion – Comparer deux personnes

Unit 4: Raconter quelque chose – Se situer dans le temps – Ordonner un récit – Préciser les circonstances et commenter

Text

Sylvie Poisson-Quinton, *Compétences A1 Expression écrite Niveau 1*, CLE/SEJER, 2004

Reference books

1. Sylvie Poisson-Quinton, Reine Mimran, *Compétences A2 Expression écrite Niveau 2*, CLE/SEJER, 2006.
2. Peyrouet.C, *La pratique de l'expression écrite*, Editions Nathan, Paris, 1998.
3. Y. Delatour, D. Jennepin, Leon-Dufour, B. Teyssier, *Nouvelle grammaire du français: cours de civilisation française de la Sorbonne*, Hachette Français Langue Etrangère, Hachette Livre, Paris, 2004.

FRS 2407

L'initiation à la langue française
(Introduction to Functional French)

5Hr / 4Cr

Syllabus structure: It is a beginners' course in French language. The content is divided into five units with emphasis on the real life situations that reflect the culture of the French people. It includes basics of the sound pattern and the essential grammar and vocabulary needed for communication in everyday conversation.

Objective: It aims at developing the four basic skills (speaking, listening, reading and writing) in French. It initiates the students to the study of French language by giving them an exposure to the everyday life of the French people and by helping them understand and appreciate the beauty and the culture of France.

Unit 1: Les alphabets – les sons – les accents – Les nombres – les jours – l'heure – Les présentations. La nationalité – les noms : masculin / féminin – Les articles.

Unit 2: Introduire les verbes 'être' et 'avoir' et Les verbes en *er* – le présent– les trois formes. Ma famille – la famille et les relations personnelles. Ma maison – les adjectifs.

Unit 3: Les jeunes – Les goûts et les préférences – Les vêtements – La mode – Le futur – Les expressions avec *faire* – le temps et les saisons.

Unit 4: Les loisirs français – Les vacances en France – Les monuments – Les prépositions – Le passé composé – Bon Appétit – Le repas français.

Text

The study material will be provided to the students by the course teacher.

Reference book

1. Claire Miguel, *Grammaire en dialogues (niveau débutant)*, CLE International, Paris, 2005.
2. Mahitha Ranjit, *Apprenons le français 2 and 3*, New Delhi: Educational Publisher, 2007.
3. Evelyne Siréjols, *Vocabulaire en dialogues (niveau débutant)*, CLE International, 2007
4. Web http://www.a-vous-la-france.co.uk/apprenons_le_francais.htm

FRS 2602

L'initiation à la Traduction
(Introduction to Translation)

6Hr / 6Cr

Syllabus structure: This module focuses on basic notion of translation, practical sessions on translation and its techniques.

Objective: The aim of this module is to initiate the students to the art of translation through a lot of practical sessions and make them understand the underlying techniques.

Unit 1: Les notions de base de traduction

Unit 2: La terminologie.

- Unit 3: La pratique de la traduction
 Unit 4: L'analyse comparative de traductions publiées.
 Unit 5: La traduction Commerciale.
 Unit 6: La traduction Littéraire.

Text

The study material will be provided to the students by the course teacher.

Reference books

1. Delphine Chartier, Marie-Claude Lauga-Hamid, *Introduction à la traduction: méthodologie pratique* (anglais-français) français – anglais. Toulouse : Presses universitaires du Mirail, DL 1995
2. Michel Ballard, *La Traduction de l'anglais au français*. Nathan Université.1996

FRS 2502

L'histoire de France
 (History of France)

5Hr / 5Cr

Syllabus structure: It includes a general survey of the history of early Modern France with special emphasis on topics such as France and its cultural history: Absolute Monarchy, the era of Revolutions and beginnings of the Enlightenment, French political and educational system.

Objective: The aim of this module is to give a survey of the French history to familiarize the students with the past society and culture of France.

Unit 1 : L'Etat-Nation et les personnages.

Unit 2 : Un pays en Révolution.

Unit 3 : D'une guerre à l'autre.

Unit 4 : L'esprit de Mai – 1968.

Unit 5 : La Ve République.

Text

Ross Steele, *Civilisation Progressive du Français* avec 400 activités (niveau intermédiaire), CLE International, SEJER, 2004.

Reference book

Odile Grand-Clément, *Civilisation en dialogues*, niveau débutant, CLE International, 2007.

FRS 2404

L'expression écrite-II
 (Writing skills –II)

6Hr / 4Cr

Syllabus structure: It is centred on understanding the different registers in writing styles. It includes formal, analytical or critical writing.

Objective: It aims at strengthening the students' proficiency in writing. It helps the students in skills such as narrating, writing drafts and editing

Unit 1 Raconter – le narrateur – le genre du récit – écrire un dialogue.

Unit 2 Communiquer – le communiqué de presse – le texte de publicité.

Unit 3 Ordonner ses idées – trouver un plan – introduire – conclure.

Unit 4 Expliquer – rédiger un mode d'emploi – rédiger une recette.

Unit 5 Ecrire une lettre : officielle et amicale – Le curriculum vitae – la demande d'emploi.

Text

1. Sylvie Poisson-Quinton, Reine Mimran, *Compétences A2 Expression écrite Niveau 2*, CLE/SEJER, 2006.
2. Peyrouet. C, *La Pratique de L'expression écrite*, Editions Nathan, Paris, 1998.

Reference books

1. Y. Delatour, D. Jennepin, Leon-Dufour, B. Teyssier, *Nouvelle grammaire du français: Cours de civilisation française de la Sorbonne*, Hachette, Paris, 2004.
2. Boularès, Michèle, Frérot, Jean-Louis, *Grammaire progressive du français Niveau avancé avec 400 exercices*, CLE International, Paris, 2004.

FRS 2408

Le cinéma français
(French cinema)

4Hr. / 4Cr.

Syllabus structure: It consists of viewing of ten to fifteen French films (starting from the early period to the contemporary period) representative of the French culture and society. It covers the important periods and movements in French film making. It includes discussion of the films viewed and writing about it.

Objective: It aims at inculcating in the students a greater interest and appreciation of the French film and also understand French culture. Viewing and discussing the films improves their conversational skills and critical thinking by analysing them.

Au revoir les enfants	Kirikou et la sorcière
Les choristes	Entre les murs
Le huitième jour	Un cœur en hiver
Bienvenue chez les Ch'tis	Ratatouille
Les intouchables	400 coups

Reference

Site: <http://www.cinemafrançais-fle.com/>

FRS 2408

L'initiation à la littérature française
(Introduction to French Literature)

5Hr / 4Cr

Syllabus structure: It is comprised of an introduction to French literature in English, the evolution of different genres in literature developed through the centuries. The focus is on the literary movements that emerged during each period.

Objective: The aim of this module is to initiate the students to the French literature and introduce them to various literary genres.

Unit 1	La littérature : Une introduction
Unit 2	Les mouvements littéraires : La Renaissance. La Pléiade / L'Humanisme
Unit 3	Littérature classique. Le Romantisme. Le Symbolisme.
Unit 4	Le "Nouveau Roman". Le "Nouveau Théâtre".

Text

The study material will be provided to the students by the course teacher.

Reference book / web sites

- Site : a) <http://www.la-litterature.com/>
b) <http://www.larousse.fr/encyclopedie/divers/litterature/>

FRS 3601

La pratique de la Traduction
(Translation Techniques)

6Hr / 6Cr

Syllabus structure: This module focuses on basic notion of translation, practical sessions on translation and its techniques.

Objective: The aim of this module is to initiate the students to the art of translation through a lot of practical sessions and make them understand the underlying techniques.

- Unit 1: Texte littéraire.
Unit 2: Texte commerciale.
Unit 3: Traduction des proverbes.
Unit 4: Traduction des métaphores.
Unit 5: Traduction des termes électroniques.
Unit 6: L'analyse comparative des textes traduits.

Text

The study material will be provided to the students by the course teacher.

Reference books

- Delphine Chartier, Marie-Claude Lauga-Hamid, *Introduction à la traduction: méthodologie pratique* (anglais-français) français – anglais. Toulouse : Presses universitaires du Mirail, DL 1995
- Michel Ballard, *La Traduction de l'anglais au français*, Nathan Université.1996

FRS 3603

Le Roman français
(French Novel)

6Hr / 6Cr

Syllabus structure: It is comprised of French literature, the evolution of different genres in literature developed through the centuries. The focus is on the French novels and short stories of the Renaissance and the Enlightenment period. (Excerpts from 15th, 16th, 17th and 18th centuries) Readings include Charles Perrault, Voltaire, Rousseau, Guy de Maupassant and Albert Camus.

Objective: The aim of this module is to initiate the students to the French literature with particular reference to French novels and tales of the great authors.

Unit 1 : Charles Perrault	:	Le petit chaperon rouge
Unit 2 : Voltaire	:	Candide
Unit 3 : Rousseau	:	Julie ou la nouvelle Héloïse
Unit 4 : Guy de Maupassant	:	Le papa de Simon
Unit 5 : Albert Camus	:	L'Etrangère

Text

Nicole Blondeau, Ferroudja Allouache, Marie-Françoise Né, *Littérature progressive du français* avec 600 activités, niveau débutant, CLE International, 2004.

Reference books / web sites

1. Geneviève Baraona, *Littérature en dialogues, (niveau intermédiaire)* CLE International, 2005.
2. Site : a) <http://www.la-litterature.com/>
b) <http://www.larousse.fr/encyclopedie/divers/litterature/>

FRS 3605

Le français des affaires
(Business French)

6Hr / 6Cr

Syllabus structure: It is centred on business contacts, business etiquette, office environment, preparation of CV, official letters.

Objective: The aim of this module is to sensitize the students to the French commercial vocabulary.

- Unit 1 : Premiers contacts
- Unit 2 : Objets – Bureau
- Unit 3 : Emploi du temps
- Unit 4 : Voyage – Travail
- Unit 5 : Problèmes – Tranches de vie

Text

Jean-Luc Penformis, (Débutant) *Méthode de français professionnel et des affaires*
CLE International, VUEF-Paris, 2003

Reference books/ web sites

1. Jean-Luc Penformis, (Niveau intermédiaire) *français.com français professionnel*
2e édition, CLE International, VUEF-Paris, 2003
2. Site: <http://www.francais.cci-paris-idf.fr/francais-de-specialite-monde-des-affaires/>
3. William Edmiston, Annie Dumenil, *La France contemporaine*, Fourth Edition,
HEINLE Cengage Learning. Boston. USA, 2010.

FRS 3507

La musique française: Chanson
(French song)

5Hr / 5Cr

Syllabus structure: It concentrates on listening to French songs from different period's representative of the French culture and music of the French society.

Objective: It aims at ameliorating their listening comprehension and helps them understand and appreciate the different genres in French music from earlier period to the contemporary period. It enhances their overall comprehension of the French music.

Unit 1: Introduction à la chanson française

Unit 2: Chants populaires et traditionnels

Unit 3: Grands poètes – souches – Baudelaire, Verlaine et Rimbaud (album Les Chansons d'Aragon)

Unit 4: Les révolutions des années 1950 (Charles Aznavour, Barbara, Gilbert Bécaud, Georges Brassens, Jacques Brel, Léo Ferré, Serge Gainsbourg)

Unit 5: Quelques chansons emblématiques et hétéroclites de la décennie et chansons francophones.

Reference

1. <http://enseigner.tv5monde.com/themes/chanson>
2. <http://www.lepointdufle.net/chansons.htm>
3. <http://chansons-fr.com/>
4. <http://www.musique-de-la-semaine.eu/index.html>

FRS 3209

Parlons français -I
(Let's speak French-I)

4Hr / 2Cr

Syllabus structure: It introduces students to the fundamentals of conversational French, including the basics of French Phonetics and simple grammatical concepts. The emphasis is on speaking and listening comprehension. It helps the students to respond to general questions requiring concrete information such as personal background, interests and needs, family, work, travel and limited social conversations describing visual situations in simple

terms (greetings, introductions, directions, preferences, activities, identifying objects, and telling time, etc.).

Emphasis is on oral practice of the language by guided conversations. Oral participation will include repeating, readings, and conversations with partners, group skits/debates, games and songs. (by the use of audio and video CDs)

Objective: This course aims at developing proficiency in oral expression with emphasis on pronunciation and articulation. Emphasis is placed on developing listening, speaking, reading and writing skills.

Unit1 Bienvenue L'alphabet – les sons – les accents – les articles – les noms – Salutations
La salle de classe. Les objets.

Unit 2 Bonjour ! Les jours – les mois – les chiffres et les nombres – le verbe être – Se présenter. Compléter une fiche, un bulletin.

Unit 3 Quelle heure est-il ? -L'heure. Compréhension général d'oral – les présentations-les informations, un questionnaire. Les verbes avoir, faire, dire, aller et venir – Le présent. Les trois formes.

Unit 4 Parlez-vous français ? Introduire les verbes en *er*, *ir*, et les verbes irréguliers – (faire, dire, lire, écrire, aller, prendre, vouloir, pouvoir) Compréhension écrite – comprendre des annonces – L'impératif.

Text

Richard Lescure, Emmanuelle Gadet, Pauline Vey, *DEL F A1: 150 Activités* [Livret de corrigés à l'intérieur] CLE International, Sejer, Paris, 2005.

Books for reference

1. Ranjit et al. *Apprenons le français. Part 2& 3*. New Delhi: Educational publishers, 2007.
2. Henri Orteu and Jill Norman. French phrase book. London: Penguin Popular Reference, 1978.

FRS 3602

La poésie française
(French poetry)

6Hr / 6Cr

Syllabus structure: This course concentrates on the important poets, representatives of the prominent movements in the history of French literature.

Readings will include poets such as La Fontaine, Baudelaire, Victor Hugo, Arthur Rimbaud and Guillaume Apollinaire.

Objective: It aims at developing the students' analytical skills and linguistic proficiency by exposing them to the theme, rhythm, musicality and form of the poems of the eminent poets and helps them to understand the culture and appreciate them.

Unit 1: Pierre de Ronsard : Ode à Cassandre – à Hélène – Chanson in Le Second livre des amours, première partie : Amours de Marie

- Unit 2 : La Fontaine : La cigale et la fourmi – le loup et l'agneau
 Unit 3 : Victor Hugo : Demain, dès l'aube – Rêverie
 Unit 4 : Baudelaire : L'invitation au voyage – Chant d'automne
 Unit 5 : Jacques Prévert : Déjeuner du matin – Le cancre
 Unit 6 : Guillaume Apollinaire : Le pont Mirabeau – La montre et la cravate

Text

Nicole Blondeau, Ferroudja Allouache, Marie-Françoise Né, *Littérature progressive du français avec 600 activités, niveau débutant*, CLE International, 2004

Reference books / web sites

1. Geneviève Baraona, *Littérature en dialogues, (niveau intermédiaire)*, CLE International, Paris, 2005.
2. Site : a) <http://www.la-litterature.com/>
b) <http://www.larousse.fr/encyclopedie/divers/litterature/>
3. André O. Hurtgen, *Tous Les Poèmes pour le cours avancé 2nd Edition*, Longman, New York & London, 1998.

FRS 3604

*Le théâtre français
(French Theatre)*

6Hr / 6Cr

Syllabus structure: This course examines the theatre culture through major playwrights such as Molière, Beaumarchais, and Eugene Ionesco.

Objective: It exposes the students to the theatre culture in different periods of history. It helps them to understand the socio-historical background and the French culture.

Unit 1 : Molière	:	L'avare
Unit 2 : Beaumarchais	:	Le Barbier de Séville
Unit 3 : Victor Hugo	:	Hernani
Unit 4 : Marivaux	:	Le jeu de l'amour et du hasard
Unit 5 : Eugene Ionesco	:	La leçon (Extrait)
Unit 6: Edmond Rostand	:	Cyrano de Bergerac

Text

Nicole Blondeau, Ferroudja Allouache, Marie-Françoise Né, *Littérature Progressive du français avec 600 activités, niveau débutant*, CLE International, Paris, 2004.

Reference book

1. Geneviève Baraona, *Littérature en dialogues, (niveau intermédiaire)*, CLE International, Paris, 2005.

FRS 3606

La France contemporaine
(*Contemporary France*)

6Hr / 6Cr

Syllabus structure: It includes a general study of France Today with special emphasis on topics such as French culture, French political and educational system.

Objective: The aim of this module is to give a view of Today's French Society.

Unit 1 : En famille.

Unit 2 : Le système éducatif.

Unit 3 : La vie politique.

Unit 4 : La vie professionnelle.

Unit 5 : Le sport.

Unit 6 : La jeunesse

Text

Ross Steele, *Civilisation Progressive du Français* avec 400 activités (niveau intermédiaire), CLE International, SEJER, 2004

Reference book

Odile Grand-Clément, *Civilisation en dialogues*, niveau débutant, CLE International, 2007

FRS 3508

Le français de l'hôtellerie et du tourisme
(*Hotel French and Tourism*)

5Hr / 5Cr

Syllabus structure: This module consists of six thematic units related to hotel industry, tourism, receiving guests, travel agencies catering services, hotel correspondence and hospitality. It concentrates on the linguistic components with precise grammatical structures and the specific terms used in the profession. The thrust is on developing the oral skills and training for practical sessions of interacting with the tourists

Objective: It aims at familiarizing the students with all facets of tourism and developing their proficiency to become professional and help them to speak like a native speaker.

Unit 1: Bienvenue à l'hôtel de la Paix

Unit 2: Réservation

Unit 3: Accueil et Services

Unit 4: Réclamations

Unit 5: Guide

Text

1. Sophie Corbeau, Chantal Dubois, Jean-Luc Penfornis, Laurent Semichon, *Hôtellerie /Restauration.com* (Livre de l'élève) *Méthode de français de l'hôtellerie et de la restauration*, CLE International, Paris, 2006.
2. Sophie Corbeau, Chantal Dubois, Jean-Luc Penfornis, *tourisme.com/hôtellerie-restauration.com*, CLE International, SEJER-Paris, 2004.

Reference

1. Claude Peyroutet, *La France touristique*, Editions Nathan, Paris, 1995.

FRS 3210

Parlons français -II
(Let's speak French -II)

4Hr / 2Cr

Syllabus structure: It introduces students to the fundamentals of conversational French, including the basics of French Phonetics and simple grammatical concepts. The emphasis is on speaking and listening comprehension. It helps the students to respond to general questions requiring concrete information such as personal background, interests and needs, family, work, travel and limited social conversations describing visual situations in simple terms (greetings, introductions, directions, preferences, activities, identifying objects, and telling time, etc.).

Emphasis is on Oral practice of the language by guided conversations. Oral participation will include repeating, readings, and conversations with partners, group skits/debates, games and songs (by the use of audio and video CDs)

Objective: This course aims at developing proficiency in oral expression with emphasis on pronunciation and articulation. Emphasis is placed on developing listening, speaking, reading and writing skills.

Unit 1 On voyage - Demander son chemin et décrire un lieu. Lire les instructions- Prendre contact-Donner des Conseils. Ecrire un message. Le futur. Le futur proche. Les sports Les vacances

Unit 2 Les sorties – Parler de ses activités et de ses goûts. Les verbes sortir, partir, pouvoir, venir, aller. Ecrire une carte postale. Inviter, accepter, refuser. Le passé-composé.

Unit 3 Bon Appétit – Au restaurant – Le repas français – le petit déjeuner – le déjeuner-

Unit 4 Raconter une histoire personnelle – Rappel des épisodes précédents
L'imparfait – Conditionnel présent

Text

Richard Lescure, Emmanuelle Gadet, Pauline Vey, *Delf A1:150 Activités* [Livret de corrigés à l'intérieur] CLE International, Sejer, Paris, 2005.

Books for reference

1. Ranjit et al. *Apprenons le français. Part 3 & 4*. New Delhi: Educational publishers, 2007.
2. Henri Orteu and Jill Norman. *French phrase book*. London: Penguin Popular Reference, 1978.

*FRS 1200**ECO - French**4Hr / 2Cr*

Syllabus structure: This module deals with the eco-consciousness in France - the nurturing of the flora and fauna, protection of wild life and the eco-friendly activities of the French.

Objective: It aims at initiating the students to the French eco-consciousness and the methods followed in France to save the earth.

Unit 1: Ecology in France

Unit 2: The flora and fauna.

Unit 3: The protection of wild life.

Unit 4: French eco-consciousness.

Text

The study material will be provided to the students by the course teacher.



Proposed Curriculum for BA English (SF) 2015 – 2016 onwards

Vision of the Department of English (SF)

- i. To cultivate in students a genuine passion for reading literatures
- ii. To make students competent communicators
- iii. To build and nurture the students' capacity to judge the aesthetic and ethical values of literary texts and enable them to articulate the rationale behind their judgments
- iv. To prepare for a life of learning as readers and writers and equip them with 21st century skills and core competencies

Mission of the Department of English (SF)

Students of English shall demonstrate

- i. familiarity with genres, movements, works, and authors in British & American literatures, African-American literature, Indian Literature in English, and New Literatures in English
- ii. the ability to read, write, and think critically
- iii. knowledge of theoretical and critical methods
- iv. an understanding of English language and linguistics

UNDERGRADUATE DEPARTMENT OF ENGLISH (SF)

Programme for B.A. English (SF) from 2015 batch onwards

Sem	Part	Code	Title	Hr/Wk	Cr.	Marks	
I	Part I	TAM/FRS/HIS		3	2	30	
I	Part II	ENS 1201	Conversational Skills	3	2	30	
	Part III Major	Core	ENS 1461	Prose I	4	4	60
			ENS 1463	English in Use	4	4	60
			ENS 1565	Short Story and One Act Play	5	5	75
	Part IV	Supportive	ENS 1467	Literary Forms and Vocabulary	5	4	60
		*Non-Maj. Elect.	TAM xxxx ENS 1221	Basic Tamil/Adv. Tamil/NME Film Appreciation	3	2	30
		Life Skill I	ENS 1223	Word Power	3	2	30
			Total	30	25	375	
II	Part I	TAM/FRS/HIS		3	2	30	
II	Part II	ENS 1202	Reading & Writing Skills	3	2	30	
	Part III Major	Core	ENS 1562	Poetry I	5	5	75
			ENS 1464	Fiction I	4	4	60
			ENS 1466	Drama	4	4	60
	Part IV	Supportive	ENS 1468	History of English Literature	5	4	60
		*Non-Maj. Elect.	TAM xxxx ENS 1222	Basic Tamil/Adv. Tamil/NME Science Fictions	3	2	30
		Life Skill II	ENS 1224	Spoken English	3	2	30
	Part V	Extension	XXX xxxx (NSS /NCC, NSS, SLP)	2	1+1		
			Total	30+2	25	375	
III	Part I	TAM/FRS/HIS		3	2	30	
III	Part II	ENS 2201	Study Skills	3	2	30	
	Part III Major	Core	ENS 2561	Poetry II	5	5	75
			ENS 2463	Fiction II	4	4	60
			ENS 2565	Indian Literature in English	5	5	75
			ENS 2567	Shakespeare	5	5	75
	Supportive	ENS 2469/ FRS xxxx	English Phonetics & Phonology/ Introduction to French Language	5	4	60	
		Total		30	27	405	

Sem.	Part	Code	Title	Hr/ Wk	Cr.	Marks	
IV	Part I	TAM/FRS/HIS		3	2	30	
	Part II	ENS 2202	Career Skills	3	2	30	
	Part III Major	Core	ENS 2466	Prose II	4	4	60
			ENS 2562	American Literature	5	5	75
			ENS 2564	Translation-Theories and Problems	5	5	75
			ENS 2468	Advanced Grammar	5	5	75
		Supportive	ENS 2470	Theories of Translation / Introduction to French Literature	5	4	60
		FRS xxxx					
Part V	Extension	XXX xxxx	Extension Activity (NSS/NCC, NSS, SLP)	2	1		
Total				30+2	27+1	405	
V	Part III Major	Core	ENS 3671	New Literatures	6	6	90
			ENS 3673	Literary Theory and Criticism	6	6	90
			ENS 3675	Fiction III	6	6	90
		Innovative	ENS 3577	English for Media	5	5	75
	Part IV	Life Skill Course	ENS 3279	Creative English	3	2	30
	Part IV	VAL	VAL xxxx	Value Education	4	2	30
Total				30	27	405	
VI	Part III Major	Core	ENS 3672	Teaching English as a Second Language	6	6	90
			ENS 3674	Basics of Linguistics	6	6	90
			ENS 3676	Contemporary Literature	6	6	90
			Innovative	ENS 3578	English at Work Place	5	5
	Part IV	Life Skill Courses	ENS 3280	English for Competitive Exam	3	2	30
			ENS 3200	Environmental Studies	4	2	30
Total				30	27	405	
Grand Total for semesters I-VI				180+4	158+2	2370	

*Courses offered to Non-Major Students by the Department of English

PART III Supportive

SEM	COURSE NO	COURSE TITLE	Hrs.	Cr.	Marks	Students of
I	ENS 1467	Literary Forms and Vocabulary	5	4	60	ENS
II	ENS 1468	History of English Literature	5	4	60	ENS
III	ENS 2469	English Phonetics and Phonology	5	4	60	FRS
IV	ENS 2470	Theories of Translation	5	4	60	FRS
	Total		20	16	240	

PART IV Non-Major Electives

SEM	COURSE NO	COURSE TITLE	Hrs.	Cr.	Marks
I	ENS 1221	Film Appreciation	3	2	30
II	ENS 1222	Science Fiction	3	2	30
	Total		6	4	60

PART IV Life Skills Courses

SEM	COURSE NO	COURSE TITLE	Hrs.	Cr.	Marks
I	ENS 1223	Word Power	3	2	30
II	ENS 1224	Spoken English	3	2	30
V	ENS 3279	Creative English	3	2	30
VI	ENS 3280	English for Competitive Exam	3	2	30
			12	8	120

ENS 1201

Conversational Skills

3 Hrs/2 Cr.

The Course aims at helping students converse in English on the matters that matter to them in daily life. It provides the learners with ample opportunities and social contexts through conversations so that they can freely and fluently use informal English. It also exposes them to the apt vocabulary of such informal conversations.

Objectives

At the completion of this course the students shall be able to

- i. enhance their conversational fluency as well accuracy
- ii. fine-tune their pronunciation and accent
- iii. become familiar with and therefore effortlessly internalize the structures of English

Unit 1: Conversational skills

Unit 2: Day-to-day matters like eating, emotions, fashion, health, friendship, money, romance, housing, job, faith & hope, busy life, memory, shopping, time, Traffic, travelling, vacation, weather

Unit 3: Social expressions

Unit 4: English sounds

Unit 5: English accent and intonation

Text Book:

Sekar, John, J. 2014 **Conversational Skills**. Madurai. Department of English, the American College.

ENS 1461

Prose I

4 Hr./4 Cr.

The course aims to introduce students the masters of English prose between 1500 and 1990. It will help students analyze, understand and appreciate the writers' diverse approach in dealing with a wide range of themes and contexts. The course will expose students to different varieties of prose and its importance as a genre in literary studies.

Objectives

At the completion of this course the students shall learn to

- i. identify the evolution of modern systematic thoughts in the prescribed prose pieces
- ii. appreciate prose as a medium to express ideas
- iii. explain the moral purpose and social conditions in the prose works
- iv. analyze the old fashioned prose and the echoes of the prose Writers
- v. explicate the thematic Organization and correlation between the essays

Unit I (1500-1650)

1. Francis Bacon- Of Truth, Of Marriage and Single Life
2. Thomas Fuller- Of Anger
3. Abraham Cowley- Of myself
4. Jeremy Taylor- On Death

Unit II (1650-1750)

1. Joseph Addison - Sir Roger at Church
2. Sir Richard Steele - Recollections of Childhood.
3. Jonathan Swift - The Battle of the Books
4. Oliver Goldsmith- The Man in Black

Unit III (1750-1850)

1. Charles Lamb - The Praise of Chimney Sweepers
2. William Hazlitt - On the feeling of Immortality in youth
3. Leigh Hunt - Getting up on Cold Mornings
4. Thomas De Quincey- Confessions of an Opium Eater

Unit IV (1850-1900)

1. E.V.Lucas-Funeral
2. R.L.Stevenson- An Apology For Idlers
3. G.K.Chesterton-Worship Of The Wealthy
4. J.B.Priestly- On Doing Nothing

Unit V (1900-1990)

1. Robert Lynd - On not being a Philosopher
2. Siegfried Sassoon- A Village Cricket Match
3. William Cobbett- Advice to Young Men
4. Aldous Huxley- Selected Snoberies

Self Study:

1. Jeremy Taylor- On Death
2. Oliver Goldsmith- The Man in Black
3. Thomas De Quincey- Confessions of an Opium Eater
4. J.B.Priestly- On Doing Nothing
5. Aldous Huxley- Selected Snoberies

References

1. Whitridge,Arnold and John Wendell Dodds. **An Oxford Anthology of English Prose.** Newyork: Oxford University Press .1937
2. D'oyley Elizabeth. **Essays Past and Present.** London: Edward Arnold & Co.1936
3. Gross ,John.(ed).**The Oxford Book Of Essays,**Newyork.Oxford University Press.1991
4. Minto,William. **A Manual of English Prose Literature.** New Delhi: Atlantic Publishers and Distributors,1995
5. Williams **W.E. A Book Of English.** Essays,Penguin Books.1942
6. Brander.L . **Modern English Prose.** Oxford University Press.1943

ENS 1463

English In Use

4 Hr./4 Cr.

This course aims at enabling students to learn the basics of the English language though it presents three major varieties: Standard modern British English, Standard American English, and General Indian English. It deals with stylistic differences between formal and informal, written and spoken English.

Objectives:

At the completion of this course the students shall be able to

- i. Recognize the difference between formal and informal uses of English both at morphological and discursive levels
- ii. Become familiar with contemporary English usage
- iii. Clear all the doubts between 'correct' and 'incorrect' forms
- iv. Appreciate the socio-linguistic differences between British, American, and Indian varieties

Unit 1: Contemporary English idioms and phrases

Unit 2: Collocation & Colligation

Unit 3: Confusing words

Unit 4: One-word substitution

Unit 5: Sayings and Proverbs

Reference

- Swan, M. 2005. *Practical English Usage*. Oxford: OUP.
 1997. *Dictionary of English Usage*. New Delhi: Oxford & IBH.
 McCarthy, M & O'Dell, F. 2004. *English Phrasal Verbs in Use*. Delhi: CUP
 ---, 2001. *English Vocabulary in Use: Upper-intermediate Self-study and Classroom Use*. Delhi: CUP
 ---, 1996. *English Vocabulary in Use*. Delhi: CUP
 ---, 2003. *English Idioms in Use*. Delhi: CUP
 Wood, F.T. 2002. Flavell, R.H. & Flavell, L.M. Rev. *Current English Usage*. London: ELBS

ENS 1565

Short Story and One Act Play

5 Hr./5 Cr.

This course includes a collection of short stories from famous authors and few one act plays that have a wide range of themes and ideas which will create an interest in students and eventually help them to develop reading habit.

Objectives:

At the completion of this course the students shall learn to

- i. read, make connections, find meaning and understand the ideas, values and cultures of people past and present
- ii. explore imagination, human experiences and values reflected in texts
- iii. recognize and appreciate the multiplicity of voices that make up World Literature
- iv. experiment with various forms of writing such as a character study and demonstrate the ability to trace a coherent thought pattern to a suitable conclusion
- v. communicate thoughts and ideas using discussions and interpret, evaluate critically the information obtained

Unit 1:

- | | |
|-----------------------------------|-----------------------|
| 1. Kabuliwala | -Rabindranath Tagore |
| 2. The Tiger's Paw | - W.W. Jacobs |
| 3. Von Kempelen and His Discovery | - Edgar Allen Poe |
| 4. The Wedding - Knell | - Nathaniel Hawthorne |
| 5. Clay - James Joyce | |

Unit 2:

- | | |
|----------------------|-------------------|
| 1. The Hammer of God | - G.K. Chesterton |
| 2. The Idiots | - Joseph Conrad |
| 3. The Ladybird | - D.H. Lawrence |
| 4. Something Special | - Iris Murdoch |
| 5. Tobermory | - Saki |

Unit 3:

- | | |
|--------------------------------|---------------------|
| 1. Karma | - Kushwant Singh |
| 2. An Affair of State | - Guy De Maupassant |
| 3. The Legend of Sleepy Hollow | - Washington Irving |
| 4. Disiree's Baby | - Kate Chopin |
| 5. The Cactus | - O. Henry |

Unit 4:

- | | |
|----------------------------|-------------------|
| 1. The Baron of Grogzwig | - Charles Dickens |
| 2. The Last Leaf | - O. Henry |
| 3. Shooting an Elephant | - George Orwell |
| 4. A Haunted House | - Virginia Woolf |
| 5. The Imp of The Perverse | - Edgar Allen Poe |

Unit 5:**One act plays**

- | | |
|-------------------------------|-------------------------|
| 1. Salome | - Oscar Wilde |
| 2. Marriage Proposal | - Anton Chekhov |
| 3. The Bear | - Anton Chekhov |
| 4. Bishop's Candlestick | - Norman Moses Mckinnel |
| 5. The Night Before Christmas | - Paula Williams |

Self study:

- The Idiots - Joseph Conrad
- The Cactus - O. Henry
- A Haunted House - Virginia Woolf
- The Bear - Anton Chekhov

Reference

1. Donohue, Joseph, "Salome and the wildean Art of Symbolist Theatre". Modern Drama, Vol.37, No.1, Spring 1994. PP, 84-103.
2. Krishnayya, D.Radha "Wilde's Salome: Deviations from the Biblical Episode." Common Wealth Quarterly, vol.2, No.8, sep 1978. PP. 71-76

ENS 1467

Literary Forms and Vocabulary

5Hr./4Cr.

The purpose of this course is to introduce students to the major genres of literature, and familiarize them with the various elements/aspects of poetry, prose, novel, and drama. Further to make the students conversant with commonly used classroom terms .

Objectives

At the Completion of this course the students shall learn to

- i. Perceive four major genres of Literature
- ii. Understand the aspects/elements of Literary forms
- iii. Identify the sub - genres of literary forms
- iv. Acquaint with Literary terms
- v. Conversant with classroom vocabulary

Unit 1: Poetry – types and aspects of poetry

Unit 2: Drama – classification of drama, structure of drama, and aspects of drama

Unit 3: Fiction – types and aspects of novel and short story

Unit 4: Prose – descriptive, narrative, expository and argumentative prose; essays, biography, autobiography, critical prose, discursive writings

Unit 5: Vocabulary - Common academic terms used by teachers related to literature and classroom activities

References

1. Brooks, Cleanth and Robert Penn Warren. **Understanding Poetry**. New York: Holt, Rinehart and Winston, 1976.
2. Perrinne, Laurence. **Sound and Sense**. New York: Harcourt Brace Jovanovich Publishers, 1987.
3. Boulton, Marjorie. **The Anatomy of Drama**. New Delhi: Kalyani Publishers, 1979. (pg.143-163)
4. Watson G.J. **An Introduction to Drama**. Hong Kong: Macmillan, 1983.
5. Boulton, Marjorie. **The Anatomy of Novel**. London: Whistable Litho Ltd, 1984.
6. Forster, E.M. **The Aspects of Novel**. London: Edward Arnold, 1927.
7. Abrams, M.H. **A Glossary of Literary Terms**. Bangalore: Prism Books, 2000.

A course material on classroom vocabulary will be prepared by the department faculty

ENS 1221

Film Appreciation

3Hr./2Cr.

This is an introductory course that aims at exposing learners to cinema as an art form with socio-cultural and political underpinnings. It deals with Western as well as Indian film against the larger context of world cinema as follows. The course also intends to trace vitality of the films adapted from a literary text

Objectives

At the completion of this course the students shall learn to

- i. Understand the Aspects of film making
- ii. Familiarize the various genres of films
- iii. Discern a good and a bad movie
- iv. Review a film
- v. Relate a literary text and its film adaptation

Unit 1: Aspects and Genres: Premise, Plot, Characterization, Screenplay, Direction, Acting, Sound and Image – Action, Adventure, Comedy, Crime, drama, Epic, Horror, Musical, Romance and Sci-fi-war.

Unit 2: Reading a visual and Visualizing Script: Montage and Mise-en-scene.

Unit 3: Film History: Origin of Cinema, Early American Productions, German Expressionism, Art and Dialectic in Soviet Film, Rise of Hollywood, Italian Neo-realism, French New Wave, and Asian Film.

Unit 4: Film & Literature : Literary film adaptations Merits and demerits

Unit 5: Film Appreciation: Screening and Critical Analysis.

Independent work

Periodical Movie reviews

References:

1. Ellis, Jack C. **A History of Film**. Boston: Allyn & Bacon, 1995.
2. Bamow, Erik and Krihnaswamy, S. **Indian Film: A Reviewing**. New Delhi: OUP, 1980
3. Beja, Morris. **Film and Literature: An Introduction**. London: Longman, 1997.
4. Murry, Edward. **Ten Film Classics: A Reviewing**. New York: Frederick Unger Publisher, 1978.
5. Robinson, David. **World Cinema: A Short History**. London: Eyre Methuen, 1981.

ENS 1223

Word Power

3 Hr./2 Cr.

This course aims in developing the students' word power for effective communication. Students shall become familiar with the different techniques of increasing their word power. The course intends students to prepare themselves with rich vocabulary resources to face known and unknown communicative situations both in the college and in life outside it.

Objectives:

At the completion of this course the students shall be able to

- i. To gain understanding of the historical development of English and related languages
- ii. Make use of modern technologies in developing their word power
- iii. Exploit words related to particular situations
- iv. Spice up their English by using appropriate words for longer sentences
- v. Gain confidence over English, learn many ways to constantly stay on those words and to pronounce words exactly

Unit 1: Ways to improve one's vocabulary

Unit 2: Grammar for vocabulary building

Unit 3: Lexical relationships

Unit 4: Reading for Meaning

Unit 5: Etymology for vocabulary

Independent Work:

- i) Writing own short stories
- ii) Preparing word list with same suffixes and prefixes
- iii) Preparing list of the forms of adjectives

Reference

- 1) Norman, L. 2015 **Word Power Made Easy**: New Delhi: Bloomsbury.
- 2) Nurnberg, Maxwell and Morris Rosenblum. 2000 **All About Words : An Adult Approach to Vocabulary Building**: Delhi: W.R. Goyal Publishers & Distributors.
- 3) Norman Lewis. 1993 **Instant Word Power**: Delhi: Goylsaab Publishers & Distributors

ENS 1202

Reading and Writing Skills**3 Hrs./3 Cr.**

The Course aims at improving the learners' productive skills of English. It offers professional guidance on meaningful and aggressive reading experiences by familiarizing them with techniques and micro-skills of reading, comprehension abilities through literary and non-literary reading materials. It also strengthens their writing skills through the forms of writing that are useful to them academically and vocationally.

Objectives:

At the completion of this course the students shall be able to

- i. Get training in aggressive speed reading with different sub-skills
- ii. Improve their comprehension abilities
- iii. Learn the art and craft of paragraph and a five-paragraph essay writing

Unit 1: Reading and comprehension skills

Unit 2: Reading at various speeds, skimming & scanning, inferring & interpreting, predicting, reorganizing material, comprehension skills

Unit 3: Writing leave letters and apology letters

Unit 4: Paragraph writing, five-paragraph essay writing,

Unit 5: Types of essay and paragraph writing: descriptive, argumentation, narrative, and expository

Text Book:

Sekar, John, J. 2014. **Reading and Writing Skills**. Madurai. Department of English, the American College.

This course proposes to introduce students to the growth of English poetry from the sixteenth to the mid-eighteenth century. The selected poems will help discuss the salient features of Elizabethan, Metaphysical, Restoration, and Neoclassical poetry. The course will also encourage students to analyze poetic expressions in the context of social and literary movements.

Objectives:

At the completion of this course the Students shall learn to

- i. Understand and analyse the poetry of Elizabethan Age
- ii. Read and critically appreciate the Sonnets of Shakespeare
- iii. Perceive the significance of metaphysical poets and poetry
- iv. Comprehend the salient features of Epic Poetry and Satirical Poem
- v. Recognise the characteristics of a mock epic and poetry during the Neo classical age

Unit 1: Elizabethan Poetry

Edmund Spenser - Prothalamion
Michael Drayton - Battle of Agincourt

Unit 2: Shakesperean Poetry

William Shakespeare - 'Let me not to the marriage .' (no -116)
- 'My mistress eyes are nothing like the sun...' (No. 130)
- 'Some glory in their birth, some in their skill' (No. 91)

Unit 3: Metaphysical Poetry

A valediction forbidding mourning- John Donne
Easter song- George Herbert
Christ Nativity - Henry Vaughan
To his Coy Mistress- Andrew Marvell

Unit 4: Restoration Poetry:

Epic - Paradise Lost - Book 1 - John Milton
Satirical Poem - Mac Flecknoe - John Dryden

Unit 5: Neoclassical Poetry

Mock Epic - Rape of the Lock - Canto 5 - Alexander Pope

Self Reading

To His Coy Mistress - Andrew Marvell
'Let Me not to the Marriage' - Sonnet no - 116 - William Shakespeare

Reference:

1. Brooks, Cleanth and Robert Penn Warren. *Understanding Poetry*. New York: Holt, Rhinehart and Winston, 1976.
2. Perrine, Lawrence. *Sound and Sense: An Introduction to Poetry*. Harcourt: HBJ, 1987.
3. Phythiyan, B.A. (ed.). *Considering Poetry: An Approach to Criticism*. London: Hodder and Stoughton, 1985.
4. Green, David, *Winged word*. New Delhi: Macmillan India, 2008

ENS 1464

Fiction I

4 Hr./4 Cr.

This course includes the novels from the 18th century. There are also two novellas through which students can understand what a novella is and how it is different from novels.

Objectives:

At the completion of this course the students shall learn to

- i. Make comparisons within and across books and identifying and discussing themes and conventions in and across a wide range of writing
- ii. Develop their comprehension skills by checking that the book makes sense to them, discussing their understanding and exploring the meaning of words in context . Asking questions to improve their understanding
- iii. Make them learn how to summarize the main ideas drawn from more than one paragraph, identifying key details to support the main ideas
- iv. Discuss and evaluate how authors use language, including figurative language, considering the impact on the reader and identifying how language, structure and presentation contribute to meaning
- v. Participate in discussions about books, building on their own and others' ideas and challenging views courteously

Novels

Unit 1: Robinson Crusoe - Daniel Defoe.

Unit 2: Emma - Jane Austen.

Unit 3: Bleak house - Charles Dickens

Unit 4: What Maisie Knew - Henry James

Unit 5: Novellas

- i) The Lifter Veil - George Eliot
- ii) The Awakening - Kate Chopin

SELF STUDY**Unit 5****Reference:**

1. Malcolm, Bradbury. **Novel Today**. London: Fontana Press, 1990.
2. Stevenson, Randall. **The British Novel Since the Thirties: An Introduction**. Athens: The University of Georgia Press, 1986.

ENS 1466

Drama

4 Hr./4Cr.

The course intends to familiarize the students with the works of playwrights over the period and aims to introduce students to the aspects of Drama like theme, plot, characterization, and rhetoric of the theatre.

Objectives

At the completion of this course the students shall learn to

- i. Describe the history and theories of drama
- ii. Explain the characteristic features of Elizabethan, Heroic, Social Satire, Drama and absurd plays
- iii. Analyze the plot structure of different works
- iv. Justify the characters introduced by the playwrights
- v. Develop a critical perspective towards drama

Unit I: Elizabethan Drama

Christopher Marlowe-Dr. Faustus

Unit II: Heroic Drama

John Dryden-All for Love

Unit III: Social Satire

Richard Brinsley Sheridan-The School For scandal

Unit IV: Verse Drama

T.S. Eliot-Murder in The Cathedral

Unit V: Absurd Drama

Samuel Beckett-Waiting For Godot

Self Study:

1. John Dryden-All for Love

References

1. Esslin, Martin. *The field of Drama*. London: Methuen, 1987
2. O'Neill, Judith (ed.). *Critics on Marlowe*. London: George Allen and Unwin Ltd., 1969.
3. Styan, J.L. *Modern Drama in Theory and Practice 1*. Cambridge: CUP, 1981.
4. Styan, J.L. *Modern Drama in Theory and Practice 2*. Cambridge: CUP, 1981.
5. Watson, G.J. *Drama: An Introduction*. London: Macmillan, 1983.
6. Burnett, Mark Thornton. "Doctor Faustus and the form and function of the Chorus: Marlowe's Beginnings and Endings". *CIEFL Bulletin*, vol. 1, No. 1, Jun 1989. PP .33-45
7. Ramachandra, Ragini. "Shantha as the Pradhanarasa" in "Murder in the Cathedral". *The literary criterion*, Vol 24, No 3 & 4, 1989. PP 81-85
8. Rayan, Krishna. "Fear in the way-A Reading Of Murder in the Cathedral", *The Literary Criterion*, Vol. 24, No 3 & 4, 1989. PP. 86-95
9. Samuelson, Scott. "The Word as Sword: Power and Paradox in Murder in the Cathedral". *Literature and Belief*, Vol. 7, 1987. PP. 73-81
10. Howard, Patricia Rev. *Of Approaches to Teaching Beckett's "Waiting For Godot"* ed. by June schleuter and Enoch Brater. *Modern Drama*, Vol. 37, No 4, Win 1994. PP 681-682
11. Bhaskar, Premila. "Waiting For Godot-A Break in Dramatic convention". *Indian Scholar*, Vol 15, No 2, July 1993. PP 53-57
12. Steane J.B. *Marlowe: A Critical Study*. Cambridge At the University Press, 1965

13. Kumar, Jitendra. *Christopher Marlowe Doctor Faustus : A Criticism*. Sterling Publishers Private Limited, 1992
14. Krish, Arthur. *Dryden's Heroic Drama*. Gordian Press, New York, 1972
15. King, Bruce. *Twentieth Century Interpretations of All for Love*. Prentice - hall, Inc. Englewood.

ENS 1468**History of English Literature****5 Hr./4 Cr.**

This course will provide a comprehensive survey of the history and tradition of various English literature written over different ages . It will also introduce students to the social, political, and cultural contexts that have produced and conditioned these literatures.

Objectives

At the completion of this course the students shall learn to

- i. Trace the origins of English Literature
- ii. Explore the contributions of major writers
- iii. Understand the Socio- political background of literature
- iv. Track down the social history of England
- v. Evolve a time line of events in English Literature

Unit 1: Old English Literature to Middle English Literature

Unit 2: Elizabethan Literature to Neo-Classical Literature

Unit 3: Romantic Literature to Victorian Literature

Unit 4: Twentieth Century Literature

Unit 5: Social History of England

References:

1. Albert, Edward. *History of English Literature*. OUP, 1996.
2. Trevelyan, G.M. *English Social History*. London: Penguin, 1986.

ENS 1222**Science Fiction****3 Hr./2 Cr.**

The purpose of the course is to provide an understanding of science fiction by tracing the origin of the genre and many of the great works that incidentally paved way for vital scientific inventions

Objectives:

At the completion of the course students shall learn to understand

- i. understand and enjoy the science Fictions
- ii. familiarise with the different Types of Science fictions - Hard and Soft Science Fiction
- iii. perceive the relationship between science and literature
- iv. trace the significance of science fictions in scientific inventions
- v. relate and appreciate Science fiction films adapted from literature

Unit 1: Introduction - Science Fiction - Classification

Unit 2: Early Science Fiction - Time Machine - H.G. wells

Unit 3: Hard Science fiction - The caves of steel - Isaac Asimov

Unit 4: Soft Science Fiction – Nineteen – Eighty Four - George Orwell

Unit 5: Sci- Fi Film adaptation - Jurassic Park - Michael Chrichton

Self Reading

Jurassic Park - Michael Chrichton

Reference:

Marshall B. Tymn. **The Science Fiction Reference Book: A Comprehensive Handbook and Guide to the History, Literature, Scholarship, and Related Activities of the Science Fiction and Fantasy Fields:** Borgo , 1996

ENS 1224

Spoken English

3 Hr./2 Cr.

The purpose of the course is to create a campus where English speaking capability can be harnessed by each and every student to increase their potentials to succeed in their professional and personal life.

Objectives:

At the completion of this course the students shall learn to

- i. listen and comprehend well,
- ii. converse in their life situations,
- iii. use English for practical purpose,
- iv. speak fluently in any circumstances, and
- v. Improve students' communicative competence.

Unit 1: English Everywhere

Non- Conventional Pedagogical tools - Mobile, Television, Computer, News, Theatre, Famous Speeches, Friends etc.,

Unit 2: Speech Acts

Greetings, introducing oneself, invitation, making request, expressing gratitude, complimenting and congratulating, expressing sympathy, apologizing, asking for information, seeking permission, complaining and expressing regret, Idioms and Phrases

Unit 3: Using English at real life situations

At the College office, Library, Department, Bank, Railway station, Post office, Police station, Travel agency, Interview

Unit 4: Fluency Development

Vocabulary enhancement, Conversation skills, Role play, Commentary etc.,

Unit 5: Speaking skills

Presentation skills, Public Speaking skills, GD skills, Interview skills,
Independent practice: Listening to News-NDTV, BBC, CNN and paying attention to idiomatic usage of the language and different accent for speech acts that are used,
Watch and appreciate English movies.

Independent Practice: Watching English movies

Listening to various News channels

Listening to Podcasts on all the 4 language skills (LSRW)

Reference:

1. Collins, Stevens. **Practical Everyday English: A Self-study Method of Spoken English for Upper Intermediate and Advanced Students** , Montserrat Publishing; 5th Revised edition 2008
2. Mohan, Krishna and N.P. Singh. **Speaking English Effectively**. Delhi: Macmillan, 1995.
3. Sekar, John, J. 2014. **Conversational Skills**, Department of English, The American College.

Proposed Evaluation Pattern for End-of-Semester Examination

1. Poetry & Drama

- i. Annotation with three specific questions: $4/7 \times 5 (1+2+2) = 20$
- ii. Paragraph $6/9 \times 5 = 30$
- iii. Essay $5/7 \times 5 = 50$

2. Prose & Fiction

- i. Short Answer Questions $10 \times 2 = 20$ or Multiple Choice
- ii. Paragraph $6/9 \times 5 = 30$
- iii. Essay $5/7 \times 5 = 50$

3. Literary Forms and Vocabulary

- I. Multiple Choice Questions - $20 \times 1 = 20$
- II. Short Answer Questions - $10 \times 2 = 20$
- III. Short Notes - 5 out of $8 \times 6 = 30$
- IV. Essays - 2 out of $4 \times 15 = 30$

100

4. History of English Literature

- I. Multiple Choice Questions - $20 \times 1 = 20$
- II. Short Answer Questions - $10 \times 2 = 20$
- III. Paragraphs - 5 out of $8 \times 6 = 30$
- IV. Essays - 2 out of $4 \times 15 = 30$

100

5. English in Use

- Synonyms - $5 \times 1 = 5$
- Antonyms - $5 \times 1 = 5$
- Multiple Choice Questions - $10 \times 1 = 10$
- Fill in the Blanks - $5 \times 1 = 5$
- Spotting Errors - $5 \times 2 = 10$

One word substitutions	-	5 x 1 = 5
Re- write as directed	-	10 x 2 = 20
Match the Following	-	10 x 1 = 10
Make sentences using Idioms/phrases	-	10 x 2 = 20
Identify the Sentence Variety	-	5 x 1 = 5
American / British Usage	-	5 x 1 = 5
		100

6. Spoken English

Viva Voce - both internal and external

7. Science Fiction

Short Answer Question	-	10 x 2 = 20
Paragraph	-	4 out of 6 x 5 = 20
Essays	-	2 out of 3 x 10 = 20

8. Film Appreciation

Short Answer Question	-	10 x 2 = 20
Paragraph	-	4 out of 6 x 5 = 20
Essays	-	2 out of 3 x 10 = 20

Part II

100 % Oral



DEPARTMENT OF MATHEMATICS

Program for B.Sc. Degree in Mathematics (SF) - CBCS -2015-16

Sem	Part	Course Code	Course Title	Hr/ wk	Cr.	Marks
1	I	XXX xxxx	TAM/FRE/HIN	3	2	30
1	II	ENS 1201	Conversational Skills	3	2	30
1	III M	MAS 1511	Classical Algebra	5	5	75
1	III M	MAS 1411	Analytical Geometry -3D	4	4	60
1	III M	MAS 1413	Differential Calculus	4	4	60
1	III S	PHS xxxx	Physics for Mathematics - I	5	4	60
1	IV LS	XXX xxxx	Life Skill - I	3	2	30
1	IV NME	XXX xxxx	Non-major Elective - I	3	2	30
Total				30	25	375
2	I	XXX xxxx	TAM/FRE/HIN	3	2	30
2	II	ENS 1202	Reading & Writing Skills	3	2	30
2	III M	MAS 1512	Algebra- I	5	5	75
2	III M	MAS1412	Analysis -I	4	4	60
2	III M	MAS 1414	Integral Calculus	4	4	60
2	III S	PHS xxxx	Physics for Mathematics - II	5	4	60
2	IV LS	XXX xxxx	Life Skill - II	3	2	30
2	IV NME	XXX xxxx	Non-major Elective - II	3	2	30
2	V	XXX xxxx	Ext. Activity NSS/PED/SLP		1	15
Total				30	26	390
3	I	XXX xxxx	TAM/FRE/HIN	3	2	30
3	II	ENS 2201	Study Skills	3	2	30
3	III M	MAS 2511	Algebra -II	5	5	75
3	III M	MAS 2513	Analysis -II	5	5	75
3	III M	MAS 2515	Differential Equations	5	5	75
3	III M	MAS 2411	Statistics- I	4	4	60
3	III S	COS xxxx	Programming in C	5	4	60
Total				30	27	405
4	I	XXX xxxx	TAM/FRE/HIN	3	2	30
4	II	ENS 2202	Career Skills	3	2	30
4	III M	MAS 2512	Algebra- III	5	5	75
4	III M	MAS 2514	Analysis- III	5	5	75
4	III M	MAS 2516	Vector Calculus & Trigonometry	5	5	75
4	III M	MAS 2412	Statistics- II	4	4	60
4	III S	COS xxxx	Programming in C++	5	4	60
4	V	XXX xxxx	Ext. Activity NSS/PED/SLP		1	15
Total				30	28	420

Sem	Part	Course Code	Course Title	Hr/wk	Cr.	Marks
5	III M	MAS 3611	Mechanics	6	6	90
5	III M	MAS 3613	Graph Theory	6	6	90
5	III M	MAS 3615	Operations Research- I	6	6	90
5	III M	MAS3511	Combinatorics	5	5	75
5	IV LS	XXX xxxx	Life Skill- III	3	2	30
5	IV	MAS 3200	Environmental Studies	4	2	30
Total				30	27	405
6	III M	MAS 3612	Number Theory	6	6	90
6	III M	MAS 3614	Complex Analysis	6	6	90
6	III M	MAS 3616	Fuzzy Mathematics	6	6	90
6	III M	MAS 3512	Operations Research- II	5	5	75
6	IV LS	XXX xxxx	Life Skill - IV	3	2	30
6	IV	VAL xxxx	Value Education	4	2	30
Total				30	27	405

Courses offered to Non-major students by the Department of Mathematics (UG)

Supportive

Sem	Part	Course Code	Course Title	Hr/wk	Cr.	Marks
1	III	MAS 1431	Maths for Physics- I	5	4	60
1	III	MAS 1433	Discrete Mathematics (BCA)	5	4	60
2	III	MAS 1432	Maths for Physics- II	5	4	60
2	III	MAS 1434	Discrete Mathematics (COS)	5	4	60
2	III	MAS 1436	Statistics (BIT)	5	4	60
3	III	MAS 2431	Graph Theory and O.R. (BIT)	5	4	60
4	III	MAS 2432	Graph Theory and O.R. (COS)	5	4	60
4	III	MAS 2434	Business Statistics (CME)	5	4	60
4	III	MAS 2436	Operations Research (BCA)	5	4	60

Non-Major Elective

Sem	Part	Course Code	Course Title	Hr/wk	Cr.	Marks
1	IV	MAS1221	Arithmetic & Mathematical Logic	3	2	30
2	IV	MAS 1222	Recreational Mathematics	3	2	30

Life Skill Courses

Sem	Part	Course Code	Course Title	Hr/wk	Cr.	Marks
1	IV	MAS 1231	Mathematics for Life	3	2	30
2	IV	MAS 1232	Mathematical Reasoning	3	2	30
5	IV	MAS 3231	Mathematics for Competitive Exam.	3	2	30
6	IV	MAS 3232	Developing Quantitative Aptitude	3	2	30

MAS1511

CLASSICAL ALGEBRA

5HRS

Objective: This is a foundational course for any student aspiring to complete B.Sc., degree in Mathematics. The students are introduced to the different methods of solving polynomials with real coefficients. The second section is devoted to the relation between arithmetic mean, geometric mean and harmonic mean and their subsequent applications. The third section deals with the elementary properties of matrices and their uses in solving simultaneous linear equations. The binomial, exponential and logarithmic series are introduced and is used to find out the approximate values of certain rational indices.

Unit 1: Theory of Equations: – Relation between roots and coefficients – Symmetric functions of roots – Formation of equation – Transformation of equation.

Unit 2: Reciprocal equation – Descartes' rule of signs – Diminishing and Increasing the roots – Newton's method of divisors – Horner's method.

Unit 3: Inequalities: – A.M., G.M., H.M. and applications – Cauchy Schwartz inequality – Weierstrass inequality – Applications to maxima and minima.

Unit 4: Binomial, Exponential and Logarithmic series – Approximations.

Unit 5: Types of Matrices – Elementary transformations – Inverse of a matrix and Rank of matrix using elementary transformations – Solution of simultaneous linear equations – Eigen values and Eigen vectors – Cayley Hamilton theorem – Diagonalization.

References:

1. T.K. Manickavachagam Pillay, T. Natarajan and K.S. Ganapathy, Algebra Vol I and II, S.Viswanathan Pvt. Ltd., 2013.
2. S. Arumugam, A. Thangapandian Isaac, Theory of Equations, New Gamma Publishing House, 1996.
3. M.L. Khanna, Matrices, S.Chand and Co., 1998.

MAS1411

ANALYTICAL GEOMETRY-3D

4HRS

Objective: This is a foundational course for any student aspiring to complete B.Sc., degree in Mathematics. Analytical geometry is a conventional mathematics course which deals with geometrical objects in their analytical form. The first two units are entirely devoted for understanding objects such as planes and lines in three dimensions. The coplanarity of two straight lines or they being skew lines is dealt. The analytical form of a sphere, cone and cylinder are introduced.

Unit 1: Analytical Geometry 3D-rectangular Cartesian co-ordinates - D.r, and D.c's- Angle between the planes- Equation of a plane through the line of intersection of two given planes- Length of the perpendicular- Equation of the planes bisecting the angle between the planes.

Unit 2: Straight lines-Symmetrical form of equation of the lines- Equation of straight line passing through two given points.

Unit 3: Plane and the straight line- Coplanarity of straight lines- Shortest distance between two given lines-Intersection of three planes- Volume of a tetrahedron.

Unit 4: Standard equation of sphere-Results based on the properties of a sphere-Tangent plane to a sphere- Equation of a circle- Introduction to cone and cylinder.

References:

1. T.K. Manicavachagom pillay and T.Natarajan , Analytical Geometry Part II 3D, S.Viswanathan Pvt., Ltd.,2006
2. P. Durai Pandian, Analytical Geometry , Asia Publishing House, 1968
3. S.Arumugam and A.Thangapandian Isaac, Analytical Geometry, New Gamma Publishing house, 1996.
4. M.L. Khanna, , Solid Geometry, Jai prakashnath & Co Publishers ,Meerut, 1999.

MASI413

DIFFERENTIAL CALCULUS

4HRS

Objective: This is a foundational course for any student aspiring to complete B.Sc., degree in Mathematics. The calculus is the science of determining the effect of very small change. Different methods of calculating the derivative of a function and the interpretation of derivative at different circumstances are dealt in detail. The functions involving more than one variable and the rate of change with respect to one variable are attributed as partial derivative. The application of partial derivatives as a tool for engineers, scientists and social scientists are illustrated.

Unit 1: Differentiation – Standard form – Function of function rule – Hyperbolic function – Inverse function – Substitution - Logarithmic function – Transformation – Implicit function – one function with respect to other function.

Unit 2: Successive differentiation, n^{th} derivations – Leibnitz formula for n^{th} derivative of a product.

Unit 3: Interpretation of derivatives - Tangent and Normals – Maxima and Minima of single variable -Envelope – Curvature – Center of curvature – Radius of curvature – Evolute and Involute.

Unit 4: Partial differentiation – Errors and approximation – Maxima and Minima for functions of two or more variables.

References:

1. S.Narayanan and T.K.Manickavachagom Pillay, Calculus Vol I and II, Viswanathan Pvt Ltd, 2013.
2. S.Arumugam and A.Thangapandian Isaac, Calculus Vol I and II, New Gamma Publishing House, 2013.

MAS1512

ALGEBRA - I

5HRS

Objective: This is a basic course for any student aspiring to complete B.Sc., degree in Mathematics. The essence of mathematical logics and its ramifications in the study of mathematics is introduced. Basic properties of sets which are needed for the study of algebra are introduced. The students are exposed to the basic algebraic structure called group. Subsequently the properties of groups and imbedding a group in a bigger group called the group of symmetries are dealt with. The algebraic equivalence of any two groups are studied by means of isomorphism.

Unit 1: Statement- Negation – Disjunction – Statement formulas and truth tables – Conditional and Bi-conditional – Tautologies – Equivalence of formulas – Normal forms – Theory of inference and predicate calculus.

Unit 2: Introduction to set theory – Cartesian products – Relations – Properties of binary relations – Partition and covering of a set – Equivalence relations – Compatibility relation – Partial ordering – Functions – Peano axioms and mathematical induction.

Unit 3: Equivalent definitions of a group – Permutation groups – Cyclic group – Cosets – Lagrange's theorem.

Unit 4: Normal subgroup – Quotient group – Cayley's theorem.

Unit 5: Homomorphism – Isomorphism – Automorphism – Inner Automorphism – Fundamental theorems of homomorphism.

References:

1. Tremblay J.P, Manohar R, Discrete Mathematical Structure with applications to Computer science, Tata McGraw – Hill, 1997.
2. S.Arumugam and A.Thangapandian Isaac, Modern Algebra, SCITECH publications, 2006.
3. Vijay K. Khanna and S.K. Bhambri, A course in Abstract Algebra, Vikas Publishing House Pvt. LTd.,1998
4. Joseph A. Gallian, Contemporary Abstract Algebra, 8th Edition, Brooks/Cole Cengage Learning, 2013.
5. Rao, Abstract Algebra, Vijay Nicole, 2012.

MAS1412

ANALYSIS - I

4HRS

Objective: This is a basic course for any student aspiring to complete B.Sc., degree in Mathematics. The set of all real numbers is looked at as a linear continuum. Sequence of real numbers which has a property of becoming clustered after a finite stage is looked at as converging sequence. The algebra of such converging sequences is studied in detail. The sequences which do not have this property are categorized as either divergent sequence or oscillating sequence. The inter relation between these sequences are studied at length. Summation of infinite number of real numbers as a limit of a sequence of partial sums is introduced as converging series. The different criteria for checking whether a series is convergent are introduced.

Unit 1: The algebraic and order properties of \mathbb{R} - Supremum and Infimum- Completeness property of \mathbb{R} - Archimedean property-Characterization of intervals-Countable sets- Uncountable sets.

Unit 2: Sequences- Limit of a sequence- Convergent sequences- Divergent sequences- Bounded sequences- Monotone sequences- Operations on convergent sequences-Operations on divergent sequences.

Unit 3: Cauchy sequences-Bolzano –Weierstrass theorem-Limit superior- Limit inferior.

Unit 4: Definition of infinite series-Sequence of partial sums- Convergence and Divergence-series with negative terms- Alternating series- Leibniz test-Conditional convergence and Absolute convergence- Test of convergence-Comparison test- Ratio test- Root test- Series whose terms form a non-increasing sequence.

References:

1. Richard R.Goldberg, Methods of Real Analysis, oxford &IBH publishing co.Pvt.Ltd., New Delhi 2010.
2. R.G.Bartle and D.R.Sherbert, Introduction to Real Analysis, John Wiley and Sons(Asia)Pvt. Ltd., Singapore, 2002.
3. K.A.Ross, Elementary Analysis: The Theory of Calculus, Undergraduate Texts in Mathematics, Springer(SIE), Indian reprint, 2004.
4. J.M. Howie ,Real Analysis, Springer 2007.
5. Ghorpade and Limaye , A Course in Calculus and Real Analysis, Springer,2006.
6. J.V. Deshpande, Mathematical Analysis and Applications, Alpha Science International,2004.

MAS1414

INTEGRAL CALCULUS

4HRS

Objective: This is a foundational course for any student aspiring to complete B.Sc., degree in Mathematics. The concept of integration as a limit of summation is introduced. The different methods of integration are dealt with. The applications of integration in physical sciences, biological sciences and social sciences are discussed. The Beta and Gamma functions in terms of integration are introduced and their properties are studied in detail.

Unit 1: Integration – Standard Methods – Bernoulli's formula-Definite integral.

Unit 2: Reduction formula – Integration as summation – Area – Volume – Length of the curve.

Unit 3: Evaluation of double and triple integrals – Changing the order of integration – Change of variables– Application in double and triple integrals.

Unit 4: Beta and Gamma functions – Recurrence formula for Gamma functions – Properties of Beta functions – Relation between Beta and Gamma functions.

References:

1. S.Narayanan and T.K.Manickavachagom Pillay, Calculus Vol I and II, Viswanathan Pvt Ltd, 2002.
2. S.Arumugam and A.Thangapandian Isaac, Calculus Vol I and II, New Gamma Publishing House, 2001.

SUPPORTIVE**MAS1436****STATISTICS****5HRS**

Objective: This is a supportive course for the students doing Bachelors degree in information and technology. This course enable the students to solve the statistics related real world problem using basic mathematical statistics.

This course deals with measures of central tendency, correlation, regression, probability theory, and sampling theory.

Unit 1: Measures of central tendency – measures of dispersion.

Unit 2: Correlation – correlation coefficients – rank correlation – regression – regression coefficients.

Unit 3: Probability function – addition and multiplication theorem's on probability – conditional probability – Baye's formula and theorem.

Unit 4: Type of sampling- parameters & statistic – statistical hypothesis – null and alternative hypothesis – types of errors- large samples based on normal area table – test of significance of small samples – t-test and, F-test and Chi-square test for population variance and goodness of fit.

Unit 5: Analysis of variance – one way and two way classification – Latin square design.

Reference Books:

1. S.C gupta & V.K. Kapoor, Elements of Mathematical statistics, S. chand co(1995)
2. S.Arumugam & A.Thangapandian Issace, Statistics, New Gamma publishing House, 2004.

NON-MAJOR**MAS1221****ARITHMETIC AND MATHEMATICAL LOGIC****3HRS**

Objective: The course is intended for the students who are not majoring in mathematics as a non-major elective. It develops logical skills and arithmetic ability. The basic algebraic concepts including the principle of mathematical induction are introduced. The basic structure in mathematics called set is introduced by means of real life examples. The idea of truth table and its consequence in resolving situations in which the truth value is either true or false is studied at length.

Unit 1: Odd man out series –Percentage - Profit and Loss -Discount – Data interpretation- Mean – Median – Mode.

Unit 2: Set – Operations on set – Algebra of Sets – Relation – Finite and infinite set – Principle of mathematical induction.

Unit 3: Truth tables – Disjunction – Conjunction – Implication – Laws of Logic – Tautology – Contradiction – Conjunctive and Disjunctive normal forms.

References:

1. R.S Aggarwal, Quantitative Aptitude, S.chand & CompanyLtd, 2014.
2. R.S. Stoll, Set Theory & Logic, Eureka Publishing House, 1997.
3. J.P Trembly & R. Manohar, Discrete Mathematical Structures with application to computer science, Tata McGraw Hill, 2011.
4. M.K Venkataraman, Discrete Mathematics, The National Publishing Company,2000.
5. Seymour Lipschutz, Schaum's Theory and problems of set theory, McGraw-Hill,1964.

MAS1222

RECREATIONAL MATHEMATICS

3HRS

Objective: The course is intended for the students who are not majoring in mathematics as a non-major elective. Mathematics is called the Queen of sciences. It is sometimes perceived as incomprehensible. Mathematics can be fun is the theme of this course. This course enables the students to appreciate the recreational value in mathematics through interesting games, fallacies and paradoxes.

Unit 1: Magic squares- Definition – History – Creation of magic square – Odd order ($2m+1$) – Single even order ($2(2m+1)$) – Double even order ($4m$) – Ramanujan date magic square.

Unit 2: Fallacies – Paradoxes – Divisibility rules.

Unit 3: Combinatorics- Rule of sum – Rule of product – Combination – Permutations – Basic level problems – Recurrence relations – Tower of Hanoi problem - Fibonacci numbers – Related results.

References:

1. Rouse ball, H.S.M. Coxter, Mathematical Recreations and essays 13th edition, Dover publication 2003.
2. Jagadguru swami sri bharathi krisna tirthaji maharaja, Vedic Mathematics, Banarsidass publishers, Delhi 2006.
3. V.K. Balakrishnan, Schaum's outline of combinatorics, Tata McGraw-Hill Publishing Company Limited, Delhi1995.
4. A.W.Tucker, Applied Combinatorics, John and Sons Wiley, 2000.
5. D.Cohen, Combinatorics , Wiley, 1978.
6. E.A.Maxwell, Fallacies in Mathematics, Cambridge University Press, 1969.

LIFESKILL

MAS1231

MATHEMATICS FOR LIFE

3HRS

Objective: The course is introduced to all the first year students as a life skill course. The course aims at enabling the students to acquire mathematical knowledge for technical proficiency. This course attempts to show what mathematics is, how it has developed from man's efforts to understand and model nature, how the mathematical approach to real problem can be accomplished, to what extent mathematics has modeled on civilization and culture. The topics covered in this course are history of calendar, puzzles, moon, sun and Mathematical models in nature.

Unit 1: History and types of calendar- Various number bases subsist in the history- Number puzzles and Logical puzzles.

Unit 2: Speed arithmetic-Complementation rule - Product near the base 10^k - Division- Square root- Fibonacci sequence in nature- Konigsberg bridge problem- Jordan curve- Planarity-Map coloring.

Unit 3: Synodic month, Sidereal month, Relation between synodic and sidereal month- Elongation of Moon- Phase formula- Lunar eclipse- Types and condition for its occurrence- Partial and total Solar eclipse- Condition for the occurrence of solar eclipse.

References:

1. J. T. Glover, Vedic Mathematics, Mothilal Banarsidass publishers, 1995.
2. P. Galbraith, W. Blum, G. Booker and Ian D. Hurtle, Mathematical models, Harwood publisher, chichester 1993.
3. Kumaravel and Mrs. Kumaravel, Astronomy, Shri Vishnu arts, Sivakasi, 2004.
4. Arthur berry, Astronomy, Dover publication, 1991.
5. George J. Summer, The great book of puzzles and teasers, Jaico publishing house, 1999.
6. John Clarke & Derek Allan Holton, A first look at Graph Theory, World Scientific Publishing Co. Ltd., 1995.

MAS1232

MATHEMATICAL REASONING

3HRS

Objective: The course is introduced to all the first year students as a life skill course. This course aims at developing logical thinking and mathematical reasoning. The science of coding and decoding is a hallmark in this era of communication and networking. The course enables the students to understand this process and ultimately enables them to crack the unknown. A logical deduction is an important tool for any sequential programming which is an essence of the present electronic era. The course will enable the students to crack any problem that involves logical deduction by several methods like cause and effect reasoning.

Unit 1: Blood relation- Deciphering jumbled up descriptions, Relation puzzle and coded relations-Coding and Decoding- Letter decoding, Direct letter coding, Number/symbol coding- Matrix coding- Substitution- Deciphering message word codes- Deciphering number and symbol codes for messages- Jumbled coding.

Unit 2: Puzzle test: Classification type- Seating/placing arrangements-Comparison type- Sequential order of things- Selection based on given conditions-Family based puzzles.

Unit 3: Logical deduction- Arguments- Assumptions- Courses of Actions- Conclusions- Deriving conclusions from passages- Theme deduction - Cause and effect reasoning.

References:

1. R.S.Aggarwal, A Modern Approach to verbal & non-verbal reasoning, S.chand & company Ltd., 2006.
2. R.S.Aggarwal, A Modern Approach to verbal reasoning, S.chand & company Ltd., 2006.

3. R.S.Aggarwal, A Modern Approach to non-verbal reasoning, S.chand & company Ltd.,2006.
4. R.S.Aggarwal, A Modern Approach to logical reasoning, S.chand & company Ltd., 2006.

Proposed Exam pattern for the course MAS1232

Part A: $60 \times 1/2 = 30$

Part B: $(6/9) \times 5 = 30$

Proposed Exam Pattern for Lifeskill and NME courses(except MAS1232)

Part A: $10 \times 2 = 20$

Part B: $(8/12) \times 5 = 40$

UG DEPARTMENT OF PHYSICS (SF)

B.Sc-Physics (Special) Programme

Self-Finance Programme for Choice Based Credit System 2015 – 2016

SEM	Part	Course No.	Course Title	Hours	Credits	Marks
1	I	TAM/FRE/HIN		3	2	30
1	II	ENS 1201	Conversational Skills	3	2	30
1	IIIC	PHS1331	Physics Lab – I	3	3	45
1	IIIC	PHS1553	Mechanics	5	5	75
1	IIIC	PHS 1555	Geometrical Optics	5	5	75
1	IIIS	MAS15XX	Mathematics – I	5	4	60
1	IVLS1	PHS 1231	Life Skill – I	3	2	30
1	IVNME1	PHS 1233	NME – I	3	2	30
Total				30	25	375
2	I	TAM/FRE/HIN		3	2	30
2	II	ENS1202	Reading & Writing skill	3	2	30
2	IIIC	PHS1332	Physics Lab – II	3	3	45
2	IIIC	PHS1554	Electricity & Magnetism	5	5	75
2	IIIC	PHS 1556	Analog Electronics	5	5	75
2	IIIS	MAS15XX	Mathematics – II	5	4	60
	IVLS2	PHS 1232	Life Skill – II	3	2	30
2	IVNME2	PHS 1234	NME – II	3	2	30
Total				30	25	375
3	I	TAM/FRE/HIN		3	2	30
3	II	ENS 2201	Study Skill	3	2	30
3	IIIC	PHS2661	Physics Lab – III	6	6	90
3	IIIC	PHS2463	Thermodynamics & Statistical Physics	5	4	60
3	IIIC	PHS2445	Astrophysics & Relativity	4	4	60
3	IIIC	PHS 2547	Physical Optics	4	5	75
3	IIIS	CHE25XX	Chemistry – I	5	4	60
Total				30	27	405
4	I	TAM/FRE/HIN		3	2	30
4	II	ENS 2202	Career Skills	3	2	30
4	IIIC	PHS2662	Physics Lab – IV	6	6	90
4	IIIC	PHS2464	Classical & Quantum Physics	5	4	60
4	IIIC	PHS2446	Digital Electronics	4	4	60
4	IIIC	PHS 2548	Mathematical Physics	4	5	75
4	IIIS	CHE25XX	Chemistry – II	5	4	60
Total				30	27	405

SEM	Part	Course No.	Course Title	Hours	Credits	Marks
5	IIIC	PHS3661	Physics Lab – V	6	6	90
5	IIIC	PHS3553	Atomic Physics and Spectroscopy	5	5	75
5	IIIC	PHS3445	Energy Physics	4	4	60
5	IIIC	PHS3547	Computational Physics	4	5	75
	IIIC	PHS3449	Medical Physics	4	4	60
5	IVLS3	PHS3231	Life Skill Course -III	3	2	30
5	IVVE	VAL0000	Value Education/EVS	4	2	30
Total				30	27	405
6	IIIC	PHS3662	Project	6	6	90
6	IIIC	PHS3554	Communication system and Microprocessor	5	5	75
6	IIIC	PHS3446	Nuclear Physics	4	4	60
6	III C	PHY3448	Solid State Physics	4	4	60
	III C	PHY3450	Modern Optics	4	4	60
6	IVLS	PHS3232	Life Skill Course - IV	3	2	30
6	IVVE	VAL0000	Value Education/EVS	4	2	30
Total				30	27	405
Grand Total for Semester I - VI				180	158	2370

Courses offered to Non-Major Students by the Department of PHYSICS

Part III Major Supportive Courses

SEM	Course No.	Course Title	Hours	Credits	Marks
I	PHS1471	Physics for Mathematics – I	5	4	60
II	PHS1472	Physics for Mathematics – II	5	4	60
I	PHS 1473	Microcontroller programming	5	4	60
III	PHS2471	Physics for Chemists – I	5	4	60
IV	PHS2472	Physics for Chemists – II	5	4	60
Total			20	16	240

Part IVLS Life Skill Courses:

SEM	Course No.	Course Title	Hours	Credits	Marks
I	PHS1231	Maintenance of Home Appliances	3	2	30
II	PHS1232	FM Radio theory & practice	3	2	30
III	PHS3231	Medical Instrumentation	3	2	30
IV	PHS3232	Renewable Energy	3	2	30
Total			12	8	120

Part IVVE Non Major Elective Courses

SEM	Course No.	Course Title	Hours	Credits	Marks
I	PHS1233	Basic Electronics	3	2	30
II	PHS1234	Wonders of Sky	3	2	30
Total			6	4	60

PHS 1331

Title: Physics Lab – I

3 Hrs./3 Credit

Course Description:

Mechanics, basics laws of electrostatics and magnetism and their applications.

Course Objectives:

1. to impart in skills in measurements
 2. to design and plan the experimental procedure
 3. to record and process the results
 4. to reach non trivial conclusions of significant of the experiments
1. Determination of random error (Simple pendulum, UV method & AC voltmeter)
 2. Determination of the diameter of the wire using screw gauge/measure the breadth of the glass slab using vernier calliper
 3. Determination of the refractive index of the material of a prism.
 4. Verification of Ohm's law: Potential dividing circuit
 5. Determination of the thermal expansion of a solid by Light & Telescope method
 6. Determination of the relative density of solid using Archimedes' liquid
 7. Determination of Spring constant by i) static method ii) dynamic method
 8. Determination of the Coefficient of Viscosity of a given liquid using Burette method
 9. Finding the frequency of the tuning fork using sonometer.
 10. Determination of the moment of inertia of a Fly Wheel.
 11. Finding the resolving power of a telescope/microscope
 12. Determination of the Young Modulus by Cantilever method
 13. Determination of the Surface Tension of a given liquid by Drop Weight Method
 14. Determination of the specific heat capacity of the liquid by Newton's Law of cooling

A minimum of any Ten experiments shall be carried out.

TEXT:

1. C.C. Ouseph, U.J. Rao, V. Vijayendran, S. Visvanathan, Practical Physics and Electronics, Printers and Publishers Pvt. Ltd (2007).

REFERENCE:

1. Bernard Lister Worsnop, Henry Thomas Flint, Advanced Practical Physics for Students, Methuen (the University of Wisconsin – Madison) (2009)

PHS 1553

Title: Mechanics

5 Hrs./5 Credit

Course Description:

Newton's laws, Circular motion, Rotational motion, properties of standing waves, Laws of universal gravitation, simple harmonic motion, Doppler Effect, Bernoulli's equation, Archimedes's principle

Course Objectives:

1. To understand the various laws of physics.
2. To find the relationships between linear and angular variable
3. To learn the behavior of Simple Harmonic Oscillation

4. To gain knowledge about the Wave motions
5. To understand the motion of planets and satellites
6. To understand the application of Bernoulli's equation

UNIT I: Rigid body dynamics:

Newton's laws - Projectile motion - uniform circular motion - dynamics of circular motion - frictional forces. Impact: collisions - linear momentum, impulse and momentum - conservation of momentum - two body collisions. Rotational motion - rotational variables - rotational quantities as vectors - rotation with constant angular acceleration - relationships between linear and angular variable - torque - rotational inertia and Newton's II law - rotational inertia of solid bodies - angular momentum of a particle

UNIT II: Gravitation:

Laws of universal gravitation - The constant of universal gravitation - Gravitation near earth surface - gravitational potential energy - The motion of planets and satellites - Energy considerations in the motions of planets and satellites. Equilibrium: conditions of equilibrium - centre of gravity - stable, unstable, neutral equilibrium of rigid bodies in a gravitational field

UNIT III: Oscillations:

Oscillating systems: The simple harmonic oscillator - simple harmonic motion - energy in simple harmonic motion - composition of SHM - application of SHM - damped and forced harmonic oscillations - resonance

UNIT IV: Wave motions and Sound Waves

Mechanical waves: types of waves - travelling waves - interference of waves - standing waves and resonance - sound waves - properties of standing waves, travelling waves, sound waves - speed of sound - power and intensity of sound waves - vibrating systems and beats - Doppler Effect.

UNIT V: Fluid Mechanics:

Fluid Statics: Fluids and solids - pressure and density - the variation of pressure in a fluid at rest - Pascal's principle and Archimedes's principle - Measurement of pressure

Fluid dynamics: General concept of fluid flow - stream line and equation of continuity - Bernoulli's equation - application of Bernoulli's equation.

TEXT:

Resnick, Halliday, Krane, PHYSICS Volume 1, 5th edition, John Wiley and Sons Inc, Singapore, 2004.

REFERENCES:

1. Jerold Touger, Introductory Physics, Wiley-Student Edition, New Delhi(2006).
2. Serway & Faughner, College Physics, 6th edn, Thomson Brooks/Cole (2005).
3. Hugh D. Young & Roger A. Freedman, University Physics, 11th edn, Sears and Zemansky's, India(2005).
4. H.C Verma, Concepts of Physics 2, Bharati Bhawan(P&D), (2009).

PHS 1555

Geometrical Optics

5 Hrs./5 Credit

Course Description:

Properties and behaviour of light, stops and ray tracing method, aberrations and some optical instruments.

Course Objectives:

1. To understand the basic laws of optics and the behaviour of light through different media
2. To understand the importance of stops in the light of aberrations in lenses
3. To become familiar with basic principle of the working of optical instruments

UNIT 1: Properties and behaviour of light

Laws of light– Fermat's principle – Colour Dispersion – critical angle and total internal reflection- refraction of light by prism – Minimum Deviation - Image formation by spherical surfaces – Virtual images – Conjugate points and planes – Convention of signs - Derivation of Gaussian formula.

UNIT 2: Prisms, Lenses and Mirrors

Image formation by thin lenses–Power of thin lens - Lens maker's formula – lenses in contacts – Focal points and Principal points - thick lenses – nodal points -cardinal points - thick mirror formulas– Sign conventions – power of mirrors – spherical aberrations – astigmatism for mirrors.

UNIT 3: Effect of Stops and Ray tracing method

Field stops and aperture stop – Entrance and exit pupils – front stop – Stop between two lenses – two lenses with no stop –determination of aperture stop – ray tracing formula and calculations for mirrors and lenses.

UNIT 4: Aberrations

First order theory of aberrations - third order theory of aberrations – spherical aberration of lens – coma – astigmatism – curvature of field – Distortion - chromatic aberration – separated doublet

UNIT 5: Optical instruments

Human eye – camera – Telephoto lenses – magnifiers - microscopes – Huygens and Ramsden eye pieces – astronomical telescope and binoculars.

TEXT:

1. Jenkins and White, Fundamentals of optics, 4thedn, McGraw Hills, International Editions, New Delhi, 2004.

REFERENCE:

1. AjoyGhatak, Optics, 3rdedn, Tata McGraw Hill Limited, New Delhi(2005).
2. K.K.Sharma, Optics, principle and application, Elsevier, New Delhi(2006).
3. Halliday, Resnick and Krane, Physics, Part II 5thedn, Wiley, NY(2003).
4. Feynman , Leighton , Sands ,The Feynman Lectures on Physics, New Millennium Edition (2013)

PHS 1451

Physics for Mathematics – I **4 Credit**
 Lab cum class (5 Hrs/Wk – 3 Hrs Theory & 2 Hrs Lab)

Course Description:

Mechanics, basics laws of electrostatics and magnetism and their applications.

Course Objectives:

1. to understand Newton's laws of motion in two dimensional motion
2. to study the coulombs law and its applications
3. to understand the law of magnetism
4. to get hands on experience

UNIT 1: Mechanics.

Motion of bodies in 2-D - projectile motion – range- maximum height – projectile from space flight- Rotational motion – Rotation with constant angular acceleration – angular momentum of particles – rigid body – spinning top – conservation of angular momentum – Planetary motion – Kepler's laws – universal law of gravitation.

UNIT 2: Electrostatics

Coulombs law – electric field – Gauss's law and its applications – potential – potential due various charge distribution - parallel plate capacitors – dielectrics- current – galvanometer – voltmeter – ammeter- potentiometric measurements.

UNIT 3: Magnetism

Magnetic field – BiotSavart's law – B due to a solenoid – Amperes law – Faradays law of induction – Lenz's law – magnetic properties of matter – Dia, para and ferro - transformers – alternating currents.

LABORATORY COMPONENTS

1. Determination of the breadth and thickness of glass slab using Vernier callipers and Screw gauge.
2. Determination of the acceleration due to gravity using simple pendulum and do the error analysis
3. Determination the radius of capillary tube using travelling microscope
4. Finding the resolving power of the prism using spectrometer.
5. Familiarisation of a multimeter.
6. Determination the rigidity modulus using compound pendulum
7. Verification of Ohm's law by potential dividing circuits
8. Determination the thermal expansion coefficient of a given material - optic lever method.
9. Determination the conservation of linear momentum of iron balls.
10. Determination of spring constant of the given spring.
11. Determination the coefficient of viscosity of the given liquid.
12. Verification the laws of transverse vibration using sonometer

A minimum of any eight experiments shall be carried out.

TEXT:

1. Halliday, Resnick and Krane, Physics, Part I 5thedn, Wiley, NY(2003).
2. Halliday, Resnick and Krane, Physics, Part II 5thedn, Wiley, NY(2003).
3. C.C.Ouseph,U.J.Rao,V.Vijayendran,S.Visvanathan, Practical Physics and Electronics,Printers and Publisher Pvt.Ltd. (2007).

REFERENCES:

1. Jerold Touger, Introductory Physics, Wiley Student Edition, New Delhi(2006).
2. Serway&Faughner, College Physics, 6thedn, Thomson Brooks/Cole(2005).
3. Hugh D. Youg& Roger A. Freedman, University Physics, 11thedn, sears and Zemansky's, India(2005).

PHS 1473**Microcontroller and programming**
Theory/cum lab(5 Hrs/wk)**4 Credit****Course Description:**

The objective of this subject is to enable the students to know the basic concepts of digital electronics and gain familiarity with the available IC chips. The students will learn about number systems, logic gates, various codes, parities, Boolean algebra, Mux and Demux, flip-flop, counters, shift registers

Course Objectives:

1. Understand concepts of combinational and sequential circuits
2. Analyze the synchronous and asynchronous logic circuits
3. Understand concepts of memory, programmable logic and digital integrated circuits
4. The students are studying the subject are supposed to learn the architecture and programming of a typical microcontroller.
5. Students also understand the peripheral devices and interfacing it with microcontroller to design a digital system.

Unit – I Introduction to Microcontrollers

Different types of microcontrollers – processor architectures – microcontroller memory types – control storage – variable area – program counter stack – hardware interface register – microcontroller features – 8051 microcontroller

Unit – II 8051 Processor architecture

The CPU – addressing modes – external addressing – interrupts -8051 instruction execution – data movement instructions – arithmetic instruction – bit operators – execution change operators.

Unit – III 8051 programming and software

8051 programming – Development tool/environments –assembly language – 8051 assembly programming styles – interpreter.

Text:

- 1) MykePredko, Programming and customizing the 8051 microcontroller, Tata McGraw – Hill Edition (1999).

References

- 1) Kenneth J. Ayala, The 8051 Microcontroller, Cengage Learning(2004).
- 2) Muhammad Ali Mazidi, Janice Mazidi, Janice GillispieMazidi, the 8051 Microcontroller and Embedded Systems, by Prentice Hall (1999)

Lab-**Familiarization of multimeter and CRO**

1. NAND /NOR as Universal gate
2. Transistor as inverter
3. Implement of Boolean expressions
4. JK – Flip Flop as a counter
5. Half Adder ,Full Adder and Subtractor
6. Arithmetic and Logic Unit
7. Arithmetic operation of 8051
8. Direct bank addressing of 8051
9. RAM direct addressing of 8051
10. Bit addressing of 8051

A minimum of any eight experiments shall be carried out.

PHS 1233**Basic Electronic****2 Credit****Course Description**

Fundamentals of semiconductors, rectification, Basic gates, De-Morgan's theorem, memory devices

Course Objectives

1. To understand the basic concept of semi conductor
2. To understand Ohm's law, electric cell
3. To gain knowledge about basic gates
4. To understand theory of secondary storage devices

Unit I Electric Circuits

Resistor – capacitor – inductor – Series and parallel circuits- use of capacitor – Ohms law - applications of ohms law – current – voltage – AC,DC, phase, neutral, positive, negative. Cell – Alkali

Unit II Semiconductors devices and applications

Analog and digital signals, semiconductors – P-type and N-type – diodes – rectification – half and full wave – LED,Photo diode – solar cell – transistor – different types – amplifier and oscillator (block diagram).

Unit III Digital electronics and memory devices

Binary number systems – Logic gates – OR, AND, NOT, NAND, Ex-OR, Ex-NOR – Boolean algebra (basic relations) – De Morgan's theorems. Memory devices – RAM, ROM – Principles of storing memory: magnetic memory – floppy – CD – VCD – DVD – pen drives – hard discs. Digital clock (block diagram).

TEXT :

- 1) R.P.Jain , Modern Digital Electronics, 2nd edition, Tata McGraw – Hill Publishing Company(1997).
- 2) N. N. Bhargava S. C. Gupta D. C. Kulshreshtha, Basic Electronics and Linear Circuits Tata McGraw-Hill Education, (1984)

REFERENCES

- 1) Virendra Kumar, Digital Technology Principles and Practice, New Age International Publishers(1995).
- 2) Ronald J.Tocci, Digital System Principles and Applications, 6th Edition, Prentice-Hall of India Ltd(1996).
- 3) Donald P Leach, Albert Paul Malvino, GoutamSaha, Digital principles and applications, 7th edition,McGrawHill(2011)
- 4) K.K.Tewari, Elecricity and Magnetism, S.Chand publication(2004)

PHS 1231**Maintenance of Home Appliances****2 Credit****Course Description:**

Construction and working principle of Home appliance, house wiring , troubleshooting and repairing some of the appliances

Course Objectives:

1. To impart technical knowledge with practical skills
2. Impart knowledge and 'Hands on' practice about appliances used commonly in our day to day life
3. To learn the basic idea of household wiring system
4. To get training in troubleshooting simple circuits
5. To get training for repairing and servicing cell phone

Unit-I: House wiring

Current-A.C.voltage – rms voltage – peak voltage – Square wave – Sine wave -conductor and insulator-resistor-inductor-ohm's law-electromagnetic inductance -switches-plug-wires and cables-various types of wiring- Phase-neutral and earth wire cables-fuse-lamp holders-distribution of electricity in a house-transformer-working of a transformer.- Inverter - UPS

Unit-II: Working Principle of Electrical Appliances

Working principle of CFL, LEDbulbs/tube light-electric motor-mixer and grinder-electric cooker-iron box--water heater-washing machine-vacuum cleaner-television-refrigerator-cell phone.

Unit-III: Principles of troubleshooting and repairing

Use of multimeter and line tester-to attend faults in a tube light-tube light circuits-iron box connection-mixy- switch board wiring-fan-regulator condition-fuse-cell phone service.

List of experiments

1. Familiarization of Multimeter
2. Measurement of resistance
3. Measurement of current and voltage

4. Verification of Ohm's law
5. Series circuit
6. Parallel circuit
7. Testing of diode and transistor

REFERENCE:

1. Haper, How things work vol I& II .the universal encyclopedia of machines, Collin. Pub. India PVT.Ltd (1992).
2. ManaharLottia, Modern mobile phone service system , BPB Publication, NewDelhi (2001)
3. Anwani I.M, Electrical Appliances :Theory and Repair , R.B.Publication, Enlarged and new edition ,Delhi (1981)

PHS 1332

Physics Laboratory II

3 Hrs./ 3 Credit

Course Description:

Measurements, different instruments and methodology of using it, various procedures for finding constants, wavelengths etc.,

Course Objectives:

1. to impart skills in measurements
 2. to design and plan the experimental procedure
 3. to record and process the results
 4. to reach non trivial conclusions of the significance of the experiments
1. Determination of the young's modulus of the rectangular beam by uniform bending method.
 2. Determination of the thermo emf of a thermocouple and its variation with temperature
 3. Determination of the frequency of the tuning fork using Melde's apparatus.
 4. Drawing the i-d curve of the given prism using spectrometer.
 5. Determination of the Cauchy constants using Spectrometer.
 6. Determination of the rigidity modulus using torsion pendulum
 7. Determination of the acceleration due to gravity using compound pendulum
 8. Logarithmic Graph - Frequency response of R, L and C
 9. Verification of the Network Theorems.
 10. Studying the PN junction Diode Characteristics
 11. Studying the characteristics of the CE configuration of a Transistor
 12. Determination of the B_H using field along the axis of a coil.
 13. Finding magnetic moment of a given bar magnet($\tan A$, $\tan B$)
 14. Determination the frequency of ac main using ac sonometer

A minimum of any TEN experiments shall be carried out.

TEXT:

1. C.C.Ouseph, U.J.Rao, V.Vijayendran, S.Visvanathan Practical Physics and Electronics, Printers&Publishers Pvt.Ltd(2007).
2. Bernard Lister Worsnop, Henry Thomas Flint, Advanced Practical Physics for Students, Methuen(the University of Wisconsin – Madison) (2009).

The American College, Madurai
Department of Physics(SF)
PHS 1554- Title Electricity and Magnetism
Syllabus
2nd Semester 2014/2015

Coordinating Unit	Department of Physics(SF)		
Supporting Unit(s)	Nil		
Course Code:	PHS 1554	Year of Study	1
Course Title:	Electricity and Magnetism		
Core/Elective:	Core		
Prerequisites Knowledge:	Basics of static charges, Ohm's law, Kirchoff's law, electromagnetic induction, electromagnetic waves		
Duration:	One Semester	Credit Units	5
Class/Laboratory Schedule:	Class(5 Hrs/Wk)		
Laboratory/Software Usage:	-		
Course Description:	Electrostatics, current electricity, laws of electromagnetic induction and its applications, magnetostatics, magnetic properties, electromagnetic waves and its characteristics		
Course Objectives:	<ul style="list-style-type: none"> • To understand the basic law of electrostatics • To impart knowledge in understanding magnetostatics • To inculcate the principles of electromagnetic induction and its applications • To acquire knowledge about the behaviour of magnetic materials • To understand the propagation of electromagnetic waves 		
Learning Outcomes(LO)	Upon Completion of this course, students should be able to: <ol style="list-style-type: none"> 1. Know electrostatics and magnetostatics and how they are interdependent with each other. 2. Acquire the knowledge about electromagnetic induction and its applications 3. Understand the propagation of em waves in different media 		

UNIT – I Electrostatics

Coulomb's Law - Electric Field - Electric field due to a point charge - dipole - ring of charges - line of charges - Gauss's law and its applications - Electric potential - potential due to charged disc, dipole - quadrupole - capacitance - parallel plate, spherical, cylindrical capacitors - capacitors in series and in parallel - capacitor with dielectric - dielectric atomic view

UNIT – II Current Electricity & Magneto statics

Current – Resistance - Resistivity - Ohm's Law - Kirchoff's law and applications - Magnetic induction - Magnetic force - Biot - Savart's Law - applications - Ampere's Law - Applications

UNIT – III Electromagnetic Induction

Faraday's law –Lenz law-self and mutual inductance - inductance of solenoid and toroid – LR and LC circuits with dc voltage - LCR oscillations - Resonant circuits.

UNIT – IV Magnetic Properties

Magnetic properties of matter - Para , Dia, Ferro magnetism - Langevin theory of paramagnetism - Hysteresis - Displacement current

UNIT – V Electromagnetic Waves

EM waves –Characteristics and properties – Maxwell's equations – Poynting vector- EM wave propagation in free space, non- conducting and conducting media

TEXT:

1. Resnick, Halliday, Krane, PHYSICS Volume II, 5th edition, John Wiley and Sons Inc, Singapore, 2004.
2. David J Griffiths ,Introduction to Electrodynamics, 3rd ed, AvadhPrakashan, 1999

REFERENCES

- 1) H.C.Verma, Concepts of Physics 2, Bharati Bhawan (P&D) (2014)
- 2) Dale Corson & Paul Lorrain, 2nd edn, Electromagnetic fields and waves, CBS Publishers, New Delhi (1988)
- 3) John R Reitz, Frederick J Milford and Robert W Christy, Foundation of Electromagnetic Theory 3rd ed, Avadh Prakashan (1994)

PHS 1556

Analog Electronics

5Hrs/wk 5 Credit

Course Description:

This subject gives the knowledge of fundamental concepts of basic electronics and aims at providing the students with basic understanding of conductors, semiconductors and insulators, extrinsic and intrinsic semi-conductors, p-n junction, need of rectifiers in electronics, understanding of filters in rectifiers, LEDs, varactor diodes, LCD; understanding the working of transistors in various configurations; understanding of FETs and MOSFET etc. for effective functioning in the field of electronic service industry. The teacher should give emphasis on understanding of concepts and explanation of various terms used in the subject. Practical exercises will reinforce various concepts. Industrial/field exposure must be given by organizing visits

Course Objectives:

1. To understand the various Network theorems
2. To learn the behaviour of single junction solid state devices
3. To understand the function of a transistor as an amplifier and as an oscillator
4. To understand the function of a FET as amplifier
5. To gain knowledge about the basic properties of Op-Amp

UNIT I- Basic Circuit Theory

Ohm's Law - Active and Passive devices, Kirchhoff's law - Network theorems: Superposition theorem - Thevenin's theorem - Norton's theorem - Thevenin to Norton conversion and vice versa. h-parameters, network analysis.

UNIT II - Semiconductor Diode and its Characteristics

Semiconductors, Conductors and insulators - band energy - diagram. Intrinsic and extrinsic semiconductors - P-N junction - biasing - V-I characteristics - Half and full wave rectifiers - power supply - voltage regulation - ripple factor- Zener diode and its V-I characteristics.- wave shaping circuits - voltage multipliers - voltage regulators - photo diode - LED.

UNIT: III - TRANSISTOR AND FET

Transistor construction and terminal identification - basic operation - biasing - Characteristics and parameters in CE mode- relation between α and β . Transistor as a switch - Transistor as an amplifier - Base bias - emitter bias - voltage divider bias. AC and DC load line. Thermal runaway. Analysis of transistor amplifier CE - FET- characteristics & as an amplifier.

Unit: IV TRANSISTOR AS AN OSCILLATOR

Feedback principle - negative and positive feedback. Basic condition for oscillation- Theory and operation of Hartley, Colpitts, Phase shift and Wien's bridge oscillators - astable, mono stable and bistable transistor oscillators.

UNIT - V - OPAMP AND ITS APPLICATIONS

Op-Amp basics - Characteristics of an ideal Op-Amp - Closed and open loop operation. Concept of virtual ground. Inverting - non-inverting amplifier, Adder, difference amplifier, comparator, Voltage follower - integrator - differentiator.

TEXT

1. Electronic Principles by Albert P. Malvino, 3rd edition, Tata Mcrawhill(2014)
2. N. N. Bhargava S. C. Gupta D. C. Kulshreshtha, Basic Electronics and Linear Circuits, Tata McGraw-Hill Education(1984)

REFERENCES

1. Electronic devices and circuit, salevahanan, 3rd edition, Tata Mcrawhill(2014)
2. Principles of Electronics, V K Mehta and Rohit Mehta, S.Chand & Company Ltd. Revised Eleventh Edition (2008).

PHS 1472

Physics for Mathematics – II
Theory cum Lab (5 Hrs/Wk – 3 Hrs Theory & 2 Hrs Lab)

4 Credit

Course Description:

Basics of em oscillations, electronic devices and thermodynamics.

Course Objectives:

1. to understand the basic of electromagnetic oscillations
2. to gain knowledge in understanding electronic devices
3. to Know the laws of thermodynamics
4. to imports skills in measurements by doing experiments.

UNIT I :Sound

Characteristics of sound waves – Doppler effect – application – intensity and loudness – decibels – vibrating systems – velocity of sound in gas by Kundz tube method – frequency of vibrator by Meldes' string method – production of ultrasonic.

UNIT II :Electronics

Intrinsic and extrinsic semiconductors – N and P type semiconductor- diodes – Forward and reverse biasing - V-I characteristics of diodes – transistors – various configurations – CE amplifier - Op-Amp and its characteristics – inverting and non inverting amplifiers – adder – subtractor – integrator and differentiator– introduction to logic gates.

UNIT III: Heat and Thermodynamics

Work, heat, isothermal and adiabatic – Zeroth and I Law of thermodynamics – specific heat capacities – Second law of thermodynamics - entropy – Carnot's cycle – Diesel cycle - Rankine cycle - applications – Conduction – convection - radiation.

LABORATORY COMPONENTS

1. Determination of the Young's Modulus of the material by uniform bending method.
2. Determination of the thermo emf of a Thermo Couple
3. Determination of the surface tension of the liquid by drop weight method.
4. Determine the thermal conductivity of poor conductor using Lee's disc.
5. Finding the specific heat capacity of a solid by method of mixtures.
6. Determination of the rigidity modulus using torsion pendulum
7. Drawing the V-I characteristics of the p-n junction diode.
8. Verification of the truth table of logic gates.
9. Construction of the summing and difference amplifier and find the gain.
10. Electrical Oscillators – LCR Circuit.
11. Determination the frequency of the tuning fork using Melde's apparatus.
12. Determination the frequency of the tuning fork using resonance column

A minimum of any **eight** experiments shall be carried out.

TEXT:

1. Halliday, Resnick and Krane, Physics, Part II, 5th edn, Wiley, NY, (2003).
2. Arthur Beiser, Perspective of Modern Physics, 5th edn, Wiley, NY, (1995).
3. C.C.Ouseph, U.J.Rao, V. Vijayendran, S. Visvanathan Practical Physics and Electronics, Printers & Publishers Pvt. Ltd. (2007).

REFERENCE:

1. Jerold Touger, Introductory Physics, Wiley Student Edition, New Delhi, (2006).
2. Serway&Faughner, college Physics, 6thedn, Thomson Brooks/Cole, (2005).
3. Hugh D. Young& Roger A. Freedman, University Physics, 11thedn, sears and Zemansky's, India, (2005).

PHS 1232 – Title: FM RADIO THEORY AND PRACTICE 3 Hrs/wk 2 Credit

Course Description:

Conductors-Insulators, Transformers, Electromagnetic waves , Modulation

Transmitter – Receiver, radio detector –Receiver Types-Transmission lines-Antennas.

Course Objectives:

- To know the basic laws and components of Electronics
- To understand the properties of electromagnetic waves
- To understand the principle of radio wave transmission and reception
- To apply the acquired knowledge to assemble a FM kit

Unit – I Introduction to Electromagnetic waves

Electromagnetic waves - characteristics of em waves– Frequency spectrum – Band width Requirements – Propagation of em waves – Ground wave, space wave and ionospheric wave.

UNIT-II Modulation and Demodulation.

Communication systems – Modulation – need for modulation – Amplitude Modulation – Frequency modulation – Advantages and Disadvantages – Demodulation.

Unit – III Transmission and Reception

Transmitter – Receiver– TRF receiver – Superhetrodyne receiver – amplitude limiting – radio detector –Receiver Types-Transmission lines-Antennas.

Practical:- Basic FM radio components –design and testing of FM radio receiver

TEXT :

Kennedy and Davis, Electronic Communication system, 4th edition, Tata McGraw – Hill(1999).

REFERENCE:

Deshpande and Rangoli, Communication Electronics,2nd Edition, Narosa Publishing House (1998).

PHS 1234

Wonders of Sky

4 Hrs/wk 2 Credit

Course Description:

Basics of astronomy, Stellar objects and observation and theories regarding origin of universe.

Course Objectives:

1. To understand the omnipresent Gravitation, motion, distance, size, mass, luminosity of the heavenly bodies
2. To know the stellar objects and observation through various telescopes.
3. To know the structure and organization of the universe.

UNIT I: Basics of Astronomy

Development of nature philosophy – celestial sphere – coordinate systems – Kepler's laws – Newtonian gravitation – seasons – eclipses – solar family.

UNIT II: Stellar Objects and Observational Astronomy

Stellar distance – magnitudes of star light – evolution stages of stars – fate of stars – mysterious objects - Astronomical observations – telescopes – classes of galaxies.

UNIT III: Origin of Universe

Cosmological principle – big bang theory – Hubble's law – expanding universe – steady state universe – evidences for Einstein's gravitation.

TEXT

1. William J. Kaufmann, Astronomy: The Structure of the Universe, Macmillan Publishers Co., Inc. New York.

REFERENCE:

1. George O. Abell, Exploration of the Universe, Saunders college publishing(1986)
2. K.D. Abhayanker, Astro Physics Stars and Galaxies, Tata McGraw – Hill publishing, New Delhi(1992).

PROGRAM / COURSE FRAME

U.G. DEPARTMENT OF CHEMISTRY (SF)

Program for Choice Based Credit System - 2015 - 2016

SEM	Part	Course No.	Course Title	Hours	Credits	Marks
1	I	TAM/FRE/HIN		3	2	30
1	II	ENS 1201	Conversational Skills	3	2	30
1	IIIC	CHS 1511	Physical Chemistry – 1	5	5	75
1	IIIC	CHS 1513	Inorganic Chemistry – 1	5	5	75
1	IIIC	CHS 1331	Inorganic Quantitative Analysis	3	3	45
1	IIIS	PHY	Physics	5	4	60
1	IV	NME 1	Non Major Elective-1	3	2	30
1	IV	LS 1	Life Skill-1	3	2	30
1	V		NSS/NCC/PED/SLP			
			Total	30	25	405
2	I	TAM/FRE/HIN		3	2	30
2	II	ENS 1202	Reading & Writing Skills	3	2	30
2	IIIC	CHS 1512	Organic Chemistry – 1	5	5	75
2	IIIC	CHS 1514	Inorganic Chemistry – 2	5	5	75
2	IIIC	CHS 1332	Organic Analysis and Preparation	3	3	45
2	IIIS	PHY	Physics	5	4	60
2	IV	NME2	Non Major Elective-2	3	2	30
2	IV	LS 2	Life Skill-2	3	2	30
2	V		NSS/NCC/PED/SLP			
			Total	30	25	405
3	I	TAM/FRE/HIN		3	2	30
3	II	ENS 2201	Study Skills	3	2	30
3	IIIC	CHS 2511	Organic Chemistry – 2	5	5	75
3	IIIC	CHS 2513	Inorganic Chemistry – 3	5	5	75
3	IIIC	CHS 2515	Physical Chemistry – 2	5	5	75
3	IIIC	CHS 2431	Inorganic Qualitative Analysis	4	4	60
3	IIIS	MAT/BCH		5	4	60
3	V		NSS/NCC/PED/SLP			
			Total	30	27	435
4	I	TAM/FRE/HIN		3	2	30
4	II	ENS 2202	Career Skills	3	2	30
4	IIIC	CHS 2512	Organic Chemistry – 3	5	5	75
4	IIIC	CHS 2514	Inorganic Chemistry – 4	5	5	75
4	IIIC	CHS 2516	Physical Chemistry – 3	5	5	75
4	IIIC	CHS 2432	Organic Estimation & Gravimetric Analysis	4	4	60
4	IIIS	MAT/BCH		5	4	60
4	V		NSS/NCC/PED/SLP			
			Total	30	27	435

SEM	Part	Course No.	Course Title	Hours	Credits	Marks
5	IIIC	CHS 3611	Organic Chemistry – 4	6	6	90
5	IIIC	CHS 3613	Inorganic Chemistry – 5	6	6	90
5	IIIC	CHS 3615	Physical Chemistry – 4	6	6	90
5	IIIC	CHS 3531	Physical Chemistry Lab	5	5	75
5	IV	CHS 3200	Environmental Chemistry	4	2	30
5	IV	xxxx	Life Skill – 3	3	2	30
			Total	30	27	405
6	IIIC	CHS 3612	Organic Chemistry – 5	6	6	90
6	IIIC	CHS 3614	Applied Chemistry	6	6	90
6	IIIC	CHS 3616	Physical Chemistry – 5	6	6	90
6	IIIC	CHS 3532	Special Lab Techniques	5	5	75
6	IV	VAL	Value Education	4	2	30
6	IV	xxxx	Life Skill – 4	3	2	30
			Total	30	27	405
			Grand Total	180	158	2430

MAJOR SUPPORTIVES COURSES

Sem	Part	Course No	Course Title	Hours	Credits	Marks
1	IIIS	CHS1425	Chemistry for Biochemist - 1	5	4	60
2	IIIS	CHE 1426	Chemistry for Biochemist - 2	5	4	60
3	IIIS	CHE XXX	Chemistry for Physicist - 1	5	4	60
4	IIIS	CHE XXX	Chemistry for Physicist - 2	5	4	60

NON MAJOR ELECTIVES

Sem	Part	Course No	Course Title	Hours	Credits	Marks
1	IV	CHS 1251	Dairy Chemistry	3	2	30
2	IV	CHS 1252	Chemistry in Today's World	3	2	30

LIFE SKILL COURSES

Sem	Part	Course No	Course Title	Hours	Credits	Marks
1	IV	CHS 1271	Cosmetics and Consumer Products	3	2	30
2	IV	CHS 1272	Chemistry in Crime Investigation	3	2	30

CHS 1511

PHYSICAL CHEMISTRY-I

5 credits

5 hrs / week

- UNIT-I: Gaseous State-I 12 hours**
The kinetic molecular theory of gases – derivation of the gas laws –the ideal gas equation – kinetic energy and temperature – Maxwell distribution of molecular speeds and energies – types of molecular speeds – expansivity and compressibility – collision parameters – mean free path – degrees of freedom of a molecule – principle of equipartition of energy
- UNIT-II: Gaseous State-II 12 hours**
Deviations from ideal behavior – equation of states for real gases – Vander Waals equation of state –other equations of state – intermolecular forces - the critical phenomena – P-V isotherm of carbon dioxide – the Vander Waals equation and critical states – Principle of corresponding states.- liquefaction of gases.
- UNIT-III: Liquid State& Electric And Magnetic properties of molecules 12 hours**
Theory of liquids – vapour pressure – surface tension – surface active agents – viscosity – molar refraction - polarization – Clausius-Mosotti equation – Debye equation - Dipole moment - magnetic properties of molecules – Gouy's method - Liquid crystal – vapour pressure temperature diagrams – types of liquid crystals – arrangement of liquid crystals- Applications of liquid crystals.
- UNIT-IV: Colloids 12 hours**
Colloidal systems – classification – preparation - a quick review – purification of colloids – properties – optical – charge on colloidal particles – electrical double layer – coagulation of colloids – electrophoresis – electro-osmosis – surfactants – protective colloids – gold number – emulsions – gels - introduction to micelles- applications of colloids.
- UNIT-V: Surface Chemistry 12 hours**
Adsorption – examples, adsorption versus absorption, mechanism of adsorption – types of adsorption – physisorption, chemisorption – characteristics – factors influencing adsorption-adsorption isotherms- Freundlich- Langmuir derivation – multilayer adsorption – B.E.T (derivation not necessary) – Gibbs adsorption isotherm-applications of adsorption – ion exchange adsorption – applications of ion exchange adsorption.

References:

1. B. R. Puri, L. R. Sharma, M. S. Pathania, *Principles of Physical Chemistry*, Vishal Publishing Co., 2014.
2. P. L. Soni, O. P. Dharmarha, U. N. Dash, *Textbook of Physical Chemistry*, S. Chand & Sons., 2014.
3. B. S. Bahl, G. D. Tuli, Arun Bahl, *Essential of Physical Chemistry*, S. Chand & Co., 2014.
4. G.W. Castellan, *Physical Chemistry*, 3rd edition, Addison-Wesley, 1983.
5. P.W. Atkins, Julio de Paula, *Physical Chemistry*, 8th edition, Oxford University Press, 2008.

CHS1513
SEMESTER - I

INORGANIC CHEMISTRY-I

5Hrs/WEEK
CREDITS - 5

UNIT - I: PERIODIC TABLE AND ATOMIC PROPERTIES (12 Hrs)

Long form of periodic table – characteristics – classification of elements on the basis of electronic configuration – periodicity of properties – cause of periodicity – factors influencing – atomic radius – ionic radius – effective nuclear charge – Slater's rule – ionization energy, electron affinity, electronegativity – Pauling and Mulliken scales of electronegativity – applications of electronegativity – diagonal relationship – further extension of periodic table.

UNIT - II: METALLURGY(12 Hrs)

Occurrence of metals- steps involved in metallurgical processes- concentration of ore- calcination- roasting- reduction of free metal- electrometallurgy- hydrometallurgy- refining- thermodynamics of reduction processes- Ellingham diagram.

OXIDATION AND REDUCTION

Oxidation number- redox reactions- oxidizing agents- reducing agents - molecular and ionic equations- balancing of redox equations by ion electron method- auto oxidation- induced oxidation- standard electrode potential- electrochemical series- applications - Lattimer diagrams.

UNIT - III: ACID – BASE CONCEPT(12 Hrs)

Arrhenius theory- Bronsted – Lowry concept- Lewis concept – solvent system concept- levelling solvents–Lux flood concept –Usanovich definition – factors influencing relative strengths of acids and bases- HSAB principle and its applications.

NON- AQUEOUS SOLVENTS

Physical properties of solvent- types of solvents and their general characteristics – protic solvent like H₂O – reaction in non-aqueous solvents with reference to liquid NH₃ and liquid HF.

UNIT - IV: s- BLOCK CHEMISTRY(12 Hrs)

Hydrogen – isotopes –reactive forms of hydrogen – nascent hydrogen – active hydrogen – ortho and parahydrogen –isotopes of hydrogen- occluded hydrogen –uses-heavy water

Alkali metals and alkaline earth metals – General characteristics-electronegativity - ionisation energy – electropositive character – reducing properties – flame colour – hydration energy –lattice energy and solubility of salts –biological importance –anomalous behaviour of lithium and beryllium –Diagonal relationship of Li & Mg and Be & Al–Compounds of alkali metals –hydroxides– oxides –peroxides–superoxides– wraparound complexes–preparation properties and uses of NaOH, NaHCO₃Plaster of Paris , basic beryllium acetate –Hardness of water

UNIT - V: ANALYTICAL CHEMISTRY-I(12 Hrs)

Titrimetric method of analysis – end point – equivalence point – requirements – types equivalent masses – electronic concept – concentration systems – molarity – normality – formality – weight percentage – ppm - primary standard – standardization – dilution – percentage purity – acid - base neutralisation titration – theory of acid-base indicators–mixed indicators – precipitation titration – indicator –redox titration–reagents used – structural chemistry of redox indicators –iodometry–chelometric titrations –chelons –metallochromic indicators –EDTA titration methods –selectivity – masking of ions

References:

1. B.R. Puri, L.R. Sharma and K.C. Kalia, Principles of Inorganic Chemistry, Milestone Publishers, 2012 .
2. J.D. Lee, Concise Inorganic Chemistry, Vedition., Chapman & Hall, 2000.
3. F.A Cotton and G. Wilkinson.,L.G. Paul., Basic Inorganic Chemistry III Edition John wileyEducation (Singapore) 2004.
4. P.L.Soni., Mohan Katyal, A text book of Inorganic Chemistry, Sultan Chand& Sons, 2006
5. Day Jr R.A. Underwood A.L, Quantitative analysis ,Prentice Hall of India, New Delhi, (2006).
6. R. Gopalan, P.S Subramanian, K Rengarajan ,Elements of Analytical Chemistry,Sultan Chand and sons, NewDelhi

CHS 1331 INORGANIC QUANTITATIVE ANALYSIS (VOLUMETRIC) 3 credits
3 hrs/week

I. ACIDIMETRY

1. Estimation of HCl– Link NaOH -standard oxalic acid
2. Estimation of Na₂CO₃ and NaHCO₃ mixture –Link HCl - standard Na₂CO₃

II. PERMANGANOMETRY

3. Estimation of oxalic acid
4. Estimation of FAS

III. DICHROMETRY

5. Internal indicator method
6. External indicator method

IV. IODOMETRY

7. Estimation of potassium dichromate

V. COMPLEXOMETRY

8. Estimation of Zn²⁺
9. Hardness of water- temporary and permanent

VI. PREPARATION OF COMPLEXES

10. Tetraamminecopper(II) sulphate
11. Potassium trioxalatoferrate(III)

MAJOR SUPPORTIVE**CHS 1425**

CHEMISTRY FOR BIOCHEMIST – I
(Theory cum Lab Course)

4 credits
5 hrs/week

There will be two components in this course. Theory component deals with atomic structure, chemical bonding and energetic. It also deals the basics of organic chemistry, solution and nuclear chemistry. The objective of the lab component is to train the students in the qualitative analysis of inorganic salts.

THEORY COMPONENT**[3hrs / week]****UNIT - I: Atomic structure, Periodic properties and Chemical bonding (9 Hrs)**

Shapes of s & p orbitals – electronic configuration for H to F – definitions of Ionization energy, Electron affinity & Electro negativity – Ionic bond – lattice energy – Born - Haber cycle - Covalent bond – VSEPR model – BCl_3 , CH_4 , NH_3 , H_2O – MO theory – MO diagram for H_2 , He_2 , N_2 , O_2 , F_2 – Hydrogen bond – Consequences of hydrogen bonding

UNIT – II: Basics of Organic Chemistry (9 Hrs)

Tetravalent Carbon – Aliphatic and Aromatic compounds – Structure – A.O overlap concept – Hybridization – sp^3 , sp^2 , sp – Functional groups – Nomenclature – Types of organic reactions – substitution, addition, elimination, oxidation, reduction reactions – Reactive intermediates – carbocations, carbanions, free radicals – Generations and their stability

UNIT - III: Energetics (9 Hrs)

Spontaneous and Non spontaneous changes, Criterion for spontaneity, Entropy, Second law of thermodynamics, Measurement of Entropy, Free Energy and chemical equilibrium – law of mass action, Entropy Change in Phase Transformation, Le Chatelier principle – application of thermodynamics to biological systems.

UNIT – IV: Solution Chemistry (9 Hrs)

Aqueous solution – Acid-Base equilibria – pK_a & pH – Relative strength of acids and bases from K_a and K_b values – Buffer solutions – Preparation of acidic and basic buffers – Henderson equation – Solubility & K_{sp} – Types of solutions – Diffusion in solutions – osmosis and osmotic pressure – measurement of osmotic pressure – isotonic solutions, reverse osmosis – significance of osmosis in biological systems

UNIT - V: Nuclear Chemistry and Radioactivity (9 Hrs)

Types of radiations – nucleons – isotopes, isobars & isotones – mass defect – n/p ratio and nuclear stability – the group displacement law – rate of radioactive decay – half life period – nuclear fission and fusion, definition & comparison – artificial radioactivity – application of radio isotopes

LAB COMPONENT**[2hrs / week]**

This course is intended for students to qualitatively analyze the simple salts containing the following cations and anions.

Cations – Pb(II) , Cu(II) , Fe(II) , Mn(II) , Ni(II) , Co(II) , Zn(II) , Mg(II) , NH_4^+

Interfering Anions – oxalate, tartrate, borate, fluoride, phosphate

References:

1. R. Gopalan, S. Sundaram, Fundamentals of Chemistry, Sultan Chand & Sons, 1988
2. R. Gopalan, S. Sundaram, Allied Chemistry, Sultan Chand & Sons, 1993
3. R. Gopalan, Inorganic Chemistry for Undergraduates, Universities Press, 2009
4. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shobanlal Nagin Chand & Co, 1995.
5. B. S. Bahl, Arun Bahl, A Text Book of Organic Chemistry, S. Chand & Co., 1989
6. P. L. Soni, Textbook of Organic Chemistry, Sultan Chand & Sons, 1998
7. B. S. Bahl, Arun Bahl, A Text Book of Physical Chemistry, S. Chand & Co., 1989
8. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Physical Chemistry, Shobanlal Nagin Chand & Co, 1998

CHS 1251

DAIRY CHEMISTRY

NME - 1
2 Credits
3 hrs/week

Unit-I Composition of milk (8Hrs)

Composition and structure of milk- constituents of milk- lipids, proteins, carbohydrates, vitamins and minerals--Properties of milk-odour,density,viscosity,optical properties, acidity, freezing point-Recknagel's effect- estimation of fats and total solids in milk

Unit-II Milk processing and preservation (8Hrs)

Microbiology of milk- Destruction of microorganism in milk- pasteurisation -types of Pasteurisation- bottle, Batch and HTST- ultra high temperature pasteurisation- preservatives and neutraliser

Unit- III BasicMilk Derivatives (8Hrs)

Cream- composition- chemistry of creaming process

Butter- composition- desibutter- salted butter

Ghee- major constituents- common adulterants added to ghee and their detection- rancidity - definition- prevention- antioxidants

Unit- IV- Special Milk(8Hrs)

Definition- merits- flow diagram for manufacturing- reconstituted milk- homogenised milk - flavoured milk- vitaminised milk- toned milk- imitation milk- condensed milk- definition, composition and nutritive value

Unit V – Milk products(8Hrs)

Fermented milk products- definition of culture- cultured cream- cultured butter milk-cheese- unripened cheese- ripened cheese-paneer-yohurt and mazzorola cheese

Ice cream- types- ingredients- manufacture- stabilizer- emulsifiers and their role

Milk powder-skimmed milk powder- whole milk powder- buttermilk powder- types of drying process

References:

1. Sukumar De, Outlines of Dairy Technology, Oxford University Press, New Delhi, (2001)
2. Lillian Hoagland Meyer, Food Chemistry, CBS Publishers, New Delhi.(2004)

CHS 1271

COSMETICS AND CONSUMER PRODUCTS

LS-1
2 credit
3 hours / week

Unit 1. Hair care and colorants (8 hrs)

Hair structure-permanent hair waving-cold waving-shampoos-different types and formulations- hair conditioners and setting lotions-hair straightening-curling.

Hair colorants- hair lighteners and bleaches-temporary- colorants-semi and permanent colorants-vegetable dyes-oxidation dyes and modifiers.

Unit 2. Face and body cosmetics (8 hrs)

Face powder-talcum powder-medicated powder-bleachers-facials-cold creams- sunscreen
lotions-SPF factor- formulation.

Deodorants-Antiperspirants-distinction between astringents and deodorants- formulation-
lotions-perfumes-formulation

Lipsticks-classification and formulation

Unit 3. Toiletries and cleansing agents (8 hrs)

Bath soap- bath powders – bath oils – water softeners-tooth pastes-ingredients-their characteristic functions-mouth washes-shaving creams-after shave preparations
Detergents- classification-formulation-cleansing action-optical brighteners-bleachers-phenols-black phenols, scented phenols.

Unit 4. Candle, Chalk and Crayons (8 hrs)

Candles-variety of candles-raw materials – machinery- method of candle making- Chalk – dust free chalk-crayons-machines and method

Unit 5. Inks and shoe polish (8 hrs)

Inks – types-blue, red, black, green and rubber stamp ink-composition-preparation
Shoe polish-basic ingredients-preparation method

***Note :**

Preparation of Face Powder, Tooth Power, Candle, Phenol, Soap & Detergents, Chalk, inks, and shoe polish will be given in the Laboratory.

References:

1. J.V.Simons, Science and Beauty Business Vol-1, Macmilan Education Ltd, 1989
2. B.K. Sharma, Industrial Chemistry, Goel publishing & Co, 1995.

CHS 1512

ORGANIC CHEMISTRY – I

CORE

5 credits

5 hours / week

This course is intended to concentrate on the IUPAC nomenclature, general concepts like resonance, inductive effect, reaction types & intermediates, basic introduction to stereochemistry of organic compounds, and the chemistry of alkanes, cycloalkanes, alkenes and alkynes.

Unit 1. IUPAC nomenclature of organic compounds (12 Hrs)

IUPAC Nomenclature- Rules for naming the organic compounds-alkanes-alkenes-alkynes-cyclic aliphatic hydrocarbons-alkyl halides-alcohols-ethers-aldehydes- ketones-carboxylic acids-acid derivatives-nitroalkanes-amines.

Common errors in writing IUPAC names.

Quantitative elemental analysis-estimation of carbon, hydrogen, nitrogen, halogen and oxygen-calculation of empirical formula and molecular formula.

Unit 2. Fundamentals of organic chemistry (12 Hrs)

Resonance-hyperconjugation-tautomerism- inductive and field effects-hydrogen bonding. Homolytic and heterolytic bond breaking-types of reagents-electrophile and nucleophiles-types of organic reactions-energy considerations.

Reactive intermediates-carbocations, carbanions, free radicals, carbenes, arynes and nitrenes (with examples)-Assigning formal charges on intermediates and other ionic species.

Purification methods-Chromatographic methods- paper, TLC, column - distillation-recrystallization techniques.

Unit 3. Stereochemistry (12 Hrs)

Concept of Isomerism-types of isomerism.

Optical isomerism-elements of symmetry-molecular chirality-enantiomers- stereogenic centres-optical activity-properties of enantiomers-chiral and achiral molecules with two stereogenic centres-diastereomers-threo and erythro diastereomers-meso compounds-resolution of enantiomers-inversion-retention-racemization-relative and absolute configuration-sequence rules-D/L, R/S systems of nomenclature.

Geometric isomerism-determination of configuration of geometric isomers-E&Z nomenclature-geometric isomerism in oximes and alicyclic compounds.

Conformational isomerism-conformational analysis of ethane and n-butane-Newmann projection-Sawhorse formulae-Fischer and flying wedge formula-conformations of cyclohexane-axial and equatorial bonds-conformation of mono and di substituted cyclohexane derivatives.

Differences between configuration and conformation.

Unit 4. Alkanes and cycloalkanes (12 Hrs)

IUPAC nomenclature of branched and unbranched alkanes-alkyl group-classification of carbon atoms in alkanes-Isomerism in alkanes-sources-methods of formation (with special reference to Wurtz reaction, Kolbe reaction, Corey-House reaction and decarboxylation of carboxylic acids)-physical properties and chemical reactions of alkanes-Mechanism of free radical halogenation of alkanes-orientation -reactivity and selectivity.

Cycloalkanes-nomenclature-methods of formation-chemical reactions-Baeyer's strain theory and its limitations-Ring strain in small rings (cyclopropane and cyclobutane)-theory of strainless rings-cyclopropane ring-banana bonds.

Fractions obtained from petroleum-methods of cracking-octane number-cetane number-synthetic petrol-petrochemicals.

Unit 5. Alkenes, Alkadienes and Alkynes (12 Hrs)

Nomenclature of alkenes-methods of formation-mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides, regioselectivity in alcohol dehydration-Saytzeff rule-Hofmann elimination-physical properties and relative stabilities of alkenes-Chemical reactions of alkenes-mechanism involved in hydrogenation- electrophilic and free radical additions-Markownikoff's rule- hydroboration-oxidation-oxymercuration-reduction-epoxidation-ozonolysis-hydration-hydroxylation and oxidation with KMnO_4 -polymerizations of alkenes-substitution at the allylic and vinylic position of alkenes-Industrial application of ethylene and propene.

Methods of formation-conformation and chemical reactions of cycloalkenes.

Nomenclature and classification of dienes-isolated-conjugated and cumulated dienes-structure of allenes and butadiene-methods of formation-polymerization-chemical reactions-1,2 & 1,4 (Michael addition) additions-Diel's Alder addition.

Nomenclature -structure and bonding alkynes-methods of formation-chemical reactions of alkynes-acidity of alkynes-mechanism of electrophilic and nucleophilic addition reactions-hydroboration-oxidation-metal ammonia reductions-oxidation- polymerization.

Reference:

1. B. Mehta & M. Mehta, Organic Chemistry, Prentice - Hall of India Private limited, 2007.
2. K. Jain and S.C. Sharma, Textbook of Organic Chemistry, Vishal publishing Co, 2007.
3. P.L. Soni and H.M. Chawla, Textbook of Organic Chemistry, Sultan Chand and Sons, 28th edition, 2007.

CHS 1514

INORGANIC CHEMISTRY-II

5 CREDITS

5Hrs /Week

UNIT - I: COVALENT BONDING (12Hrs)

Lewis theory- Sidgwick theory – sigma and pi bonds – variable covalency – VB theory and its limitations – types of hybridization and shapes of inorganic molecules and ions – VSEPR theory – regular and irregular geometries – MO theory – LCAO method – homo and hetero nuclear diatomic molecules – bond characteristics.

UNIT - II: IONIC BONDING(12Hrs)

Types of ionic solids – radius ratio rule – limiting radius ratios for coordination numbers 3, 4 and 6 – applications – limitations – close packing – ionic compounds of type AX, AX₂ – layer structure – lattice energy and Born Haber cycle – Born-Lande equation – solvation energy and solubility of ionic solids – polarizing power and polarisabilities of ions – Fajan's rule – imperfections in crystals.

UNIT - III: CHEMICAL FORCES (12Hrs)

Types of chemical forces – ion-dipole forces – dipole-dipole interaction – ion-induced dipole interaction – dipole-induced dipole interaction – London dispersion forces – Hydrogen bonding – types and consequences – applications.

THE NOBLE GASES

Occurrence – discovery – isolation of noble gases from atmosphere – physio-chemical method – physical properties of helium – compounds of xenon – fluorides – oxides – oxo fluorides – structures and shapes – uses of noble gases – clathrates.

UNIT - IV: BORON GROUP CHEMISTRY (12Hrs)

General characteristics – periodicity in group properties – diagonal relationship between boron and silicon – occurrence and uses of elements – comparative study of hydrides, oxides, hydroxides, trihalides – preparation and structure of borides – preparation, properties and structure of diborane – higher boranes and Wades rule – boron nitride – borazine – preparation, properties and uses of H₃BO₃

UNIT - V: CARBON GROUP CHEMISTRY (12Hrs)

General characteristics – catenation – unique character of carbon – comparison of carbon and silicon – Allotropy of carbon – diamond – graphite – fullerenes – grapheme – carbides – halides – oxides – silicates – classification – zeolites – ultramarines – silicone – glass – preparation properties and uses of freons, carborundum and lead pigments.

References:

1. B.R. Puri, L.R. Sharma and K.C. Kalia, Principles of Inorganic Chemistry, Milestone Publishers, 2012
2. J.D. Lee, Concise Inorganic Chemistry, Vedition., Chapman & Hall, 2000.
3. P.L. Soni., Mohan Katyal, A text book of Inorganic Chemistry, Sultan Chand & Sons, 2006.
4. W.U. Malik, G.D. Tuli and R.D. Madan, Selected topics in Inorganic Chemistry, S.Chand & Co. Ltd. 2004.
5. R. Gopalan, Inorganic Chemistry for Undergraduates, University Press (India) Pvt. Ltd., 2009
6. J.E.Huheey, Principles of Structure and Reactivity, IV Edn., Collins College Publishers 1993.

CHS 1332

ORGANIC ANALYSIS AND PREPARATIONS

3 credits

3 hrs/week

Analysis of an organic compound

- I. Elements present
- II. Saturated/ Unsaturated
- III. Aliphatic / Aromatic
- IV. Functional groups
 1. Carboxylic acids and phenols
 2. Aldehydes and ketones
 3. Esters
 4. Carbohydrates- sugar – reducing and non-reducing
 5. Amines
 6. Amides
 7. Anilides
 8. Nitro compounds
- V. Preparations of derivatives for some of these functional groups – recrystallization– melting point determination.
 1. Condensation (Oxime preparation)
 2. Bromination
 3. Hydrolysis of esters and amides
 4. Diazotization for amines and nitro compounds

MAJOR SUPPORTIVE

CHS 1426

CHEMISTRY FOR BIOCHEMIST – II
(Theory cum Lab Course)

4 credits

5 hrs/week

There will be two components in this course. Theory component deals with chemical kinetics, catalysis, spectroscopic techniques, stereo chemistry. It also deals with coordination chemistry and basic concepts of volumetric analysis. Lab component is to train the students to estimate volumetrically metal ions like iron, copper, calcium, zinc etc.

THEORY COMPONENT**[3hrs / week]****UNIT - I: Chemical Kinetics and Thermochemistry****(8 Hrs)**

Rate, order & molecularity of a reaction – rate equations – First, second and zero order reactions – half life time of a reaction – effect of temperature on reaction rate – activation energy – Arrhenius equation – enzyme catalysis – Michaelis-Menten hypothesis and its applications

Internal energy changes in chemical reaction – enthalpy of reaction at constant volume and at constant pressure – definitions with an example for enthalpy of combustion, neutralization, dissociation, formation – Hess's law and its applications – Bomb Calorimeter

UNIT – II: Concepts of Volumetric Analysis**(8 Hrs)**

General principle – types of titrations – requirements for titrimetric analysis – definition & problems on concentration terms: molarity, formality, normality, wt%, ppm, milliequivalence and millimoles – primary and secondary standards, criteria for primary standards – endpoint and equivalence point - theory of indicators – phenolphthalein, diphenylamine, EBT

UNIT - III: Co-ordination Chemistry**(8 Hrs)**

Coordination compounds – shapes of d- orbitals – Werner's theory – coordination number – types of ligands – nomenclature – concept of EAN – Paulings theory – CFT – CFSE – crystal field splitting in Octahedral field – spectrochemical series – chelation – application of complexes in qualitative, volumetric and gravimetric analysis

UNIT - IV: Stereochemistry**(8 Hrs)**

Stereochemistry and stereoisomerism – tetrahedral carbon – optical activity – plane polarized light – polarimeter – specific rotation – chiral centres – enantiomers and optical activity – specification of R and S configurations – diastereomers – meso structures – racemic modification – resolution – Geometrical isomers – E/Z nomenclature

UNIT - V: Basic spectroscopic techniques**(8 Hrs)**

UV spectroscopy techniques – Introduction, Principle and Applications to organic compounds & bioinorganic molecules viz., hemoglobin, cytochrome, chlorophyll

IR spectroscopy, NMR spectroscopy and Mass spectrometry techniques – Introduction, Principle and Applications to Organic compounds.

LAB COMPONENT**[2hrs / week]**

This course is intended for students to quantitatively estimate metal ions like iron, copper, calcium, zinc etc.

1. Estimation of Fe(II) – Permanganometry
2. Estimation of Fe(II) – Dichrometry/Internal Indicator
3. Estimation of Fe(II) – Dichrometry/External Indicator
4. Estimation of $K_2Cr_2O_7$ - Iodometry
5. Estimation of Cu(II) – Iodometry
6. Estimation of Zn(II) – Complexometry
7. Estimation of Ca(II) – Complexometry
8. Estimation of Hardness of Water

References:

1. R. Gopalan, S. Sundaram, Fundamentals of Chemistry, Sultan Chand & Sons, 1988
2. R. Gopalan, S. Sundaram, Allied Chemistry, Sultan Chand & Sons, 1993
3. R. Gopalan, Inorganic Chemistry for Undergraduates, Universities Press, 2009
4. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, Shobanlal Nagin Chand & Co, 1995.
5. B. S. Bahl, Arun Bahl, A Text Book of Organic Chemistry, S. Chand & Co., 1989
6. P. L. Soni, Textbook of Organic Chemistry, Sultan Chand & Sons, 1998
7. B. S. Bahl, Arun Bahl, A Text Book of Physical Chemistry, S. Chand & Co., 1989
8. B. R. Puri, L. R. Sharma, K. C. Kalia, Principles of Physical Chemistry, Shobanlal Nagin Chand & Co, 1998

CHS 1252

CHEMISTRY IN TODAY'S WORLD

NME-2
2 Credits
3 hrs/week

UNIT I Chemistry of water (8 Hrs)

Water- sources- impurities in natural water- air in water – Physical properties of water –DO – BOD – COD – Hardness and its disadvantages – softening of water – Potable water – purification of water- distillation–deionisation– reverse osmosis

Unit-II Industrial Chemistry (8 Hrs)

Paints, Varnishes, lacquers and adhesives- types - constituents- applications– Ceramics – glasses Inks- types–Printing inks- ingredients- additives- properties of inks– Basics of LED, LCD

Unit-III Clinical Chemistry (8 Hrs)

Composition of blood- normal values- blood pH- blood sugar- blood pressure- blood groups- presence of glucose in blood and urine – Cholesterol in urine - diabetes – types- glucose tolerance test-anaemia – ECG – MRI scan

Unit-IV Agricultural Chemistry (8 Hrs)

Fertilizer- classification – natural manures- organic manures- chemical fertilizers- biofertilizers- Effect of excess fertilization and manuring- agrochemicals- insecticide – herbicides- fungicides- rodenticide- nematicides

UNIT V Biological Chemistry (8 Hrs)

Vitamins -fat and water soluble -physiological functions- biological importance of minerals and trace elements – haemoglobin- function and poisoning- chlorophyll – antioxidants – metals in medicine – metal toxicity.

References

1. R. Gopalan and S. Sundaram, Fundamentals of Chemistry, Sultan Chand & Sons, 1998.
2. Ramnaik Sood, Medical laboratory techniques- Methods and interpretation- III edition, Jaypee brothers medical publishers, 1995.
3. B.N. Chakravarty, Industrial Chemistry, Oxford and IBH Publishing Co, New Delhi.
4. G. Mahapatra, Elements of Industrial Chemistry, Kalyani Publishers, New Delhi.
5. B.K. Sharma, Industrial Chemistry, Goel publishing & Co, 1995.

LS-2

CHS 1272

CHEMISTRY IN CRIME INVESTIGATION

2 credits
3 hours / week

Unit 1. Criminology and Forensic science (8 hrs)

Criminology- definition-nature and scope-types of crimes penology- Indian penal code- Indian evidence act-Indian criminal procedure code.

Forensic science- definition-principles and uses in crime investigation.

Unit 2. Finger prints & Tracks-Traces (8 hrs)

Finger prints-patterns-classification-uses of finger print in crime investigation-direct and latent prints-development by powders- other methods of development- transfer methods of finger prints.

Tracks -Traces-Foot prints-casting of foot prints- residue prints- walking pattern-tire marks-miscellaneous traces & tracks-glass fracture-tool marks-paints-fibres.

Units 3. Biological substances and poisons (8 hrs)

Blood-semen-saliva-sweat-urine-hair-skin-DNA analysis.

Poisons-types and classification-diagnosis of poisoning in the living and in the dead-clinical symptoms-post-mortem appearances-treatment in cases of poisoning- antidotes.

Unit 4. Arsons, explosives and Ballistics (8 hrs)

Natural fires and arson- nature of action of fire-drifts and air supply-burning characteristics.

Explosives-definition-classification-composition and mechanism of explosion-bombs.

Ballistics- classification- internal, external and terminal ballistics-small arms-classification and characteristics-laboratory examination of barrel washing and detection of powder residues by chemical tests.

Unit 5. Cyber crimes and documents (8 hrs)

Cyber crimes- crime through network

Documents-Chemistry of paper and ink-writing paper-carbon paper-chalk-adhesives-sealing waxes-different types of forged signatures-simulated and traced forgeries-inherent signs of forgery models-writing of forged models-writing deliberately modified-use of ultraviolet rays-comparison of type written letters-counterfeit of currency and coins

References:

1. Saferstein, R. (1978), Criminalities and introduction to Forensic Science, Prentice Hall of India.
2. James, T.H. (1987), Forensic Science.

DEPARTMENT OF BIOCHEMISTRY

B.Sc. Biochemistry UG Programme

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
1	I	XXXX	TAM/FRE/HIN	3	2	60	
	II	ENS 1201	Conversational Skills	3	2	60	
	III	Core	BCH 1431	Fundamentals of Biochemistry	4	4	100
			BCH 1533	Biomolecules	5	5	100
			BCH 1435	Biomolecules Lab	4	4	100
	Supportive	CHS 1425	Chemistry for Biochemist - I	5	4	100	
		IV	Non-Major Elective -1	BCH 1237	Wonders of Human Body	3	2
	Life skill-1	BCH 1239	Food Technology	3	2	60	
V	NSS/PED		Extension	-	-	-	
Total				30	25	640	
2	I	XXXX	TAM/FRE/HIN	3	2	60	
	II	ENS 1202	Reading & Writing Skills	3	2	60	
	III	Core	BCH 1432	Cell Biology & Genetics	4	4	100
			BCH 1534	Human Physiology	5	5	100
			BCH 1436	Cell Biology, Genetics & Human Physiology Lab	4	4	100
	Supportive	CHS 1426	Chemistry for Biochemist - II	5	4	100	
		IV	Non-Major Elective -2	BCH 1238	Medical Fitness and Health	3	2
	Life skill-2	BCH 1240	First Aid	3	2	60	
V	NSS/PED		Extension	-	-	-	
Total				30	25	640	
3	I	XXXX	TAM/FRE/HIN	3	2	60	
	II	ENS 2201	Study Skills	3	2	60	
	III	Core	BCH 2631	Metabolism	6	6	100
			BCH 2633	Enzymology	6	6	100
			BCH 2335	Nutritional Biochemistry	3	3	100
			BCH 2437	Metabolism, Enzymology & Nutritional Biochemistry Lab	4	4	100
	Supportive	BCH 2439	Immunology	5	4	100	
	V	NSS/PED		Extension	-	-	-
Total				30	27	620	

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks	
4	I	XXXX	TAM/FRE/HIN	3	2	60	
	II	ENS 2202	Career Skills	3	2	60	
	III	Core	BCH 2632	Medical Microbiology	6	6	100
			BCH 2634	Clinical Biochemistry	6	6	100
			BCH 2336	Cancer Biology	3	3	100
			BCH 2438	Medical Microbiology & Clinical Biochemistry Lab	4	4	100
		Supportive	BCH 2440	Hormones & Human Behaviour	5	4	100
V	NSS/PED		Extension	-	-	-	
Total				30	27	620	
5	III	Core	BCH 3631	Molecular Biology & Genetic Engineering	6	6	100
			BCH 3633	Analytical Techniques	6	6	100
			BCH 3635	Pharmacology & Toxicology	6	6	100
			BCH 3537	Molecular Biology & Analytical Techniques Lab	5	5	100
	IV	Life skill-3	BCH 3239	Forensic Science	3	2	60
	EVS	BCH 3241	Environmental Studies	4	2	60	
Total				30	27	520	
6	III	Core	BCH 3632	Plant Biochemistry	6	6	100
			BCH 3634	Protein Chemistry & Proteomics	6	6	100
			BCH 3636	Biostatistics	6	6	100
			BCH 3538	Project	5	5	100
	IV	Life skill-4	BCH 3240	Clinical Diagnostics	3	2	60
	VAL	VALxxxx		4	2	60	
Total				30	27	520	
Grand Total				180	158	3560	

Courses offered by Department of Biochemistry

Part-IV-Non-Major Elective

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks
1	IV	BCH 1237	Wonders of Human Body	3	2	60
2	IV	BCH 1238	Medical Fitness and Health	3	2	60
Total				6	4	120

Part-IV Life skill Courses

Sem	Part	Course No.	Course Title	Hr/wk	Credit	Marks
1	IV	BCH 1239	Food Technology	3	2	60
2	IV	BCH 1240	First Aid	3	2	60
5	IV	BCH 3239	Forensic Science	3	2	60
6	IV	BCH 3240	Clinical Diagnostics	3	2	60
Total				24	12	240

The objective of this course is to introduce the basic concepts of fundamentals of biochemistry. Students will be explored to units and measurements and preparation of solutions in biochemistry. It also inculcates in the students the concepts of pH and the importance of water in living systems. They will also be exposed to the concepts of biochemical bonding and forces involved in the structural formation and reaction of biomolecules.

Unit I – Introduction

Introduction to Biochemistry – definition, branches, scope, importance – concept of solute, solvent, mole fraction – types of solutions, normal, molar, dilute, concentrated, saturated, percent solutions – numerical problems – stock, working solutions – importance of w/v, v/v solutions.

Unit II – Water

Water as biological solvent – structure – physical and chemical properties of water – importance, composition of water in living organisms.

Basic principles, importance of osmosis – viscosity – adsorption – diffusion – simple, facilitated – concepts of density – specific gravity.

Unit III – Biochemical Bonds

Concepts of atoms, molecules and chemical bonds – their importance – ionic bonds, covalent bonds, dipole movement – weak chemical forces – hydrogen bond – inter and intra molecular hydrogen bonds, effects of hydrogen bonding, Van der Waals forces, electrophiles – nucleophiles.

Unit IV – Concepts of pH, pOH

Sorenson's pH scale – Henderson Hasselbalch equation – methods to determine pH- pH meter – pH measurements – buffer – buffer capacity – factors affecting buffering capacity – physiological buffers – types and importance – properties of acid and base – shapes of titration curves of strong and weak acids and bases – pKa values.

Unit V – Units of measurements

International system of units – definition of base units – decimal – multiple and submultiples of SI units – application of SI units – thrust areas in the use of SI units – conversion rules.

Learning Outcome:

The students gain an in-depth knowledge on the units and measurements, preparation of solutions, the structural and biological importance of water, pH and the forces that stabilize the structure of a molecule.

References:

1. Curl A. Burtis & Edward R, Ashwood (1999), Tietz Textbook of Clinical Chemistry, 3rd Edition, Harcourt Brace & Company Asia Pvt. Ltd., Philadelphia.
2. Harold Varley (2006), Practical Clinical Biochemistry 6th edition, CBS Publishers, New Delhi.
3. Deb A.C. (2001), Fundamentals of Biochemistry, 9th edition, New central book agency Pvt. Ltd., Kolkata. ISBN-13: 978-8173811449.

4. Rastogi S.C. (2010) Fundamentals of Biochemistry, 3rd edition, Tata McGraw Hill publications, Noida. ISBN: 9780070681750.
5. Donald Voet & Judith G. Voet (2011) Biochemistry 4th edition, John Wiley & Sons. New York. ISBN 13: 978-0470-91745-9.

BCH 1533

Biomolecules

5 Hrs/5Cr

This course provides an understanding of the biomolecules. It will emphasize the chemical structures and reactions of biological molecules. It also emphasizes the functions of the functional groups present in biomolecules. This course lays a fundamental to understand the advance topics in biochemistry.

Unit I- Carbohydrates

Introduction – classification – monosaccharide – structure – stereoisomers, structural isomers, mutarotation. Chemical reactions – different structures of glucose, fructose, galactose – oligosaccharides – structure and importance – disaccharides – sucrose, lactose, maltose, cellobiose – trisaccharides – rhamnose, raffinose – polysaccharides – homopolysaccharides – starch, glycogen, cellulose – heteropolysaccharides – mucopolysaccharide – heparin, chondroitin sulfate.

Unit II- Lipids

Introduction – classification – physical properties and chemical properties of lipids and fatty acids – saturated and unsaturated fatty acids, phospholipids and sterols – classification, structure and importance. Role of lipids in cell membrane.

Unit III- Proteins

Introduction – amino acids – classifications, structure and properties - reactions due to amino group, carboxyl group, side chain – protein – classifications, properties - primary, secondary, tertiary and quaternary structure. Biologically important peptides – denaturation, renaturation - behavior of proteins in solutions – salting in and salting out. Role of proteins in cell membrane.

Unit IV- Nucleic acids

Introduction, chemistry of nucleic acids – nucleosides, nucleotides – Chargaff's base pairing rule – DNA, RNA – types, structure – Watson and Crick model – properties and functions.

Unit V- Vitamins and Minerals

Introduction, classification – fat soluble and water soluble vitamins – structure, source, functions, daily requirements and deficiency - Macro minerals – Ca, P, Mg, Na, K, Cl and micro minerals/trace elements - Co, I, Fe, Mn, Zn, F – sources, daily requirements, functions and deficiency.

Learning Outcome:

The students are able to describe the structures and functions of biomolecules and their functional groups and lay a foundation to comprehend the other vital topics.

References:

1. Vasudevan DM, Sreekumari S, Kannan Vaidyanathan, (2013), Textbook of Biochemistry for Medical Students, 7th edition, Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi. ISBN: 9789350905302.
2. Chatterjee MN and Rana Shinde, (2012), Textbook of Medical Biochemistry, 8th edition Jaypee Brothers Medical Publishers, New Delhi.
3. Satyanarayana U (2007), Biochemistry 3rd edition. Book and Allied (P) Ltd. Kolkata. ISBN: 81-87134-80-1.
4. Lubert Stryer (1997), Biochemistry. 4th edition, W. H. Freeman and Company, New York
5. Lehninger A.L., David L. Nelson and Michael M. Cox (2008), Principles of Biochemistry 5th edition, W.H. Freeman Publishers, New York, ISBN: 0-716-7710-8.

BCH 1435**Biomolecules Lab****4 Hrs/4Cr**

This is an introductory level course designed to provide a broad based analysis of biomolecules. It will aid to get the students acquainted with the fundamental knowledge in preparation of solutions and reagents. General strategies for identification of biomolecules will be introduced with basic biochemistry lab techniques.

1. Preparation and numerical problems on normal, molar, percent solutions and dilutions
2. Analysis of carbohydrates – glucose, fructose, lactose, sucrose, starch
3. Analysis of amino acids – phenylalanine, tyrosine, tryptophan, cysteine, arginine
4. Test for proteins – albumin
5. Test for lipids – cholesterol
6. Starch from potato
7. Casein from milk
8. Lecithin from egg yolk
9. Reducing Sugar – Benedict's quantitative method
10. Amino acid – Formal titration
11. Determination of acid number, saponification number, iodine number.
12. Principle and use of pH meter
13. Measuring and adjusting pH of given sample – water, soft drinks
14. Preparation of different types of buffer solutions
15. Verify Beer-Lambert's law - colorimetric method.

Learning Outcome:

The students are able to prepare solutions of different normal, molar and percentage and analyze biomolecules form various sources.

References:

1. Jayaraman J. (2011), Laboratory Manual in Biochemistry, 5th edition, New Age International Publishers (P) Ltd., New Delhi. ISBN: 978-8122430493.
2. Sadasivam S, Manickam A, (1996), Biochemical Methods 2nd edition. New Age International Publishers, (P) Ltd., New Delhi. ISBN: 81-224-0976-8.
3. Harold Varley (2006), Practical Clinical Biochemistry, 6th edition. CBS Publishers. New Delhi.
4. David T Plummer (1988), An introduction to Practical Biochemistry, 3rd edition. Tata Mc Graw Hill Publishing Company Limited, ISBN: 978-0-07-099487-4.
5. Keith Wilson and John Walker, (2010), Principles and Techniques of Biochemistry and Molecular Biology. 7th edition. Cambridge University Press, UK, ISBN: 978-0-521-51635-8.

The course will give the students about the functional wonders in the human body. It emphasizes the happenings, when the body performing normal functions. The students are opened to innovative comparison of modern inventions with the human organs. The students are able to understand that human body is a chemical factory with various departments and regulations.

Unit I – Head

Functions of brain – skull – the safety locker – suture – coup and counter coup injury – uniqueness of brain cells – brain – a computer – brain – the mind and thinking – five senses of organs – eye function vs. camera functions – nose – ventilation system of our body – mouth – food intake and speech – hazards of tobacco chewers; ear – hear – skin – the largest organ – thermoregulation and irradiations.

Unit II – Chest and Spine

Lungs – inhalation and exhalation – ribs – expansion and contraction – vertebral column – erect posture – spinal cord – the reflex action – CSF – shock absorber.

Unit III – Stomach

Stomach – mucus – HCl – super fire in digestion – liver – mass organ – metabolism of foods, drugs, poison and defence – regenerative capacity – proliferation rate – small intestine – digestion – large intestine – digestion and excretion.

Unit IV – Wonders in Women

Puberty – menstruation – menopause – fertilization in uterus – changes in uterus during pregnancy – foetal development – stages – foetus-mother relationship – foetal feeding – amniotic fluid – Erythroblastosis Fetalis – child birth – mammary gland – formation of milk.

Unit V – Human Body – A Chemical Factory

Carbohydrates, proteins, fats, nucleic acids, vitamins and minerals – functions and importance – blood – blood vessels – cellular particles – inorganic, organic constituents – hormones in blood – metabolic intermediates – ATP – the chemical form of energy.

Learning Outcome:

The students are able recognize the few modern inventions based on the functions of vital human organs. They will wonder on the normal functions and the chemicals that are responsible to maintain the normal equilibrium in our body.

Reference:

1. Arthur C. Guyton and John E. Hall (2006), A Textbook of Medical Physiology, 11th edition, Elsevier Saunders Inc. ISBN: 0-7216-0240-1.
2. Sembulingam and Prema Sembulingam (2012), Essentials of medical physiology 6th edition. Jaypee Brothers Medical Publishers, New Delhi. ISBN-10: 9350259362.
3. Prakasam Reddy L, (2003) Fundamentals of Medical Physiology, 3rd edition, Paras Medical Publishers, Hyderabad. ISBN: 81-8191-016-8.
4. Gerald J. Tortora, Sandra Reynolds Grabbwiski (2004), Introduction to Human Body – The Essentials of Anatomy and Physiology, 6th edition. John Wiley and Sons. Inc, New York, ISBN: 0-471-222798.
5. Chatterjee C.C. (2002), Human Physiology, Vol I & II, Medical Allied Agency, Kolkata.

This course deals with the various substances used in food preparation and preservation. Special emphasis is given on the food adulterants, binders, colors, flavoring agents, artificial sweeteners, sequestering agents, emulsifying, stabilizing agents and antioxidants will be discussed. Students will be exposed to the methodology involved in the preparation of various food products in a simple way.

Unit I – Concepts of Food

Definition – basic concepts - nutritional and non - nutritional constituents of food - food quality – sensory evaluation – food safety – food adulteration and control of food quality.

Unit II – Cooking of Foods and Food additives

Definition - cooking media – changes in media – methods of cooking - shallow fry - deep fry - microwave oven – fireless – direct fire – steaming – roasting.

Food additives – definition – antioxidants – chelating – coloring – curing – ant caking – leavening – pH control and antifoaming agents - flavors – flour improvers – fumigants – nutrient supplements – non nutritive sweeteners – preservatives – stabilizers – thickeners – emulsifiers.

Unit III – Food Preservation and Processing

Food deterioration – preservation – processing by heat and cold – chill storage – deep freezing – drying – concentration – radiation and fermentation.

Unit IV – Preparation of Food Products

Beverages – preparation of coffee – tea – cocoa – soft drinks – fruit beverages – alcoholic beverages. Jams & Jellies – preparation – finishing – pickles preparation – storage.

Unit V – Preparation of Cereal, Milk Products & Confectionaries

Bread making – cakes – cookies – pastries and quick breads – milk processing – milk products – cream – butter – skim milk – ghee – ice cream – khoa – kheer – cheese preparation – milk substitutes – sugar boiled and chocolate confectionary.

Learning Outcome:

The students will be aware of the food quality and safety. They will have knowledge on preparation, processing and preservations of food materials.

References:

1. Sakuntala Manay, N. Shadakerswamy. M (2001), Foods, Facts and Principles 2nd edition, New Age international Private Limited, New Delhi.
2. Mahindru S. N. (2000), Food additives – Characteristics, Detection and Estimation, Tata McGraw Hill Publishing Company Limited, New Delhi.
3. Shirley J. Van Garde & Mory Woodburn (1999), Food Preservation and Safety Principles and Practice, Surabi Publications, Jaipur.
4. Francis Aylward (1999), Food Technology Processing and Laboratory Control, Allied Scientific Publishers, Bikaner, India.
5. William C. Frazier and Dennis C. Westhoff (1995), Food Microbiology, 4th edition, Tata McGraw Hill Publishing Company Limited, New Delhi.

This course is designed with an aim to understand the cellular processes and the principles of heredity. This course approaches the students with a conceptual framework for dealing with our evolving understanding of the cell. The students will be able to understand the genetic changes in population during evolution.

Unit I – Basics of Cell Biology

Cell – definition, discovery, history–cell theory – structure, properties, function – prokaryotic and eukaryotic cell – relative sizes of cell and cell components– microscopy.

Unit II – Cell Membrane and Cell Organelles

Cell membrane – definition – molecular models – fluid mosaic and other models – membrane fluidity – chemical components - lipids, proteins and carbohydrate – membrane transport – osmosis, simple diffusion – membrane functions – cell organelles – nucleoid, nucleus, mitochondria, golgi bodies, lysosomes, endoplasmic reticulum, peroxisome, vacuoles – chloroplast – structure and function.

Unit III – Cell Cycle and Cell Division

Cell cycle – definition – stages – cell division – mitosis, meiosis – definition, stages, genetic recombination during meiosis – control – role of protein kinases – regulation – cyclin concentration – cell – cell interaction – cell adhesion – apoptosis.

Unit IV – Mendelian Principles and its Extension

Mendelian principles of inheritance – breeding experiments – phenotype – genotype – gene interaction – epistasis – codominance – role of environment – linkage and crossing over – sex-linked, limited, influenced inheritance – linkage map and recombination – extra chromosomal inheritance – mutations – study of quantitative traits.

Unit V – Population Genetics and Chromosomal Aberrations

Hardy Weinberg law – factors affecting gene frequency – structural and numerical alteration of chromosome – deletion, duplication, inversion, translocation, ploidy and their genetic implications.

Learning Outcome:

The students are able to differentiate the eukaryotic and prokaryotic cells; they will have knowledge on the microscopy, components of a cell, cell cycle, division of cell and also their communications. Also they have a clear idea of Mendelian principles and population genetics.

References:

1. Gerald Karp (2003), Cell and Molecular Biology – Concepts and Experiments, 3rd edition, John Wiley and Sons. Inc., New York, ISBN: 0-471-26890-9.
2. Harvey Lodish, Arnold Berk, Paul Matsudaira, Chris A. Kaiser, Monty Krieger, Mathew P. Scott, S. Lawrence Zipursky and James Darnell (2004), Molecular Cell Biology, 5th edition W.H. Freeman and Company. New York, ISBN: 0-7167-4366-3.
3. Lewis J. Kleinsmith, Valerie M. Kish (1995), Principles of Cell and Molecular Biology, 2nd edition, Harper Collins College Publishers, New York. ISBN: 0-06-500404-3.
4. Monroe W. Strickberger (2003), Genetics 3rd edition, Prentice Hall of India Pvt. Ltd., New Delhi, ISBN: 81-203-0949-9.
5. Peter J. Russell (1998), Genetics 5th edition, The Benjamin Cummings Publishing company Inc., Canada. ISBN: 0-321-00038-2.

BCH 1534**Human Physiology****5 Hrs/5Cr**

This course is designed to provide students with the fundamental mechanisms underlying normal functioning of cells, tissues, organs, and organ systems of the human body. This course addresses the students with the basic mechanisms of homeostasis by integrating the functions of cells, tissues, organs, and organ systems. Students will be explored to acquire complete understanding of human physiology that is fundamental to the courses in biochemistry, where the students will demonstrate competence and the familiarity with various organ systems.

Unit I – Fundamentals of Human Physiology

Overview of human anatomy – levels of organization – physiological systems - integumentary system – homeostasis – fluid compartment – structure and functions of glands – exocrine & endocrine glands.

Unit II - Digestive system

Introduction – organs of digestive system - movements of food in gastrointestinal tract – mastication – deglutition – digestion – absorption – carbohydrate, protein, fat, water and electrolytes - assimilation – enzymes and hormones of digestive tract – regulation of GIT.

Unit III – Respiratory and Cardiovascular system

Introduction – organs of respiration – structure & function - gas exchange – respiratory volume and capacity - factors affecting gas exchange – high altitude and deep sea physiology – regulation.

Introduction – organs of cardiovascular system – heart – structure – functions – blood vessels – types – cardiac cycle – cardiac impulse – ECG – blood pressure - components of blood – functions – erythropoiesis – hematopoiesis. – clotting.

Unit IV – Neuro-Muscular system

Introduction – organs of nervous system - structure – function – CNS – neurons – reflexes, transmission of nerve impulse synapse – neurotransmitters – CSF – special senses - vision, hearing, pain, smell, taste, thermoregulation - higher functions - learning, memory. Musculoskeletal system – types of muscles – contraction- relaxation of skeletal muscles – Neuromuscular junctions.

Unit V – Excretory and Reproductive system

Structure – function – kidney – nephron – juxtaglomerular apparatus – mechanism of urine formation – micturition – diuretics.

Male reproductive system – structure - spermatogenesis – hormonal control – female reproductive system – structure - oogenesis – menstrual cycle – pregnancy – parturition – lactation – hormonal regulation.

Learning Outcome:

The students will be equipped to relate the structure and function of the various systems of the human body to normal physiological processes.

References:

1. Arthur C. Guyton and John E. Hall (2006), A Textbook of Medical Physiology, 11th edition, Elsevier Saunders Inc. New York. ISBN: 0-7216-0240-1.
2. Sembulingam and Prema Sembulingam (2012), Essentials of Medical Physiology 6th edition. Jaypee Brothers Medical Publishers, New Delhi. ISBN-10: 9350259362.
3. Prakasam Reddy L (2003), Fundamentals of Medical Physiology, 3rd edition, Paras Medical Publishers, Hyderabad, ISBN: 81-8191-016-8.
4. Gerald J. Tortora, Sandra Reynolds Grabbwiski (2004), Introduction to Human Body – The Essentials of Anatomy and Physiology. 6th edition. John Wiley and Sons. Inc, ISBN: 0-471-222798.
5. Chatterjee C.C. (2002), Human Physiology, Vol. I & II, Medical Allied Agency, Kolkata.

BCH 1436**Cell Biology, Genetics & Human Physiology Lab****4 Hrs/4Cr**

In haematological analysis, students will be trained in collection of blood specimen, identifying blood groups, determination of RBC, WBC and ESR. Students will also be trained in exercise on cytological observation of different stages of cell division and isolation of cellular organelles.

1. Analysis of the various stages of mitosis and meiosis in the root tips of onion.
2. Observation of cell plasmolysis – onion peeling and notonia leaf peeling
3. Isolation of mitochondria from liver.
4. Isolation of chloroplast from leaves.
5. Visualization of lampbrush chromosome.
6. Solving problems on Mendelian ratios – monohybrid, dihybrid cross.
7. Test for Hardy Weinberg equilibrium.
8. Determination of blood pressure using Sphygmomanometer under normal, light exercise and heavy exercise.
9. Determination of ESR and blood grouping and Rh typing.
10. Estimation of hemoglobin by Sahli's method.
11. Determination of bleeding time and clotting time.
12. Preparation and examination of blood smear.
13. Enumeration of RBC - Hemocytometry.
14. Determination of differential WBC count – Hemocytometry.
15. Detecting the pathway of color vision using Ishihara chart.
16. Hearing test – Tuning Fork Test – Rinne's test & Weber's Test.

Learning Outcome:

Students will acquire and demonstrate competency in routine and specialized cell biology, genetics and basic human physiology skills.

References:

1. Geoffrey M. Cooper (1997), The Cell – A molecular Approach, ASM publications, Washington.
2. Santra S.C. Chatterjee T.P. Das A.P. (1989), College Botany Practical – Volume I, New Central Book Agency, Kolkata.
3. Jayaraman J. (2011), Laboratory Manual in Biochemistry, 5th edition, New Age International Publishers (P) Ltd., New Delhi. ISBN: 978-8122430493.
4. Pal G K, Pravathi Pal (2010), Text book of practical physiology, 3rd edition, Unversity press, Hyderabad, ISBN: 978-81-7371-671-3.
5. Jacques Wallach (2007), Interpretation of diagnostic tests, 8th edition, Lippincott William & Wilkins, Philadelphia, ISBN-13: 978-0-7817-3055-6.

The course introduces the various systems in human body and aims to innovative approach of physical and mental fitness in the daily life. The students are able to identify social responsibility to maintain their body and mind in a smart way in their daily life. They are also introduced to master health check up that is done to be medically fit.

Unit I: Overview of Human Systems

Introduction to CNS – digestive system – respiratory system – circulatory system – muscular system - Physiology of learning and memory.

Unit II: Introduction to Physical Fitness

Introduction – physical development – social construction of the human body – healthy eating, exercise – challenges – importance of human body for self, social identity – benefits.

Unit III: Mental Fitness

Correlation of food, exercise and rest – stress management – mental and emotional development. Mind – body connections – tips for mental fitness – skill learning and performance – theoretical concepts – practical situation – benefits.

Unit IV – Fitness and Health

Fitness and health – critical relationships – dominance of body & mind in health – modification – analyzing factors – skill acquisition, psychology – personality development – employing strategies – performance.

Unit V: Physical Tests and Master Health Check up

Physical Tests – BMI, eye power, ENT, dental, ECG, chest X-ray – master health check up - biochemical tests, hormonal analysis, electrolytes – urine analysis, hematology tests – blood grouping, blood pressure, bone density, stool analysis – special tests for Diabetes mellitus, heart diseases, HIV, Hepatitis, pap test, gynaecological tests.

Learning Outcome:

The students are able to understand the essentials of physical fitness, mental fitness to maintain body. The students are well versed with the relationship between body, mind and health and the importance of being fit.

References:

1. Sembulingam and Prema Sembulingam (2012), Essentials of medical physiology 6th edition, Jaypee brothers medical publishers, New Delhi. ISBN-10: 9350259362.
2. Harold Varley (2006), Practical Clinical Biochemistry 6th edition. CBS Publishers, New Delhi.
3. Jim Loehr, Tony Schwartz (2005), The Power of Full Engagement - Managing Energy, Not Time, Is the Key to High Performance and Personal Renewal. Simon & Schuster, London, ISBN13: 9780743226752.
4. John Kabat-Zinn, M.D. (1990) Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness. Delta Publishers, Illinois, ISBN-13: 978-0385303125.
5. Ted Polhemus (1978), The Body Reader: Social Aspects of the Human Body, Pantheon Books, New York, ISBN 0-394-48792-3.

BCH 1240**First Aid****3 Hrs/2Cr**

The course is designed to introduce the students on basics of life saving first aid and its safety principles during emergencies and other situations. The students will be prepared to make appropriate decisions regarding first aid care, and how to provide care for injuries or sudden illness in sustaining the life of the victims and minimizing the consequences of injury, relieving pain or sudden collapse until professional help arrives. First aid emergency action principles through demonstrations by professionals first aid trainers from St. John's Ambulance will provide practical knowledge and exposure to the students.

Unit I – Basic Concepts of First aid

Definition – ABC rule – emergency action principles – emergency management systems – spot analysis - primary assessment - secondary assessment - emergency moves (Medivac) – legal awareness & responsibilities of first aid – first aid kit.

Unit II- Minor Emergencies

First aid - accident care - wounds & bleeding - burns – hypothermia/hyperthermia - dehydration – electric shock – allergies – bites and stings – sprains – cramps – eye injuries – pain –air way obstructions - breathing emergencies – choking.

Unit III - Major Emergencies

First aid - head injury – concussion – cerebral compression – spinal injuries – chest injury – angina - heart attack – CPR – AED – stroke – epilepsy – fractures - dislocations – splinting - suicide emergencies- drowning- cold shock – bleeding – unconsciousness – levels of response (AVPU scale) – soft tissue injuries – poisoning.

Unit IV – First Aid in Special conditions

Special care and first aid for infants, children's and aged persons – first aid in pregnancy- diabetic emergency – Weil's disease – Marine stings – fish hooks for divers – disaster emergencies – management - do's & don'ts.

Unit V – Certification and Organizations

First aid training methods – Hand on training demonstrations - volunteers - Youth Red Cross – management measures – guidelines of first aid – role of government and voluntary organizations – National and International organizations – Red Cross – Red Crescent & St. John Ambulance Association.

Learning Outcome:

The students learn how to assess a victim during a medical emergency and to determine what care would be appropriate.. They will be equipped to perform CPR, AED, manage breathing emergencies, manage soft tissue injuries and bleeding, musculoskeletal injuries. They have a clear idea on National and International Agencies organizing first aid.

References:

1. Alton L. Thygerson, (2006), First Aid, 5th edition, Jones Bartlett Publishers, London ISBN: 07-637-4244-9.
2. Jon R. Kroner (2004), First Aid Manual, 2nd edition. D.K. Publications, London, ISBN: 07 -566 -0195-9.
3. Doring Kindersley (2002), First Aid Manual 9th edition, A publication of St. John Ambulance & British Red Cross Society, ISBN: 07-5136- 9438.
4. Kathleen Handel (1992), The American Red Cross First Aid Safety Hand book, Little brown, United Kingdom, ISBN 03 -167-3646-5.
5. First Aid to the injured (2009), 5th edition, St. John Ambulance, New Delhi.

The course intends to introduce the students to the metabolic pathways. A deeper insight into the various metabolic pathways of biomolecules and their inter relations and the factors involved in the regulations of these pathways will be gained.

Unit I – Overview of Metabolism:

Definition – stages – types – overview of digestion and absorption of carbohydrate, lipids and proteins – low energy and high energy compounds – electron transport chain – oxidative and substrate level phosphorylation – importance of mitochondria and ATP synthesis

Unit II – Carbohydrate Metabolism

Introduction, sequence, reactions, energetics and regulation – glycolysis, Pyruvate dehydrogenase complex, Kreb's cycle, Cori's cycle, gluconeogenesis, glycogen metabolism, HMP shunt pathway, fructose and galactose metabolism.

Unit III – Lipid Metabolism

Introduction, sequence, reactions and regulation – saturates and unsaturated fatty acids – biosynthesis of fatty acids – oxidation of even chain and odd chain fatty acids – biosynthesis of cholesterol – synthesis of compound lipids – functions of lipoproteins – synthesis of phospholipids, triglycerides – metabolism of ketone bodies.

Unit IV – Amino acid Metabolism

Introduction – biosynthesis and catabolism of amino acids – tyrosine, tryptophan, phenyl alanine, cysteine, glutamic acid, histidine – one carbon metabolism – importance of creatinine, S-Adenosyl Methionine & peptide hormonal synthesis – formation and disposal of ammonia – urea cycle – introduction to anti oxidants, free radical scavenging – Glutathione reductase, Super oxide dismutase, Hydrogen peroxidase.
Integration of carbohydrate, lipid and protein metabolism.

Unit V – Nucleotide Metabolism

Purines and pyrimidines – sources of the atoms – De novo biosynthesis – salvage pathways – degradation and regulation – biosynthesis and breakdown of heme – porphyrias – types.

Learning Outcome:

The students are well versed with major metabolic pathways, the energy yielding and consuming pathways with their regulations.

References:

1. Satyanarayana U (2007), Biochemistry 3rd edition. Book and Allied (P) Ltd. Kolkata. 81-87134-80-1
2. Lubert Stryer. (1997), Biochemistry, 4th edition, W. H. Freeman and Company, New York
3. Christopher K. Mathews, K.E. Van Hole, Kevin G. Ahern (2003), Biochemistry 3rd edition. Pearson Education, Singapore.
4. Robert K. Murray, Robert K. Murray, Peter A. Mayes, Victor W. Rodwell (2003), Harper's Illustrated Biochemistry, 26th edition. Lange Medical Books/McGraw-Hill medical publications division. New Delhi, ISSN 1043-9811.
5. Donald Voet & Judith G. Voet (2011), Biochemistry 4th edition. John Wiley & Sons. New York. ISBN 13: 978-0470-91745-9.

The objective of the course is to highlight the importance of enzymes and its mechanism in life process. The students will be explored with the knowledge towards enzyme specificity and kinetics involved in various biochemical events taking place in the life. Special emphasis is given to mechanism of enzyme action and biosensors playing a role in vital conditions. The impact of immobilized enzymes and methods of immobilization is dealt to expound the student's knowledge towards recent advancements. It will highlight the students the applications of enzymes in various fields of biology.

Unit I – Fundamentals of Enzymology

History of Enzymology, advantages of enzymes over chemical catalysts – nomenclature - classification – general characterization – functions – enzyme isolation – purification methods - estimation of enzyme activity, enzyme units, need for enzyme purification.

Unit II – Enzyme Catalysis

Active site, isoenzymes, substrate, product, holoenzyme, apoenzyme, cofactor, coenzyme, prosthetic group, ribozymes and abzymes, monomeric and oligomeric enzymes, multienzyme complex - enzyme specificity, enzyme catalysis – metal ion catalysis, covalent catalysis - regulatory enzymes – covalent modification, allosteric enzymes

Unit III - Enzyme kinetics

Enzyme kinetics, introduction to Chemical kinetics, enzyme catalyzed reaction, Michaeli's - Menten equation, V_{max} , K_m and its significance, LB plot, Eadie - Hofstee plot, factors affecting enzyme activity, turn over number.

Unit IV - Mechanism of action

Mechanism of action – lysozyme, chymotrypsin, ribonuclease, carboxypeptidase - enzyme inhibition – types – competitive, uncompetitive, noncompetitive, mixed, feedback – biosensors – glucose oxidase, cholesterol oxidase, urease and antibodies.

Unit V- Immobilized enzymes and Applications

Immobilized enzymes – methods of immobilization – Ionic bonding, adsorption, covalent bonding, microencapsulation and Gel entrapment

Applications of Enzymes in medicine, textile, leather, detergent, paper, dairy industry, beverage industry, food processing and clinical diagnosis.

Learning Outcome:

The students are able to make clear enzymes, their catalysis and the factors influencing the rate of an enzyme-catalyzed reaction. They also will be aware of immobilized enzymes, their importance and applications.

References:

1. Dr. P. Asokan (2003), Enzymes, 1st edition Chinna Publications, Vellore.
2. Trevor Palmer (2004), Enzymes – Biochemistry, Biotechnology & Clinical Biochemistry, Affiliated East – West Press Pvt. Ltd, New Delhi.
3. Dixon, M., and Webb, E. C. (1979) Enzymes, 3rd edition, Longmans, Green & Co., London, and Academic Press, New York.
4. Nicolas C Price and Lewis Stevens (1999), Fundamentals of Enzymology, Oxford University Press, New York.
5. David L. Nelson, Michael M. Cox, (2005), Lehninger Principles of Biochemistry, 4th edition, W. H. Freeman & Company, New York.

BCH 2335

Nutritional Biochemistry

3 Hrs/3Cr

This course will foster understanding on the basis of nutrition and the effects of varied nutrition and diet on health. The allergic effects of specific foods will be elaborated along with awareness on future functional foods and nutritional supplements. Healthy life style and ethical principles in nutrition will be emphasized.

Unit I - Introduction to Nutrition

Definition of nutrition - Food as source of nutrients - classification and function - BMR - measurement - factors affecting BMR - balanced diet - malnutrition - under nutrition - water and electrolyte balance

Unit II - Nutritive value of foods

Calorific value of foods - requirements - nutritional aspects - Bomb calorimeter - protein factors - quality of proteins - classification - protein deficiency - PEM - role of lipids - vitamin - minerals - dietary fibers in diet - nutritive value of common foods - milk - egg - meat - fish - pulses - legumes - coconut - green leafy vegetables

Unit III - Nutritional requirement

Nutrition at various stages of growth and development - infants - children - adolescent - pregnant women - lactating mother - aged people - Energy requirements of men and women - factors affecting energy requirements

Unit IV - Disease Management and Food Allergy

Role of diet & nutrition in prevention & management of diseases: Diabetes mellitus, hypertension, ulcer, anemia, dental caries, myocardial infarction & rheumatic disorders. Food allergy- definition - allergen- classification - types - pea nuts, brinjal, fish, snake guard, yam, wheat - specific and multiple food allergies- food sensitive enteropathy.

Unit V - Nutritional Assessment

Definition - RDA - methods of assessments - clinical, biophysical, biochemical - National and International organization - WHO, ICMR, WFP, FAO, PAHO - recommendation

Learning Outcome:

The students gain an in-depth knowledge on the nutritional value of foods, nutritional impairments, food allergy and methods of assessments of nutritional status.

References:

1. Swaminathan. M (2014), Advanced Textbook on Food and Nutrition, 2nd edition, volume 2, The Bangalore Printing and Publishing Company, Bangalore.
2. Srilakshmi. B, (2001), Dietetics, 3rd edition, New Age International Pvt. Ltd. Publishers, New Delhi. ISBN: 81- 224- 1252- 1
3. Anderson, L.,(1982) Nutrition in health and disease, 17th ed. Lippincott Co. Philadelphia ISBN: 9780397542826
4. Ramakrishana. S and Venkat Rao. S, (1995), Nutritional Biochemistry, T.R Publications Pvt., Madras. ISBN: 81- 85427- 35 - 6
5. Gupta L.C, Kusum Gupta and Abhishek Gupta 2006, Food and Nutrition - Facts and figures, 6th edition, Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi. ISBN: 81- 8061- 571-5

BCH 2437 Metabolism, Enzymology and Nutritional Biochemistry Lab**4 Hrs/4Cr**

The lab course aims at giving a practical knowledge on the activity of important enzymes and their effect on various parameters. This course also gives a practical knowledge and hands on experience in cellular studies and the various metabolic products present in fruits.

- 1) Assay of salivary amylase activity.
- 2) Study of effect of pH on enzyme activity.
- 3) Study of effect of temperature on enzyme activity.
- 4) Estimation of amino acid by ninhydrin method.
- 5) Assay of urease activity.
- 6) Assay of catalase activity.
- 7) Titration curve of glycine and determination of pKa value.
- 8) Estimation of iron from apple juice by phenanthrone method.
- 9) Estimation of ascorbic acid by 2,4-dichlorophenol indophenol method.
- 10) Determination of SGOT/SGPT activity.
- 11) Estimation of phenolic compounds from fruits.
- 12) Estimation of inorganic phosphate – Fiske Subbarow method.
- 13) Calculation of BMI
- 14) Estimation of ash content, moisture content, fibre content.
- 15) Assay of vitamin A – Spectrophotometric method.

Learning outcome:

The students know to determine the enzyme activity, estimate the major food components from food sources.

References:

1. Jayaraman J. – Laboratory Manual in Biochemistry (2011). 5th edition. New Age International Publishers P Ltd., New Delhi. ISBN: 978-8122430493.
2. Sadasivam S, Manickam A – Biochemical Methods (1996). Revised 2nd edition. New Age International Publishers, P Ltd. New Delhi. ISBN: 81-224-0976-8.
3. Keith Wilson and John Walker (editors) – Principles and Techniques of Biochemistry and Molecular Biology. (2010) 7th edition. Cambridge University Press. ISBN 978-0-521-51635-8.
4. David T Plummer – An introduction to practical Biochemistry. (1988) 3rd edition. Tata Mc Graw Hill Publishing Company Limited. ISBN:978-0-07-099487-4.
5. Harold Varley. Practical Clinical Biochemistry (2006) 6th edition. CBS Publishers. New Delhi.

BCH 2439**Immunology****5 Hrs/4Cr**

This course provides a comprehensive coverage of the essential concepts of understanding of cellular and molecular events underlying immunity. This deals with cells and organs of immune system, antigen, and antibody structure and diversity of antigen antibody interactions. Its also includes major histocompatibility complexes, and complement, clinical aspects such as hypersensitivity, autoimmunity disorders of immune response, transfusion and transplantation immunology are also dealt with. Basic concepts and principles on the evolution of immunity also form part of the course.

Unit I – Fundamentals of Immune System

Definition - cells of immune system - lymphoid cells - T and B cells – mononuclear cells- granulocytes – mast cells – dendritic cells - types of immunity – innate – acquired immunity – immunization - vaccines - lymphoid organs – primary lymphoid organs – thymus, spleen, lymph nodes, tonsils – secondary lymphoid organs – MALT, GALT – factors influence immunogenicity – immune response – primary & secondary.

Unit II –Antigen and Antibody

Antigen- definition – isotypic, allotypic and idiotypic variations – antigen presentation – haptens – affinity – avidity – precipitation and agglutination reactions – antigen – antibody interactions.

Antibody – definition – structure – classification – biological activities – antigenic determinants - functions of immunoglobulins.

Unit III – Major Histocompatibility and Complement System

General organization and inheritance of the MHC molecules and genes – MHC and susceptibility activation of CD^{4+} T cells – B cell activation – activation of CD^{8+} cells – super antigens – T independent B cell activation – cytokines - complement system – classical and alternative pathways – complement fixation test – complement deficiency.

Unit IV – Autoimmunity and disorders of the immune response

Organ specific and systemic autoimmune diseases – mechanism for induction of autoimmunity – treatment -systemic lupus erythematosus, rheumatoid arthritis – sjogren syndrome – polyarteritis nodosa – primary immunodeficiency – secondary immunodeficiency – AIDS – autoimmunization.

Unit V – Hypersensitivity Reactions

Gell - Coombs classification – IgE mediated – Type-I hypersensitivity – components, mechanism, regulation of Type-I response – antibody mediated cytotoxic – Type-II hypersensitivity – transfusion reactions – immune complex mediated – Type-III hypersensitivity reactions – DTH mediated – Type-IV hypersensitivity reactions – stimulatory – Type-V hypersensitivity.

Learning Outcome:

The students have a detailed understanding of the lymphnode and the role of B and T cells that encounter antigens, acquaintance with antigen-antibody reactions, major histocompatibility complex and disorders of immune response and on hypersensitivity.

References

1. Janis Kuby, Goldsby RA Kindt , BA Osborne, (2006), Immunology 6th edition W.H Freeman and Company, New York, ISBN: 1-4292-0211-4.
2. Coico R, Sunshine G. (2000), Immunology: A Short course, 6th edition, John Willey and Sons, Inc, Publications, New York, ISBN: 976 -0-470-08158-7.
3. Roitt, I, Brosstoff, J, Male D (2002), Immunology 8th edition, Blackwell Science Publishers, Berlin.
4. Ellie Benjamini, G Sunshine, S. Leskowitz (1996) Immunology- A short course 4th edition Wiley Liss New York.
5. Tizard (1995) Immunology 4th edition Saunders College Publishing, Philadelphia.

The objective of the course is to provide students with an understanding of the basic concepts and skills relating to infectious diseases and the etiological agents contributing to the diseases. The students will be introduced to medically important bacteria, viruses, parasites and fungi and its disease causing capabilities and prevention. The relationship between vectors and pathogens in causing diseases will be explored. The core concepts of integrated disease management and newer techniques and biological standardization in the field of medical microbiology will inculcate the students with advanced knowledge.

Unit I – Basic Microbiology

Definition – history and scope – contributions of eminent microbiologists – nomenclature - classification of microorganism – physical and chemical methods of sterilization – nutrition & growth curve – microscopy – cultural and morphological characteristics – normal flora of human body – pathogens - host-parasite relationship.

Unit II – Bacteriology

General properties – structure – classification - epidemiology – pathogenesis - diseases – laboratory diagnosis – prevention and control measures of medically important bacteria – Staphylococcus, Streptococcus, Neisseria, Clostridium, Bacillus, Vibrio, Escherichia, Salmonella, Shigella, Mycobacteria, Spirochetes.

Unit III – Virology

General properties – structure – classification – epidemiology, pathogenesis and cytopathology – disease - laboratory diagnosis – treatment - prevention and control of DNA viruses – pox, herpes, adeno, hepatitis, papilloma - RNA viruses - polio, influenza, rabies, HIV, viroids & prions.

Unit IV – Parasitology and Mycology

General properties- structure and classification – pathogenesis - clinical features – diagnosis – treatment - prevention and control - Entamoeba, Leishmania, Trypanosoma, Plasmodia - Taenia, - Schistosoma, - Trichuris, Ascaris, filarial worms.

Fungi - general properties – structure – classification - reproduction - pathogenesis – clinical features – diagnosis – treatment – prevention and control – dermatophytes, Candida, Aspergillus, Rhizopus, Mucor, dimorphic fungi, mycetoma, mycotoxicosis.

Unit V – Integrated Disease Management

Epidemiology of infectious disease - nosocomial infections – vectors & zoonotic diseases - Infections of organs and systems of human body – disease cycle – infectious disease management - chemoprophylaxis – immunoprophylaxis - animal and human ethics in microbiological work - automation in microbiology - biological standardization - quality control – Role of ICMR – WHO.

Learning Outcome:

The students are able to describe the diversity of microorganisms, bacterial cell structure and function and microbial growth. Students gain the knowledge of the various pathogenic bacteria, virus, parasites and fungus and their disease management.

References:

1. Murray, Rosenthal, and P Faller (2005), Medical Microbiology, 5th edition, Elsevier-Mosby, USA, ISBN: 0-323-03303-2.
2. Green-wood, Slack, and Peutherer (2002), Medical Microbiology - A Guide to Microbial Infections: Pathogenesis, Immunity, Laboratory Diagnosis, and Control, 16th edition, Churchill Livingstone, ISBN: 0443-07077-6.
3. Mims, Dockrell, Goering, Roitt, Wakelin, and Zuckerman (2004), Medical Microbiology, 3rd edition, Elsevier-Mosby, USA, ISBN: 0-7234-3259-7.
4. Levinson and Jawetz (2002), Medical Microbiology & Immunology, 7th edition, Lange Medical Books/Mc Graw Hill, Ohio, USA.
5. Lansing M. Prescott (1996), Microbiology, 3rd Edition, William. C. Brown Publishers, USA, ISBN: 0-697-29390.

BCH 2634

Clinical Biochemistry

6 Hrs/6Cr

This course discusses on the fundamental principles of clinical chemistry and will provide an appreciation of the biochemical and physiological factors involved in the maintenance and alteration of organ and tissue function. The primary goal of the course is to teach certain common metabolic disorders. It also amalgamates disorders of carbohydrates, amino acids, lipids and nucleic acid metabolisms and their biochemistry. Special emphasis is given on the conventional biochemical tests carried out for the diagnosis of the disorders.

Unit I- Concepts of Clinical Biochemistry

Basic concepts of clinical biochemistry – scope – historical perspectives and discoveries – units and measurements – normal ranges – clinical samples – collection – handling – transport – testing – preservation - blood, urine, CSF - organ function test – liver, kidney.

Unit II – Disorders of Carbohydrate metabolism and Hematological Disorders

Glucose homeostasis - diabetes mellitus – glycosuria – obesity – GTT – inborn errors – galactosuria – pentosuria – glycogen storage diseases – abnormal hemolytic states – anemia – thalassemia - haemophilia – thrombosis – thrombocytopenia – jaundice.

Unit III – Disorders of Lipid metabolism

Triglyceride, phospholipid and cholesterol metabolic disorders – Fatty liver – atherosclerosis - myocardial infarction - lipoproteinemias – inborn errors – Tay-Sach's disease, Niemann-Pick's Diseases, Faber's disease and Gaucher's disease - diagnosis - lipid profile – biosensors.

Unit IV – Disorders of Protein, amino acids and Nucleic acid metabolism

Disorders of plasma proteins – disorders of urea cycle- disorders of creatinine – ammonia and porphyrias – inborn errors- phenylalanemia – tyrosinemia, maple syrup disease, phenylketonuria, alkaptonuria, albinism, Hartnup's disease.

Disorders of nucleic acid metabolism- disorders of purine and pyrimidine metabolism – gout – orotic aciduria – xanthinuria – Lesch Nyhan syndrome.

Unit V- Advancements of Clinical Biochemistry

Automations in clinical biochemistry – use of diagnostic kits – master health check up - quality control and safety measures in clinical biochemistry lab – introduction to recent diagnostic tools.

Learning Outcome:

The students will acquire knowledge on the metabolic disorders of biomolecules and the analytical investigations performed in clinical biochemistry laboratories and their clinical significance. They also know the importance of quality control and diagnostic work.

References:

1. Thomas M. Devlin (2005), Textbook of Biochemistry with Clinical Correlations, 6th edition, Wiley- Liss publications, New York, ISBN13: 9780471678083
2. MN Chatterjee, Rana Shinde (2002), Textbook of Medical Biochemistry, 5th edition, Jaypee Brothers medical publishers, New Delhi, ISBN -81-7179-991-4.
3. Praful. B. Godkar, Darshan. P. Godkar, (2005), Text Book of Medical Laboratory Technology 2nd edition, Bhalami Publishing House, Mumbai. India, ISBN – 81-85578-58-3.
4. Carl Burtis, Edward R. Ashwood (1999), Tietz Textbook of Clinical Chemistry (1999) 3rd edition W. B.Saunders Company, Philadelphia, ISBN -0-8089-2138-X.
5. Bhagavan. N. V. (1992) Medical Biochemistry, Jones & Bartlett Publications, London.

BCH 2336**Cancer Biology****3 Hrs/3Cr**

The course outlines the biology of cancer. Students will study the type of cancers, their propagations and impact on the physiology. It also provides knowledge on regulatory networks involved in the growth control. The students can also have an idea on cancer prevention and treatment associated with stem cells.

Unit I – Biology of cancer

Cancer – history – epidemiology – classification – based on cell type – benign, malignant carcinomas, sarcomas, myeloma, leukemia, lymphomas – based on organ – oral, colon, breast, prostate, lungs, liver, pancreas, cervix, ovary – pathology – differences between normal cell and cancer cell.

Unit II – Metastasis and cancer genetics

Epigenetics – role of histone proteins – Intra cellular and extra cellular control of cell division – role of protein kinase – carcinogenesis types – chemical, radiation, viral – Cancer genetics – chromosomal abnormalities – hereditary neoplasma and familial cancer syndromes.

Unit III – Apoptosis regulators

Apoptosis – Caspases – IAP – Bcl2 family proteins – TNF and other death signals – proto-oncogenes – growth factors – tumor suppressor genes – role of free radicals and anti-oxidants.

Unit IV – Cancer detection and treatment

Early detection – urine – blood – tumor markers – lab diagnosis – biopsy – molecular diagnosis – BRCA1 and BRCA2 genes– chemotherapy – gene therapy – radiation treatment and surgical removal.

Unit V – Stem cells in cancer therapy

Introduction to stem cells – source – isolation – role of purging – growth – maintenance – treatment – immuno-reconstitution – stem cell transplantation.

Learning Outcome:

The students have an in depth understanding of the molecular and cellular mechanisms that lead to cancer. Contemporary approaches to the development of therapies, specific molecular alterations in cancer as therapeutic targets and stem cell therapy.

References:

1. Gerald Karp (2007), Cell and Molecular Biology – Concepts and Experiments, 5th edition, John Wiley & Sons, IUC, New York. ISBN: 047-1-26890-9.
2. Weinberg A.R. (2007), The Biology of Cancer, Garland Science, London, ISBN: 08–153–4076–1.
3. Bruce Alberts, Dennis Bray, Julian Lewis, Martin Raff, Keith Roberts, James D Watson, (2008), Molecular Biology of the Cell, 5th edition. Garland Science, New York. ISBN: 08–153–4111–3.
4. Benjamin Lewin (2000), Genes IX. Oxford university press. New York. ISBN: 0-9780-763-75224.
5. Geoffrey L.Zubay (1998) Biochemistry 4th edition William C. Brown, ISBN: 9780075616955

BCH 2438**Medical Microbiology & Clinical Biochemistry Lab****4 Hrs/4Cr**

This lab course a collaborative outcome of both microbial and biochemical analysis in the clinical field, where the students will be trained to do certain microbial techniques, to identify disease causing microorganisms and to inculcate basic aseptic techniques to grow the microorganisms. They will also be exposed in collection and processing of various clinical specimens and analyzing biochemical parameters in blood and urine. The students will be explored to the methods followed in estimating the essential components of blood and urine.

1. General laboratory safety rules and regulations - basic instrumentation in microbiology lab - cleaning of glass wares - sterilization – moist heat, dry heat & filtration methods.
2. Media Preparation – liquid & solid media – basal, enriched & selective media preparation – quality testing.
3. Pure culture techniques – pour plate and streak plate methods – maintenance of pure culture – paraffin method – cultural characteristics.
4. Microscopy - smear preparation – staining techniques - Gram staining – acid fast staining - LPCB staining (fungi) -Leishman staining (malarial parasites) – wet mount examination(eggs & cysts of parasites) - motility demonstration.
5. Antibacterial sensitivity assay – Kirby Bauer's Method – MBC & MIC.
6. Enumeration of microbes – quantitative methods – hemocytometry – colony counting.
7. Collection, transport & processing of clinical specimens – Blood, Urine, Stool, Sputum, Pus, Throat swabs & Skin scrapings.
8. Urine qualitative analysis – normal and abnormal constituents
9. Estimation of blood sugar – OT method
10. Estimation of serum cholesterol. – Zak's method
11. Estimation of serum creatinine – Jaffe's method
12. Estimation of urea from blood/urine – DAM/TSC Method
13. Estimation of uric acid from urine/blood – Caraway Method
14. Estimation of titrable acidity in urine.
15. Estimation of calcium from urine – Clark & Collip method

Learning Outcome:

Students will acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological and biochemical laboratory skills applicable to clinical methods, in reporting observations and analysis.

References:

1. James G. Cappuccino Natalie Sherman (2004) Microbiology – A Laboratory Manual 6th edition, Pearson Education Pvt Ltd, Singapore, ISBN – 81-297-0265 -7
2. John. M. Lammert (2007), Techniques in Microbiology – A student's handbook 1st edition, Pearson prentice hall, USA, ISBN 0 – 13- 224011 -4.
3. Harold Varley, (2005), Practical Clinical Biochemistry, 4th edition, CBS Publishers, New Delhi.
4. Praful. B. Godkar, Darshan. P. Godkar, (2005), Text Book of Medical Laboratory Technology 2nd edition, Bhalami Publishing House, Mumbai, India.
5. Pattabiraman, T. N. (1998), Laboratory Manual in Biochemistry 3rd edition, All India Publishers and Distributors, Chennai, ISBN: 81-85502 -42.

BCH 2440**Hormones and Human Behaviour****5 Hrs/4Cr**

This course is designed with a specific intention for the students to acquire biochemical understanding of various behavioural exhibits and to assess their own chemistry. The course content explains the endocrine system and the ways in which hormones can influence brain structure and functions, specific behaviours including sexual, parental, social/aggression and cognition. Expect to generate students acquired with better understanding about their own chemistry and thereby to excel as a best citizen with cutting edges in the contemporary society.

Unit I – Basics of Behavioural Endocrinology

Behavioural endocrinology – definition, historical background – experimental studies – John Hunter's – Adolf Berthold's experiment – hormone – definition – structure – synthesis of amine, peptide, steroid hormones – transport in blood – mechanism of hormone action.

Unit II – Endocrine System-Behaviour Relationships

Endocrine system – definition – overview - glands and hormonal secretion – hypothalamus, pineal, thyroid, pancreas, adrenal, testes, ovaries – metabolism and excretion – candidate hormones – Behaviour – definition - hormone-behaviour relationship – testing by; removal – orchiectomy/oophorectomy, replacement/implantation, correlation – differentiation in human brain – size/weight – cerebral asymmetry.

Unit III - Reproductive Behaviour

Human psychosexual differentiation – role of GnRH, LH, FSH – sex drive/libido – gender identity – gender role – sexual differentiation at puberty; body shape – bone metabolism – voice modulation – male sexual behaviours – testosterone – replacement – hypogonadal males – elderly males - female sexual behaviours – testosterone, estrogen, progesterone – attractivity, proceptivity and receptivity – menarche – premenstrual syndrome – menopause and hormonal replacement – transgenders – Klinefelters syndrome – Turner's syndrome – gender identity and behaviour.

Unit IV - Parental and Social Behaviour

Offspring-parent attachments – behaviour in human – maternal, paternal – role of estradiol – testosterone – aggression – influences – types – ‘The challenge hypothesis’ evidence – human aggression – relation with testosterone levels.

Unit V – Sex Steroids and Cognition

Cognitive processing – meaning – testosterone-cognitive relationships in males – menstrual cycle – LH surge and ovulation – cognitive performance fluctuations – postpartum depression.

Learning Outcome:

After successful completion of this course students know to interpret the importance of hormones and their behavioral influences for an optimal functioning of the organism. They will be able to discern and interpret the importance to the correct use of the scientific terminology in the field of behaviour and endocrinology.

References:

1. Randy J. Nelson (2011), An Introduction to Behavioural Endocrinology, 4th edition, Sinauer Associates Inc. Publishers ISBN 13: 9780878936205.
2. Arthur J. Vander, James H. Sherman and Dorothy S. Luciano (1994), Human Physiology, 6th edition, McGraw-Hill, Inc. USA, ISBN: 0-07-066992-9
3. Nick Neave (2008), Hormones and Behaviour – A Psychological Approach, Cambridge University Press, UK, ISBN: 978-0-521-87145-7
4. Arthur C. Guyton and John E. Hall (2006), A Textbook of Medical Physiology, 11th edition, Elsevier Saunders Inc. ISBN: 0-7216-0240-1.
5. Donald Voet & Judith G. Voet (2011), Biochemistry 4th edition, John Wiley & Sons. New York. ISBN 13: 978-0470-91745-9.

BCH 3631**Molecular Biology and Genetic Engineering****6 Hrs/6Cr**

The course explains the molecular basis of life. The course introduces students on stages, regulation in prokaryotic and eukaryotic replication, transcription and translation. The course gives a clear cut idea on the vectors and the enzymes used for gene cloning. It also emphasizes on gene therapy and assay technique like PCR and blotting techniques.

Unit I - Fundamentals of Molecular Biology

DNA – RNA as genetic material – evidences – central dogma - transformation experiments; Griffith's, Avery, Macleod, McCarty, Hershey and Chase – structure of nucleotides; DNA replication in prokaryotes; forms of DNA & replication – enzyme machinery – eukaryotic replication – differences between prokaryotic and eukaryotic replication.

Unit II - Transcription and Translation

Transcription in prokaryotes; stages of transcription; upstream and downstream bases; promoters; post transcriptional modifications; differences between prokaryotic and eukaryotic transcription. inhibitors of transcription.

Translation: genetic code; properties of genetic code; stages of translation – post translational modification - difference between eukaryotic and prokaryotic translation. inhibitors of translation.

Unit III - Regulation of gene expression

Enzyme induction and repression: prokaryotes – operon concept – lactose, tryptophan, arabinose; Regulatory proteins – eukaryotes – leucine zipper, zinc finger – mutant – mutations – mutagenesis – types – DNA damage and repair.

Unit IV- Genetic Engineering

Introduction – nucleases – exonucleases – endonucleases – restriction endonucleases – classification – uses - restriction mapping – DNA modifying enzymes – Nucleases, Polymerases, Phosphatases and DNA ligases. Vectors - Plasmid, Bacteriophage, cosmids, yeast artificial chromosome, expression vectors. Gene cloning: Isolation of plasmid and genomic DNA – Construction of genomic and cDNA libraries, Joining of DNA Fragments to vectors, Homo polymer tailing, cohesive and blunt end ligation, adaptors, linkers.

UNIT V- Applications of rDNA and Assay Techniques

Genetically modified organism – molecular pharming – genetically modified; foods – animals – vaccines – gene therapy – vectors – retroviral vectors – anti-sense RNA technology. Assay techniques: Blotting techniques, PCR, RFLP, RAPD.

Learning Outcome:

The students should be able to understand the fundamental concepts on molecular cell biology, biochemistry, and genetic engineering. They will comprehend the background, essential components, and various functions of molecular cell systems and have basic knowledge on practical techniques and approaches commonly used in molecular cell biology and molecular cloning that can be applied to molecular cell biology to biomedical engineering and medical sciences.

References:

1. Richard M. Twyman & Robert W. Old, Sandy B. Primrose (2002), Principles of Gene Manipulation – 6th edition, John Wiley and Sons. Inc, New York, ISBN: 9780632059546.
2. Watson J.D, Witreowski J, Gilman M. and Zooller M. (1992), Recombinant DNA 3rd, W.H.Freeman & Co. Ltd., New York ISBN: 0716728664.
3. Brown T.A. (1995), Gene cloning – An Introduction, 3rd edition, Chapman & Hall, London, ISBN13: 9780412622403
4. David Freifelder (1983) Molecular Biology 2nd edition Jones & Bartlett publishers, Inc., U.S.A., ISBN: 81-85198-34-9.
5. Peter J. Russell (1998), Genetics 5th edition, The Benjamin Cummings Publishing company Inc., Canada. ISBN: 0-321-00038-2.

BCH 3633**Analytical Techniques****6 Hrs/6Cr**

This course outlines the basic principles of various techniques employed in the field of biochemistry. This course is aimed at developing quantitative skills in estimating various constituents using specified instruments. Students will acquire a broad knowledge in basic mechanism of instrumentations employed in the fields of biology in clinical settings.

Unit I – Methods of Cell Separation and Microscopy

Microfiltration, centrifugation, ultrasonication, high pressure homogenisation, ultrafiltration, diafiltration and their applications, reverse osmosis, lyophilisation.

Microscopy: principle, instrumentation, specimen preparation – light microscopy, bright field, phase contrast, fluorescence, SEM, TEM, STEM and their applications.

Unit II – Spectroscopy and Centrifugation

Spectroscopy – principle – Beer – Lambert's law , colorimetry, UV – visible spectroscopy, turbidometry, luminometry, fluorimetry, fluorescence, X-ray diffraction, – instrumentation – applications.

Centrifugation – principles of sedimentation, types of centrifuges - high speed, analytical – types of rotors – types of centrifugation - preparative, differential centrifugation, density gradient, zonal - analytical ultracentrifugation – Svedberg unit – instrumentation – applications.

Unit III - Chromatography

Principles – paper, thin layer, gel-filtration, ion-exchange, affinity chromatography, gas liquid chromatography, gas solid chromatography, high pressure liquid chromatography (HPLC); reversed phase chromatography, Hydrophobic interaction chromatography – instrumentation -applications.

Unit IV – Electrophoresis

Principle, concept of electrophoresis, factors affecting electrophoresis, moving boundary electrophoresis, zone electrophoresis, - paper, agarose gel electrophoresis, pulse field gel electrophoresis, native PAGE, SDS-PAGE, isoelectrofocussing, 2-Dimensional electrophoresis, immunoelectrophoresis – instrumentation – applications.

Unit V – Radioisotope Techniques

Principle – radioactivity - units, radioactive decay - rate – measurement - Geiger Muller counter, scintillation counter, effect of radiations on biological system, Cerenkov radiations, Tracer technique- Principle autoradiography – RIA – ELISA - safety measures in handling of radioisotopes - Dosimetry – instrumentation – applications.

Learning Outcome:

Appreciable knowledge will be gained by the students in the modern analytical techniques. The students will also be in a position to apply their knowledge in developing new methods for determination and validate procedures.

Reference:

1. Avinash Upadhyay, Kakoli Upadhyay, Nirmalendranath, (2003) Biophysical Chemistry – Principles and Techniques, Himalaya Publishing House, Delhi.
2. Simon Roe, (2004) Protein Purification Techniques 2nd edition, oxford University Press, New Delhi
3. Keith Wilson, John Walker, (1997), Practical Biochemistry – Principles and Techniques, 4th edition, Cambridge University Press, Cambridge, Britain.
4. Dr. P. Palanivelu, 2001, Analytical Biochemistry and Separation Techniques – A Laboratory manual, 2nd edition, Kalaimani Printers, Madurai.
5. David .T. Plummer, (2003) An Introduction to Practical Biochemistry, 3rd edition, Tata Mc Graw Hill publishing company Ltd, New Delhi.

BCH 3635**Pharmacology & Toxicology****6 Hrs/6Cr**

The course will provide the basic knowledge to understand the general principles of drug action and metabolism of drugs by the body. The course also deals with chemotherapy and their application on vulnerable diseases. Understanding the basic concepts of The students are introduced to the adverse effects of drugs, heavy metal toxicity.

Unit I – General Pharmacology

Introduction - drug - dosage forms - mechanism of action - combined effect factors modifying drug action - Pharmacokinetics: absorption, distribution, biotransformation of drugs - drug metabolism - liver, kidney, intestine - excretion - bioassay.

Unit II – Pharmacodynamics

Receptor - general aspects - structural - functional aspects - regulation - classification and characterization - drug -receptor interactions - free radicals - impact - antioxidants.

Unit III – Chemotherapy

General principles of chemotherapy, antibiotics - norflaxacin, ciprofloxacin, erythromycin - chemotherapy of tuberculosis, leprosy, fungal diseases, viral diseases, urinary tract infections and sexually transmitted diseases - chemotherapy of malignancy.

Unit IV – Principles of Toxicology

Definition - toxicants - classification - occurrence, sources, evaluation of toxicity - threshold dose - lethal dose - sublethal dose - infectious dose - detoxification - adverse drug reactions - abnormal action of drugs - tolerance, addiction, habituation, idiosyncrasy, allergy, hypersensitivity, antagonism, synergism, potentiation, tachyphylaxis.

Unit V – Organ toxicity

Overview of hepatotoxicity - nephrotoxicity - neurotoxicity - respiratory toxicity - cardiotoxicity - immunotoxicity - causes - types - mechanism - effects.

Learning Outcome:

The students will acquire the knowledge on drug metabolism, chemotherapy, principles of toxicology and organ toxicity.

References:

1. K.D. Tripathi (2013), Essentials of Medical Pharmacology 6th edition, Jaypee Brothers Medical publishers(P) Ltd., New Delhi, ISBN No: 81-8448-085-7.
2. Bertram G. Katzung, Susan B. Masters, Anthony J. Trevor (2012), Basic and Clinical Pharmacology, 12th edition, Edited by McGraw Hill medical publishers Ohio ISBN: 978-0-07-176402-5
3. R.S. Satoskar, S.D.Bhandarkar, Nirmala N. Rege (2009), Pharmacology and Pharmacotherapeutics, 21st edition, Popular Prakashan Pvt. Ltd., Mumbai, ISBN: 978-81-7991-527-1.
4. S.K. Kulkarni (2013), Handbook of Experimental Pharmacology, 4th edition, Vallabh-prakashan publication, New Delhi, ISBN: 9788185731766.
5. Ernest Hodgson (2004). A textbook of Modern Toxicology. 3rd edition. John Wiley & Sons, Inc., New York, ISBN 0-471-26508-X.

BCH 3537

Molecular Biology and Analytical Techniques Lab

5 Hrs/5Cr

The lab course aims the students have hands on training in isolation of DNA, RNA. Separation techniques like electrophoretic method of separating nucleic acids and proteins. Centrifugation, chromatography for the separation of sugars, amino acids and plant pigments. The students are able to learn the immunological techniques for antigen - antibody assay.

- 1) Isolation of genomic DNA from liver cells.
- 2) Isolation of plasmid DNA from E.coli.
- 3) Estimation of DNA – Diphenyl amine method.
- 4) Estimation of RNA – Orcinol method.
- 5) Separation of DNA – Agarose Gel Electrophoresis.
- 6) Separation of proteins – SDS-PAGE.
- 7) Density gradient centrifugation – CsCl method.
- 8) Separation of amino acids – paper chromatography.
- 9) Separation of sugars – thin layer chromatography.
- 10) Separation of lipids – thin layer chromatography.
- 11) Separation of amino acids/plant pigments/algal pigments – column chromatography.
- 12) Immunological techniques- Antigen-Antibody interactions - Radial immuno diffusion.
Double immuno diffusion - Rocket electrophoresis.
- 13) Spectrophotometer – demo.
- 14) Photo Fluorometer – demo.
- 15) Field visit.

Learning Outcome:

The students understand and perform isolation, estimation and separation of nucleic acids, sugars and amino acids using various techniques in molecular biology.

References:

1. Sadasivam S, Manickam A (1996), Biochemical Methods, 2nd edition. New Age International Publishers, P Ltd. New Delhi. ISBN: 81-224-0976-8.
2. David Sheehan (2009), Physical Biochemistry 2nd edition. John Wiley & Sons Ltd, London. ISBN: 9780470856024.
3. Rajamanickam C. (2002), Experimental protocols in Basic Molecular Biology, Osho scientific publication, Madurai.
4. David T. Plummer, (2001), An Introduction to Practical Biochemistry, 3rd edition, Tata Mc Graw Hill publishing company Ltd., New Delhi, ISBN-10: 0-07-099487-0.
5. Palanivelu P (2004), Analytical Biochemistry & Separation Techniques 4th edition, Twenty First Century Publication, Madurai.

BCH 3239

Forensic Science

3 Hrs/2Cr

The course will give the students to the basic of forensic science. The relation between the law and medicine. The topic includes the discussion of basics of forensic science, regulation of Indian and state medical councils, medical ethics and euthanasia. It also provides the informations on various divisions of forensic laboratories. The course also deals with application of biology in the field of forensic science such as blotting techniques, RFLP, PCR, DNA finger printing technologies. There is also the discussion on management of poisoning, criminal laws and poison acts, types and causes of crimes, interaction of criminals with society.

Unit I – Basics of forensic science

Definition – branches, legal procedures – medical jurisprudence – Indian medical council and state medical council regulations – medical ethics – euthanasia – forensic Science Laboratories in India – Central and State level laboratories – various divisions – ballistics, biology, chemistry, serology.

Unit II – Investigative techniques

Collection of evidences – identification – collection – comparison – preservation – body fluids – hair – finger prints – foot prints – types of injuries, wounds – sign and symptoms of death – time of death – autopsy – post mortem.

Unit III – Biological techniques in forensic science

Blood grouping – microscopy – principles and types – introduction to molecular biology – Blotting techniques, RFLP, PCR, STR and DNA finger technology.

Unit IV – Toxicology

Toxicant – definition – classification – types of poisoning – management – signs and symptoms – mode of action – excretion – detection – criminal laws – Indian status on drugs and poison.

Unit V – Crime Scenario in India

Introduction to crime – history – sociological aspects – types of crime – causes – society – criminal interaction – behaviour – responsible factors – genetic predisposition – statistics.

Learning Outcome:

The students develop an understanding and appreciation for the scope of forensic science and understanding of the scientific method in the context of the law for each forensic sub-discipline.

References:

1. B. J. Fisher, W.J. Tilstone, C. Woytowicz, Introduction to Criminalistics: The foundation of Forensic Science, ISBN-13: 978-0120885916
2. Parikh C. K. (1999), Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology 6th edition, CBS Publishers & Distributors Pvt. Ltd., New Delhi, ISBN: 978812390675
3. AK Jaiswal, Tabin Millo (2014), Handbook of Forensic Analytical Toxicology 1st edition Jaypee Brothers Medical Publishers, New Delhi, ISBN 9789351522249.
4. David Freifelder (1983), Molecular Biology 2nd edition Jones & Bartlett publishers, Inc., ISBN: 81-85198-34-9.
5. Textbook of forensic medicine and toxicology edited by V.V. Pillay 16th edition 2011 ISBN: 978-81-8191-347-0. Paras medical publishers, Hyderabad,

BCH 3241**Environmental Studies****4 Hrs/2Cr**

This course is designed to introduce students to major ecological concepts and the environmental problems that affect the world in which we live. There is an urgent need for environmental education. This course provides one way in which students can become aware of the interactions of people and their environment. The content focuses on concepts that are real-life issues. It promotes awareness and understanding on pollution and its adverse effects. The course will also introduce the pertinent laws and regulation.

Unit I – Fundamentals of Ecology

Definition – scope – structure – composition - atmosphere, hydrosphere, lithosphere and biosphere - biotic and abiotic components – biodiversity – hot spots – extinct and endangered species – biogeochemical cycles – water cycle - carbon cycle - nitrogen cycle – phosphorous cycle - sulphur cycle.

Unit II - Ecosystem

Definition - concept - types - structure and function- energy flow in ecosystem - pond, lake, river, grass land and forest ecosystem - food chain - food web - ecological pyramids - renewable and non renewable energy resources.

Unit III –Environmental Pollution and Disaster Management

Environmental pollution – causes, effects, control measures - air pollution, land pollution, water pollution, noise pollution, nuclear pollution and marine pollution -disaster management - floods, earth quake, cyclone and land slides. role of individuals in prevention of pollution - pollution case studies – solid waste management – causes – effects – control measures.

Unit IV - Social Issues-Human Population

Urban issues - Energy - water conservation - Environmental Ethics - Global warming - Resettlement and Rehabilitation issues - Environmental legislations - Environmental Protection Act - Air, Water, Wildlife and forest conservation Act - Population growth and Explosion –

Human rights and Value Education - Environmental Health - AIDS - Dengue – women and child welfare - public awareness – role of government – Swachh Bharat mission – case studies.

Unit V –Field Work

Visit to local area – documentation of environment assets – river/forest/hill/village - study of simple ecosystem – pond/ river/hill slopes. Visit to local polluted site – urban/rural/industry/agriculture – study of common plants, insects, and birds.

Learning Outcome:

The students will be able to understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale. They develop critical thinking and observation skills and apply them to the analysis of a problem related to the environment.

References:

1. N. S. Subramaniam, A. V. S. S Sambamurty, (2002), Ecology. Narosa publishing house, New Delhi. ISBN 81 – 7319 – 289 – 8
2. Erach Barucha, (2005) Text book of environmental studies for undergraduate courses, University press private Ltd., Hyderabad. ISBN – 81 – 7371 – 540 - 8
3. Dhaliwal G.S., Sangha G.S., Ralhan P.K., Kalyani,(2000), Fundamentals of Environmental science, Kalyani Publishers, New Delhi.
4. Eugene P.Odum, Gray W. Barette, (2005), Fundamental of Ecology, 5th edition, thompson Asia pvt. Ltd., Singapore. ISBN – 981 – 252 – 969 - 2
5. P. D. Sharma (2009), Ecology and Environment , Rastogi Publications, Meerut

BCH 3632**Plant Biochemistry****6 Hrs/6Cr**

In recent years plant biochemistry has attracted the attention biologists, chemists, physicists all over the world. This course outlines the various biochemical reactions, which are exclusive for plants. The topics discussed include biochemistry of photosynthesis, plant hormones, and essential mineral nutrients of plants, Special emphasis is given to the biochemical mechanisms involved in diseases resistance, the production of secondary metabolites like glycosides and alkaloids and their pharmacological importance.

Unit I – Plant Physiology

Plant cell – structure – cell membrane – cell wall - physiology – conduction pathways – ascent of sap – cohesion theory – physiology of stomatal action - occurrence – classification - structure and function of naturally occurring pigments in plants.

Unit II – Photosynthesis

Photosynthetic organelles in plants - Proton gradients and electron transfer in chloroplasts of plants - Light receptors – vernalization - chlorophyll - light harvesting complexes - energy transfer between photosystems – ferridoxin, plastocyanin, plastoquinone, carotenoid - photophosphorylation and reduction of CO₂, C₃, C₄ and CAM pathway – light and dark reactions - Light activation of enzymes - regulation of photosynthesis – photorespiration.

Unit III – Phytohormones

Introduction - Growth regulating hormones and their mode of action – auxin - cytokinin – ethylene - abscisic acid – gibberellic acid – synthetic growth hormones- hormones of flowering – senescence and abscission.

Unit IV – Plant Nutrition

Nitrogen cycle - biological nitrogen fixation- nitrate assimilation - nitrate and sulphate reduction and their incorporation into amino acids – essential mineral nutrient absorption - translocation of inorganic and organic substances - functions – effects of toxicity and deficiency – biofertilizer.

Unit - V - Secondary Metabolism

Introduction – structure – classification – assays – pathways – shikimic acid, acetate pathways – mevalonic acid pathways – production of secondary metabolites- glycosides, steroids, alkaloids, terpenoids, flavanoids – pharmacologic uses – biochemical resistance mechanism in plants - defense systems in plants -tissue culture and transgenic plants – embryogenesis – pluripotent- totipotent.

Learning Outcome:

The students will understand the biochemical evolution of photosynthesis, plant hormones and their regulators in depth and on plant nutrition and plant secondary metabolites. They also gain knowledge on recent advances in plant biochemistry.

References:

1. Noggle G.R and Fritz G.J. (2002) Introductory Plant Physiology, 2nd edition, prentice Hall, New Delhi.
2. Dey P.H and Harborne, J. B. (2000), Plant Biochemistry, Harcourt Brace and company Asia Pvt. Ltd., Singapore.
3. Devlin, R. M. and Witham.F.H. (1999), Plant Physiology, 4th edition, CBS Publishers and Distributors, New Delhi.
4. Goodwin. T. W. and Mercer. E. L. (1998) Introduction to Plant Biochemistry, CBS Publishers and Distributors, New Delhi,
5. Salisbury, F.B. & Ross, C. W. (1992), Plant Physiology 4th edition, Wadsworth Publishing Company, California.

The objective of the course is to appreciate the organization of proteins and its classification in living systems. Students develop knowledge on the sequencing of proteins and understand its complex structure that helps them in applying the concepts in the development of protein models. Special emphasis is given to identification of proteins using spectrometry and microarrays. Application of protein in various fields of medicine will indulge in the thrust of the students.

Unit I – Organization of Proteins

Introduction, definition, biological role, building blocks of proteins – aminoacids- peptides – peptide bond - polypeptides – classification of amino acids - classification of proteins – based on solubility - shape - composition and functions of proteins.

Unit II - Sequencing of amino acids

Importance – determination - protein sequencing – end group analysis, Dansyl chloride reaction – Sanger's reagent – use of exopeptidase, endopeptidase, determination of the aminoacid sequence - small peptide - large protein – specific chemical and enzymatic cleavage – separation of peptides - cyanogen bromide – Edmann degradation – Chemical synthesis – Merrifield solid – phase peptide synthesis.

Unit III - Structure of proteins

Protein structure – Levels – primary and secondary structure– α -helix and β -pleated sheet- Ramachandran plot, irregular structures – random coil, variations in standard secondary structures, turns and loops – Protein folding – thermodynamics of folding, role of disulphide bonds, chaperonins – structure-function relationship.

Unit IV - Complex architecture of protein

Tertiary structure – stabilizing forces – motifs and domains – variations in side chain location with polarity – combining helices and sheets in various ways, behaviour of proteins in solution – salting in, salting out – quaternary structure – stabilizing forces – biological functions – fibrous proteins – keratin, collagen, elastin – globular proteins – hemoglobin, myoglobin, chymotrypsin – denaturation and renaturation.

Unit V - Proteomics

Definition – identification and analysis of proteins – 2- D analysis, tryptic digestion of protein and peptide fingerprinting, mass spectrometry, MALDI, Tandem Mass Spectrometry for protein identification, techniques to study protein – protein interactions, antigen and antibody microarrays, protein microarrays, protein biomarkers, protein sorting – Protein Data Bank.

Learning Outcome:

The students have an in depth knowledge on various levels in organization of proteins, sequencing of amino acids and techniques of proteomics.

References:

1. David L. Nelson, Michael M. Cox, (2005), Lehninger Principles of Biochemistry, 4th edition, W. H. Freeman & Company, New York.
2. Mathews .K. Christopher, Vantolde .K .E, Ahern. G. Kevis (2003) Biochemistry 3rd edition, Pearson education Pvt. Ltd, New Delhi.
3. Pennington. S.R. Dunn. M.J. (2002), Proteomics, Viva Book Private Ltd, New Delhi.
4. Richard. J. Simpson (2003), Proteins & Proteomics – A Laboratory Manual, I.K. International Pvt., Ltd, New Delhi.
5. Creighton, T.E. (2004), Protein structure – A practical approach, 2nd edition, Oxford University press. Oxford.

BCH 3636**Biostatistics****6 Hrs/6Cr**

The main objective of the course is to inculcate the students with statistical skills needed to deal with contemporary nature of biological and clinical experiments. It also acquaints students with basic concepts of data collection and sampling methods. Special emphasis was given to probability distribution and hypothesis testing which help the students to apply the methods of distribution in various experimental problems. To fulfill the research thrust of the students a unit on research methodology was added to the course.

Unit I - Data Collection and Sampling Methods

Definition – sources - collection of data – sampling survey – classification – primary and secondary data – sampling - methods – procedures – using computer programme (Excel) – Presentation of data – graphical representation – piechart – histogram.

Unit II – Analysis of Distribution

Statistical tools - measure of central tendency – mean median and mode - measures of dispersion – mean deviation - standard deviation - coefficient of variation moments - skewness – kurtosis - correlation & regression analysis – standard error.

Unit III – Probability Distributions and Applications

Definition – classical approach- conditional probability – Bayes theorem and applications – random variables - theoretical distribution – binomial - poisson – normal distributions and applications – simple problems.

Unit IV – Hypothesis testing – small and large samples

Small samples - Z- test- student's t -test - F-test - large samples - non-parametric tests - chi square test – one sample runs test – Spearman's rank correlation – statistical decision theory.

Unit V – Analysis of Variance

ANOVA - definition – classification – one criteria, two criteria & three criteria – simple problems – overview of research methodology.

Learning Outcome:

The student will be known to the biostatistics arrangement, presentation and formation of tables and charts. They also be familiar with the correlation and regression & application of different methods and analysis of data.

References:

1. Gupta, S. C. and Kapoor, V.K (2003), Fundamentals of Applied Statistics. Sultan Chand and Sons, New Delhi.
2. Elhance, D.N. and Agarwal, B. M. (2003), Fundamentals of Statistics, Kitab Mahal Ahamedabad.
3. Gupta, S. P. (2003), Statistical Methods, Sultan Chand and Sons, New Delhi.
4. Thanulingam, N. (2000), Research Methodology, Himalaya Publishing House, Mumbai.
5. Loraine Blaxter, Christina Hughes and Malcolm Tight (1999), How to Research, Viva Books Private Limited, New Delhi.

BCH 3538**PROJECT****5 Hrs/5Cr**

This course incorporates project mode of learning and is offered to final year students to promote research aptitude. At the final semester every biochemistry student is given an opportunity to take up a project to develop skills and exposure to research. Each student has to work with a team of students. All the faculty members of the department will equally participate in this teaching and learning activity. They are expected to guide and supervise minimum one or maximum two teams depending on the class strength and they will be the internal examiners of this paper, The HOD/Coordinator will assign the guide for each student. The course will be evaluated by the internal project panel members (HOD/Coordinator and the faculty members) using a standard format developed by the Coordinator. Each team is expected to present their findings. A viva-voce will be conducted to evaluate final outcome of the project.

Each team is expected to meet all the course requirements as given below:-

Course Requirements

Total Duration	One Semester
Hours per week	Five
Submission of Research Proposal	Between 10 th and 15 th working day
Proposal presentation by the team and approval by the panel members.	Between 16 th and 20 th working day
Project work (data collection, laboratory experiments work, field work, and other related activities.)	Between 21 st and 70 th working day
Presentation and Viva	Between 71 st and 80 th working day
Final project report submission	Between 81 st and 90 th working day.

The individual and the team will be evaluated continuously based on the following criteria -

1. Attendance and involvement
2. Approach to the problem
3. Team work
4. Weekly reporting
5. Outcome of the project
6. Poster
7. Viva-voce
8. Final project report

BCH 3240

Clinical Diagnostics

3 Hrs/2Cr

The course deals with the clinical procedures commonly used in a clinical lab. Students will be exposed to the tests performed in the areas of pathology, biochemistry and microbiology. The course also explicit the cross matching of blood and processes of the blood banking procedures.

Unit I – Biological Samples

Clinical sample – definition – blood – urine – feaces – synovial fluid – amniotic fluid – saliva – solid tissue – collection – preservation – handling – storage.

Unit II – Pathology

Blood functions - cell morphology – blood cell counting – anticoagulants – serum – plasma – changes in blood on keeping – ESR, bleeding time, clotting time – blood grouping and Rh typing.

Urine – normal and abnormal constituents – clinical significance.

CSF – lumbar puncture – appearance – chemical constituents – pressure – Lange colloidal gold reaction – biochemical changes – clinical significance.

Biopsy – Fine Needle Aspiration Cytology – Staining.

Unit III – Biochemical Tests

Biochemistry - principles – blood glucose level – Diabetes mellitus – GTT – HbA1c – obesity – lipid profile – atherosclerosis – myocardial infarction – liver function test – total protein – bilirubin – SGOT/SGPT – alkaline phosphatase – renal function test – urea – creatinine hormones – hCG – thyroid hormones – sex hormones.

Unit IV – Microbial Diagnosis

Introduction – microscopy – morphology – bacteria – fungi – virus – parasites – sterilization and disinfectants – growth and maintenance of microbes – culture media – staining techniques – biochemical characterization – antimicrobial study – diagnostic test – WIDAL test – VDRL – CRP – ASO – HIV – HBsAg – disposal of biomedical waste.

Unit V – Blood Transfusion and Blood Banking

Blood cross matching – blood transfusion – testing donor blood - storage – transport - maintenance of blood bank records.

Learning Outcome:

The students will have a clear idea on the basics and principles of clinical chemistry, general microbiology, clinical hematology, histopathology, blood banking and blood transfusion techniques.

References:

1. Praful B. Godkar & Darshan P. Godkar, (2014), Textbook of Medical Laboratory Technology- set of 2 volumes. Clinical Laboratory sciences and Molecular Diagnosis, 3rd edition, Bhalani publishing House, Mumbai. ISBN: 9789381496190.
2. Harold Varley. Practical Clinical Biochemistry Hardcover (2006) 6th edition, CBS Publishers.
3. Carl A. Burtis and Edward R, Ashwood (1999), Tietz Textbook of Clinical Chemistry, 3rd edition, Harcourt Brace & Company Asia Pvt. Ltd., Philadelphia.

4. David T Plummer – An introduction to Practical Biochemistry. (1988) 3rd edition. Tata McGraw Hill Publishing Company Limited. ISBN: 978-0-07-099487-4.
5. Keith Wilson and John Walker (2010), Principles and Techniques of Biochemistry and Molecular Biology, 7th edition. Cambridge University Press. ISBN 978-0-521-51635-8.

Laboratory Course Evaluation

Each laboratory exercise is considered as a unit of continuous evaluation. Each unit shall carry equal marks. Every student is expected to be present in all the laboratory class and complete the laboratory exercises in the allotted time.

A prescribed format for the laboratory course evaluation is give below for the perusal of the course teacher.

Report submission and punctuality	Work attitude and interest	Creative work	Problem solving ability	Willing to do extra work
5	5	5	5	5

The course teachers are empowered to design innovative specific evaluation procedure based on the type of experiment conducted at the laboratory. However, the method of evaluation should be announced before the commencement of the lab session. At the end of the semester, a summative examination will be conducted and evaluated as per the college norms.

DEPARTMENT OF MICROBIOLOGY
Choice Based Credit System
Program for B.Sc - Microbiology 2015-2016 onwards

SEM	Part	Course No	Course Title	Hrs	Credits	Marks
I	I	XXX 0000	Tamil/French/Hindi	3	2	30
I	II	ENS 1201	Conversational Skills	3	2	30
I	III-C	MIC 1531	General Microbiology	5	5	75
I	III-C	MIC 1433	Lab in General Microbiology	4	4	60
I	III-C	MIC 1435	Microbial Taxonomy and Diversity	4	4	60
I	III-S	MIC 1401	Biochemistry	5	4	60
I	IV-E	XXX 0000	Non Major Elective -I	3	2	30
I	IV-LS	XXX 0000	Life Skill -I	3	2	30
I	V	XXX 0000	Extension Activity (NSS/PED)	-	-	-
Total				30	25	375
II	I	XXX 0000	Tamil/French/Hindi	3	2	30
II	II	ENS 1202	Reading & Writing Skills	3	2	30
II	III-C	MIC 1532	Food and Dairy Microbiology	5	5	75
II	III-C	MIC 1434	Lab in Food and Dairy Microbiology	4	4	60
II	III-C	MIC 1436	Microbial Genetics	4	4	60
II	III-S	MIC 1402	Microbial Physiology and Metabolism	5	4	60
II	IV-E	XXX 0000	Non Major Elective -II	3	2	30
II	IV-LS	XXX 0000	Life Skill -II	3	2	30
II	V	XXX 0000	Extension Activity -NSS/PED	-	1	15
Total				30	25+1	375/390
III	I	XXX 0000	Tamil/French/Hindi	3	2	30
III	II	ENS 2201	Study Skills	3	2	30
III	III-C	MIC 2531	Clinical Bacteriology and Mycology	5	5	75
III	III-C	MIC 2433	Lab in Clinical Microbiology	4	4	60
III	III-C	MIC 2535	Molecular Biology	5	5	75
III	III-C	MIC 2537	Bioinstrumentation	5	5	75
III	III-S	MIC 2403	Pharmaceutical Microbiology	5	4	60
III	V	XXX 0000	Extension Activity -NSS/PED	-	-	-
Total				30	27	405

SEM	Part	Course No	Course Title	Hrs	Credits	Marks
IV	I	XXX 0000	Tamil/French/Hindi	3	2	30
IV	II	ENS 2202	Career Skills	3	2	30
IV	III-C	MIC 2532	Immunology	5	5	75
IV	III-C	MIC 2434	Lab in Immunology	4	4	60
IV	III-C	MIC 2536	Industrial Microbiology	5	5	75
IV	III-C	MIC 2538	Clinical Virology and Parasitology	5	5	75
IV	III-S	MIC 2404	Biostatistics	5	4	60
IV	V	XXX 0000	Extension Activity -NSS/PED	-	1	15
Total				30	27+1	405/420
V	III-C	MIC 3731	Genetic Engineering	7	7	105
V	III-C	MIC 3533	Lab in Genetic Engineering	5	5	75
V	III-C	MIC 3635	Plant and Animal Cell Culture	6	6	90
V	III-C	MIC 3537	Lab in Plant and Animal Cell Culture	5	5	75
V	IV-LS	XXX 0000	Life Skill -III	3	2	30
V	ES	MIC 1200	Environmental Studies	4	2	30
Total				30	27	405
VI	III-C	MIC 3732	Environmental and Agricultural Microbiology	7	7	105
VI	III-C	MIC 3534	Lab in Environmental and Agricultural Microbiology	5	5	75
VI	III-C	MIC 3636	Medical Lab Technology	6	6	90
VI	III-C	MIC 3538	Lab in Medical Lab Technology	5	5	75
VI	IV-LS	XXX 0000	Life Skill - IV	3	2	30
VI	VE	XXX 0000	Value Education	4	2	30
Total				30	27	405
GRAND TOTAL				180	158+2	2370/2400

C - Core Courses
S - Supportive Courses
Studies

NME - Non - Major Elective
VE - Value Education

LS - Life Skill
ES- Environmental

SUPPORTIVE COURSES (5 Hrs/W- 4 Cr)

SEMESTER	COURSE CODE	NAME OF THE COURSES
I	MIC 1401	1. Biochemistry
II	MIC 1402	2. Microbial Physiology and Metabolism
III	MIC 2403	3. Pharmaceutical Microbiology
IV	MIC 2404	4. Biostatistics

LIFE SKILL COURSES (3 Hrs/W- 2Cr)

SEMESTER	COURSE CODE	NAME OF THE COURSES
I	MIC 1241	1. Infectious Diseases
II	MIC 1242	2. Health Awareness
V	MIC 3243	3. Bioinformatics
VI	MIC 3244	4. Pollution and Waste Management

NON MAJOR ELECTIVE COURSES (3 Hrs/W- 2Cr)

SEMESTER	COURSE CODE	NAME OF THE COURSES
I	MIC 1231	1. Health and Hygiene
II	MIC 1232	2. Nutritive Value of Food

This course is designed to provide students a wide knowledge on basic aspects of microbiology, in first semester. The first section focuses on the historical perspective, contributions of eminent scientists, concepts, types and applications of microscopes. A thorough understanding of the organization of prokaryotic cell is engrossed. Students will also know about various sterilization techniques, culturing and storage of microbes. The last section includes aspects of modern developments in microbiology.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Recount the contributions of eminent scientists in the field of microbiology.
- Characterize and appreciate the organization of prokaryotic cell.
- Explore the ways to control the growth of microbes by physical and chemical methods.
- Understand the microbial culturing and pure culture maintenance.
- Acquire knowledge on recent developments in microbiology.

UNIT - I History and scope of microbiology: Abiogenesis- biogenesis theory- contributions of eminent scientists- Antony Van Leeuwenhoek, Louis Pasteur, Robert Koch, Edward Jenner, Alexander Flemming and Winogradsky. Microscopy- simple, compound, light, dark field and phase contrast microscopy. Electron Microscopy – TEM, SEM.

UNIT - II Prokaryotic cell organization: Prokaryotic cell- size, shape, and arrangement- bacterial cell wall components –gram positive and gram negative– cell membrane- pili – flagella- fimbriae- capsule- internal structure of prokaryotes. Endosymbiosis and evolution of eukaryotes.

UNIT – III Sterilization techniques: Aseptic maintenance- physical methods – dry heat, moist heat, radiation, filtration and osmotic pressure - chemical methods- phenolic compound, alcohol, halogens, aldehyde, synthetic detergent and their applications –phenol co-efficient- concept of containment facilities.

UNIT – IV Microbial cultures and preservations: Culture media – types - enrichment cultures - pure culture- isolation methods - preservation and maintenance - low temperature, deep freezing, cryopreservation. Fungal storage- silica gel, soil and water storage.

UNIT – V Modern developments in microbiology: Principles of bacterial communication systems- quorum sensing and its importance in bacterial virulence. Microbial fuel cells- single cell protein.

TEXT BOOK

Prescott L.M, Harley J. P and Klein D. A, (2006) Microbiology, 8th edn, McGraw Hill Book Co, New Delhi.

REFERENCES

1. Pelczar MJ, Chan E. C. S, Kreig NR (1986) Microbiology, 5th edn, McGraw Hill, New Delhi.
2. Dubey, R.C. and Maheswari, D.K. (2005) A Text book of Microbiology. S. Chand & Company Ltd. New Delhi.
3. Jacquelyn G. Black (2013), Microbiology, 8th edn, John Wiley & Sons International Publication.

MIC 1433

LAB IN GENERAL MICROBIOLOGY

4Hrs/Wk-4Cr

In this laboratory course, students will be trained to explore skill based knowledge in aseptic maintenance, handling microscopes and glassware. Laboratory exercises include technical hands-on-training in preparation of selective and differential media, isolation and maintenance of pure culture. Students will also identify the morphological characterization of microbes using various staining methods.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Understand the aseptic techniques and proper handling of microorganisms, glassware and equipment.
- Identify the use of various culture media and cultivation of microbes.
- Demonstrate pure culture isolation and maintenance.
- Understand various staining techniques for morphological characterization of microbes.

Laboratory exercises include

1. Aseptic techniques and laboratory safety methods.
2. Preparation of selective and differential media.
3. Isolation and characterization of bacteria from soil.
4. Pure culture techniques – pour, spread, streak methods.
5. Pure culture storage and maintenance.
6. Staining methods – simple, gram's stain, capsular stain.
7. Isolation and characterization of fungi from soil.
8. Identification of fungi - Lacto phenol cotton blue staining.
9. Isolation and characterization of Actinomycetes from soil.
10. Motility test - Hanging drop method.
11. Oligodynamic action of heavy metals on microbes.
12. Study of microbial taxonomy using Biochemical tests.

TEXTBOOK

Cappucino R. (2001) Microbiology – A Laboratory Manual 6th edn, Benjamin / Cummin Pub Co. California.

REFERENCES

1. Gunasekaran P (1995) Laboratory Manual in Microbiology, New Age International Pvt. Ltd, Madras.
2. Collins C. H., Patricia M. Lyne (2001) Microbiological Methods, 7th edn, London, Co Published in USA.
3. Aneja K. R. (1996) Experiments in Microbiology, Plant Pathology, Tissue Culture and Mushroom Cultivation, 2nd edn, Wishwa Prakashan New Age International PVT, New Delhi.

MIC 1435 MICROBIAL TAXONOMY AND DIVERSITY 4 Hrs/Wk –4Cr

This course focuses on the principles of microbial diversity, phylogeny and taxonomy. Students will learn about different taxonomic groups, identify their differences, classification system, characteristics, and phylogenetic relevance of diversified prokaryotes. The course includes aspects such as eukaryotic diversity, characteristics, cultivation and symbiotic relationship. A chapter on virus gives special emphasis on morphology, taxonomy, replication and virus-like particles.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Understand the classification systems of microbes and evaluate microbial taxonomic relationship and evolution.
- Explore the phylogenetic relevance of archaea and eubacteria diversity.
- Summarize the characteristics, importance and taxonomic groups of fungi and symbiotic relationship.
- Appreciate the diversity of algae.
- Characterize, classify, cultivate viruses and replication of viruses infecting bacteria, plant and animals.

UNIT-I Classification system: Characteristics of microorganisms - classical and molecular. Binomial nomenclature –taxonomic hierarchy- Whittaker's five kingdom and Carl Woese three kingdom classification- polyphasic taxonomy- phylogenetic tree.

UNIT-II Archaea and eubacteria: Bergey's manual of systematic bacteriology- phylogenetic overview – archaea - deeply branching and phototropic bacteria- proteobacteria- low G+C gram positive bacteria- high G+C gram positive bacteria and other phylum of bacteria.

UNIT-III Fungi: Distribution, importance, structure, nutrition and reproduction of fungi. Taxonomy – Alexopholus classification system - Chytridiomycota, Zygomycota, Glomeromycota, Ascomycota, Basidiomycota, Microsporidia - Fungi of special interest - molds and yeast-Lichens-symbiotic relationship.

UNIT –IV Algae and protozoa: Characteristics of algae – occurrences –biological and economic importance –classification – archaeplastida, rhizaria and excavata, chromista and alveolata. Free living and symbiotic protozoa, morphology –characteristics -classification - amoeboid, flagellated, spore-forming and ciliated protozoa –importance and reproduction.

UNIT-V Virus: Outline classification - characteristics – morphology – host specificity – viral taxonomy and phylogeny –Baltimore and ICTV Classification system - RNA and DNA viruses –cultivation of virus- replication – bacteriophages – lytic and lysogenic cycle – virus-like particle - satellites, viroids and prions.

TEXTBOOK

Joanne M. Willey, Linda M. Sherwood, Christopher J. Woolverton (2011), Prescott's Microbiology, 8th edn, McGraw Hill International Publication.

REFERENCES

1. Jacquelyn G. Black (2013). Microbiology, 8th edn, John Wiley & Sons International Publication.
2. Larry Makane and Judy Kendel (1996). Microbiology – Essentials and Applications, 2nd edn, McGraw- Hill, Inc., Publication.
3. Michael J. Pelczar, JR, E.C.S.Chan, Noel R Krieg (1993), Microbiology, 5th edn, TATA McGraw – Hill Publication.

MIC 1401**BIOCHEMISTRY****5Hrs/Wk-4Cr**

The focus of this course is to offer students, a basic exposure to the science of biochemistry. The course elaborates the molecules, chemical bonds, chemical reactions pH and buffer. It provides students an opportunity to understand the structure, chemistry, properties and functions of macromolecules such as carbohydrates, lipids, amino acids and proteins. A section on enzymes and vitamins will offer an insight into enzyme classification, mechanism, inhibition and biological functions of enzymes and vitamins.

Specific Learning Outcomes (SLO):

After completion of this course, the students should be able to

- Familiarise with the basic concepts of chemistry of biomolecules.
- Recognize the basic structure of carbohydrates and their role.
- Understand the general structure of lipids and their functions in cells.
- Explore the basic protein architecture and their importance.
- Summarize representative mechanisms of enzyme catalysis.

UNIT-I Basic concepts: Molecules - chemical bonds, functional groups, types of chemical reactions- acid, base reactions, pH measurements, buffer - molarity and normality.

UNIT-II Carbohydrates: Classification--structural aspects of monosaccharides, properties, disaccharides, polysaccharides, homopolysaccharide and heteropolysaccharide- glycoprotein. Functions of carbohydrates.

UNIT-III Lipids: Classification-simple, compound, derived lipids-properties – fatty acids – triglycerols, phospholipids, glycolipid, lipoproteins, steroids-cholesterol-ergosterol. Functions of lipids.

UNIT-IV Amino acids and proteins: General structure- classification- properties. Protein–classification- properties- structure – primary, secondary, tertiary and quaternary. Biological importance of proteins.

UNIT-V Enzymes and vitamins: Nomenclature and classification-properties-coenzymes and co factors- mechanism of enzyme action- factors influencing enzyme activity- Michaelis-Menton equation-enzyme inhibition-enzyme specificity. Biological functions of enzymes. Occurrence and biological functions of vitamins.

TEXTBOOK

Satyannarayana U, and U. Chakrapani (2013) Biochemistry –4th edn Elsevier publication.

REFERENCES

1. Voet D and Voet G (1995) Biochemistry 2nd edn. John Wiley & Sons, New York,
2. Moat AG and Foster JW (1998) Microbial physiology 2nd edn. John Wiley and sons, New York
3. Stryer L (1995) Biochemistry 4th edn. WH Freeman and Co, New York.

MIC 1231**HEALTH AND HYGIENE****3Hrs/Wk – 2Cr**

In this course, students will understand the basic ideology and importance of health, and the need for best hygiene practices. This course also provides students an opportunity to explore the significance of health planning and health education for better health care of the community.

Specific Learning Outcomes (SLO):

Upon the completion of the course, the student will be able to

- Understand the basic concepts and impact of health.
- Learn about the types and significance of best hygienic practices.
- Explore the impact of health planning and management strategies.
- Recognize the need for health education and communication.
- Focus on the health care of the community.

UNIT - I Concept of health: Definitions of health and changing concepts - dimensions of health- concept of well-being - spectrum and determinants of health - right to health - responsibility for health - indicators of health. Health promotion - health scenario of India - past, present and future.

UNIT - II Hygiene: Definition - hygiene factors- types of hygiene-personal hygiene- hygiene levels - individual and community hygiene – food hygiene- hygiene behaviour – hygiene hazard- health education and hygiene practices.

UNIT – III Health planning and management: Objectives- planning cycle- management methods- techniques- need and demands – health plan and systems in India - public health in India – role of health ministry.

UNIT – IV Health education and communication: Objectives and basic principles - approaches to public health - ideas and practices - key elements in communication - barriers of communication - practice of health education - administration and organization.

UNIT – V Health care of the community: Concept and levels of health care- health state - principles - health problems - health care systems - resources - health problem in India - health insurance.

TEXTBOOK

Parker J. E. and K. Park (1989) Text Book of Preventive and Social Medicine, 12th edn, Banarsidas Bhanot Publishers, India.

REFERENCES

1. Jawetz, E., Melnic, J. L. Adlberg, E. A. (2004) Medical Microbiology 19th edn, Lange Medical Publications, USA.
2. Kathleen Talaro, Arthur Talaro (1996) Foundations in Microbiology, 2nd edn, WnC. Brown Publishers, Chicago.
3. Melvin H. Williams (2005) Nutrition for Health, fitness and Sports, 7th edition, MC Graw Hill international Edition,

MIC 1241**INFECTIOUS DISEASES****3Hrs/Wk - 2Cr**

This course aims to provide students with the understanding of positive and negative host microbe interaction. The students will also learn about the mechanism of pathogenesis for the establishment of infectious diseases, immune effector mechanism and control strategies for healthy life.

Specific Learning Outcomes (SLO):

Upon the completion of the course, the student will be able to

- Understand the stages of infectious diseases
- Learn about the significance of normal microbiota and its host interaction
- Understand the mechanism of infectious disease pathogenesis
- Explore the sources and impact of nosocomial infection
- Develop the control strategies for better health

UNIT-I Epidemiology: Infection – phases and stages, diseases and their types- list of infectious diseases, pathogenicity – morbidity and incubation, virulence – lethality and opportunistic pathogens.

UNIT-II Normal microbiota: Overview- distribution of normal microbiota in the body- type of interaction – positive and negative – commensalism, mutualism, parasitism – establishment and importance of normal microbiota.

UNIT-III Mechanism of pathogenesis: Reservoir-transmission- portal entry- adherence-invasion-colonization and pathogenesis of infectious diseases of human.

UNIT-IV Nosocomial infections: Definition-sources- mode of transmission-diagnosis-treatment-preventive measures-responsibilities of health care personals.

UNIT-V Control strategies: Good health practices - health awareness- prophylaxis - immunization – active and passive immunization - role of antibiotics.

TEXTBOOK

Ananthanarayanan and Jayaram Panikkar (1992) Text book of Medical Microbiology, 4th edn, Orient Longman Ltd. Madras.

REFERENCES

1. Cruickshank (1975) Medical Microbiology, Vol II ELBS, Churchill Livingstone Publication.
2. Patrick R. Murray, (2005) Medical Microbiology 4th edn, Library of Congress Publications, California.
3. Jawetz, E., Melnic, J. L. Adlberg, E. A. (2004) Medical Microbiology 19th edn, Lange Medical Publications, USA

MIC 1532

FOOD AND DAIRY MICROBIOLOGY

5Hrs/ Wk - 5Cr

This course is designed to make students understand the nutritional significance of day today food, its composition, factors influencing spoilage, microbes causing spoilage and preservation procedures for different kinds of foods. It provides information about food - borne infection and intoxication. This curriculum also facilitates the understanding about composition, types of milk, microbial spoilage, qualitative analyses, preservation of milk and milk products. The students will also gain knowledge about fermented food products, food sanitation and regulatory bodies.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Gain knowledge about food composition, balanced diet and food preservation methods
- Acquire knowledge about spoilage of foods and food - borne diseases
- Understand the fundamentals of milk microbiology
- Know about production of various types of dairy and other fermented products
- Understand the significance of food safety

UNIT - I Food microbiology and preservation: Food composition - food groups - balanced diet - scope and role of microbiologist in food industry - factors influencing microbial growth - intrinsic and extrinsic factors - food preservation methods - physical, chemical, biological methods.

UNIT - II Food spoilage and food - borne diseases: Sources - types of food spoilage - spoilage of cereals, vegetables and fruits, meat, fish, egg and poultry. Food - borne diseases - intoxication and food poisoning - bacterial, fungal and viral food - borne diseases.

UNIT - III Milk microbiology: Composition - types of milk - microbes in milk - contamination - pasteurization - spoilage and preservation of milk - microbial analyses of milk and milk products- adulteration of milk - packaging.

UNIT - IV Fermented food products: Microbes involved in fermentation - starter cultures - butter milk, cream, yoghurt, kafil, acidophilus milk - cheese and its types. Fermented vegetables - sauerkraut and pickles.

UNIT - V Food safety: Food quality assurance - GMP - HACCP, food sanitation. International agencies - federal and state agencies - FDA - regulation - health of employees.

TEXTBOOK

William C. Frazier and Dennis C. Westhoff (1997) Food Microbiology, 4th edn, Tata McGraw - Hill, New Delhi.

REFERENCES

1. Michael P. Doyle, Larry R. Beuchat and Thomas J. Montville (1997) Food Microbiology - Fundamentals and Frontiers, ASM Press, Washington D.C.
2. Sukumar De (1997) Outlines of Dairy Technology - Oxford University Press, New Delhi.
3. Martin R Adams and Maurice O Moses (2008) Food Microbiology, 3rd edn, The Royal Society of Chemistry, UK.

MIC 1434 LAB IN FOOD AND DAIRY MICROBIOLOGY 4 Hrs/ Wk – 4 Cr

This lab course is designed to provide a platform to train students on microbial analyses of bakery products, eggs, cool and soft drinks, pickles, packed and canned foods and spoiled foods. Laboratory exercises like grading of milk, microbial and qualitative analyses of raw, pasteurized milk and its products will be examined. Besides, the students will gain knowledge by visiting various processing units related to food and dairy microbiology.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Analyse the microbial quality of foods
- Investigate microorganisms involved in spoiled foods
- Grading and microbial analyses of milk and milk products

Laboratory exercises include

- Microbial examination of bakery products
- Microbial analyses of eggs
- Microbial investigation of cool and soft drinks
- Microbial examination of pickles
- Microbial analyses of packed and canned foods
- Isolation and identification of microorganisms from spoiled foods
- Grading of raw and pasteurized milk
- Qualitative analyses of milk
- Microbial quality of milk products
- Industrial visit to food production / processing units

TEXTBOOK

Cappucino R. (2001) Microbiology – A Laboratory Manual 6th edn. Benjamin / Cummin Pub Co. California.

REFERENCES

1. Gunasekaran P. (1995) Laboratory Manual in Microbiology, New Age International Pvt. Ltd, Madras.
2. Collins C. H., Patricia M. Lyne (2001) Microbiological Methods, 7th edn, London, Co Published in USA.
3. Aneja K. R., (1996) Experiments in Microbiology, Plant Pathology, Tissue Culture and Mushroom Cultivation, 2nd edn, Wishwa Prakashan New Age International PVT, New Delhi.

MIC 1436**MICROBIAL GENETICS****4Hrs/Wk-4Cr**

This course will provide students focus on hereditary aspects of prokaryotic microbes. It provides insights on the use of mutations and complementation test in genetic analysis. Various mechanisms of gene transfer in microorganism and extra chromosomal inheritance shall be elucidated. This course will enable students to acquire knowledge in reproducing ideas and impacts in genetics and in understanding microbial forms of life.

Specific Learning Outcomes (SLO)

Upon successful completion of this course, the student will be able to:

- Understand the importance of mutations and their genetic changes.
- Integrate and evaluate the properties of plasmids and mobile genetic elements.
- Learn the competency of microbes to uptake DNA.
- Explore on mechanism of gene transfer by cell to cell contact.
- Relate the different strategies of phage for gene transfer.

UNIT-I Essentials of genetics: Genetic nomenclature- mutants and mutations-isolation and characterization of mutants-significance-analysis of mutants- genetic recombination-mapping- complementation analysis.

UNIT-II Microbial genome: Plasmids -characteristics-detection- types - plasmid replication- control of copy number- amplification- incompatibility. Transposons-types-structure- transposition-replicative and non-replicative.

UNIT-III Transformation: Griffith experiment-detection-natural competency- DNA uptake- molecular mechanism- gene linkage and mapping-artificial transformation.

UNIT-IV Conjugation:F factor-R factor-conjugation machinery- transfer of plasmid DNA-Hfr transfer- mapping- merodiploids.

UNIT-V Transduction: Life cycle of phage λ -generalized transduction- co transduction-mapping- specialized transduction- strain construction.

TEXTBOOK

Maloy, S. R., Cronan J. E. and Freifelder D (1994). Microbial Genetics 2nd edn, Jones and Bartlett publication.

REFERENCES

1. Nancy Trun and Janine Trempy (2004). Fundamentals of Bacterial Genetics, 1stedn.Blackwell Publishing Company.
2. Gardner, E. J., Simmons MJ and Snustad DP (1991). Principles of Genetics. 8thedn. John Wiley & Sons. New York.
3. Anthony JF Griffiths, Jeffrey H Miller, David T Suzuki, Richard C Lewontin, and William M Gelbart(2000).An Introduction to Genetic Analysis,6thedn. W.H Freeman and Company, New York.

MIC 1402 MICROBIAL PHYSIOLOGY AND METABOLISM 5Hrs/WK- 4Cr

This course provides students the components of physiology and metabolism of microbes. It emphasizes on the nutritional diversifications and uptake of nutrients by microbes and their growth. The students are exposed to the basic idea on nature of energy, concepts of thermodynamics and oxidation reduction reaction. It gives an opportunity to learn the basic principles and processes common to metabolism of all microbes.

Specific Learning Outcomes (SLO):

At the conclusion of the course, the student will be able to

- Explain microbial nutrition and mechanism of membrane transport.
- Describe how microbes regulate their structure and metabolism in response to environmental stimuli.
- Integrate and evaluate thermodynamic properties to appreciate biochemical reactions.
- Recognize the process and significance of converting light energy to chemical energy.
- Understand the processes of fat and protein metabolism.

UNIT-I Microbial nutrition: Macronutrients and micronutrients –growth factors – nutritional types of microorganisms. Uptake of nutrients – passive diffusion, facilitated diffusion, active transport, group translocation and ion uptake.

UNIT-II Microbial growth: Bacterial cell cycle –binary fission – growth curve – measurement of microbial growth - factors affecting bacterial growth , endospore formation , bioluminescence, biofilm, microbial cell to cell communication.

UNIT-III Basic concepts in thermodynamics: Laws of thermodynamics-Gibbs free energy-entropy and enthalpy-redox reactions-electron carriers-energy rich molecules-anabolism and catabolism.

UNIT-IV Metabolism of carbohydrates: Anaerobic metabolism- glycolysis and fermentation- aerobic metabolism- respiration- Kreb's cycle-electron transport and oxidative phosphorylation- chemiosmosis.

UNIT-V Metabolism of fats and proteins: Overview of fat metabolism – protein metabolism. Other metabolic pathways- bacterial photosynthesis- amino acid biosynthesis - interconversion.

TEXTBOOK

Daniel R. Caldwell (1995) Microbial Physiology and Metabolism, Wm.C.Brown Publication.

REFERENCES

1. Albert G. Moat, John W. Foster, Michael P. Spector (2004). Microbial Physiology, 4th edn, John Wiley & Sons International Publication.
2. Lehninger AL Nelson DL and Cox MM (2000). Principles of biochemistry, 5th edn. CBS Publishers and distributors. New Delhi. ISBN-10; 0716743396
3. Jacquelyn G. Black (2013) Microbiology, 8th edn, John Wiley & Sons International Publication

MIC 1232**NUTRITIVE VALUE OF FOOD****3Hrs/Wk - 2Cr**

This course is designed to make students understand the classification of foods based on nutrients and their functions. It provides information on classification, composition and nutritive value of vegetables, fruits, dairy products, fish, and meat and poultry food. This course also emphasizes the significance about food standards, functional, organic, GM foods and various strategies to overcome nutritional problems.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Understand the basic classification of food and its nutritive value.
- Learn about the constituents, composition and nutritional aspects of vegetables and fruits.
- Familiarize with quality processing, storage and preservation techniques of milk and milk products.
- Explore the detection and mechanism of spoilage in foods.
- Gain knowledge about the significance of next generation foods and strategies to combat nutritional problems.

UNIT – I Food and nutrition: Functional and nutritional classification of foods-calorific value of food-food pyramid-balanced diet. Food control - enforcement and control agencies.

UNIT - II Vegetables and fruits: Classification-composition and nutritive value- loss of nutrients-colour- texture-flavour. Browning reaction-storage and availability-methods of cooking. Nutritional aspects of raw and processed vegetables and fruits.

UNIT - III Dairy products and poultry: Milk and milk products-composition, classification-properties-quality processing-nutritive value of milk, butter, curd, butter milk, khoa, cheese, and ice-cream. Egg – structure and composition, grading, quality-selection, storage and preservation.

UNIT – IV Fish and meat: Classification-nutritive value- uses- spoilage of fresh and processed meat-detection and mechanism of spoilage-spoilage of fish-post-mortem changes-factors affecting tenderness.

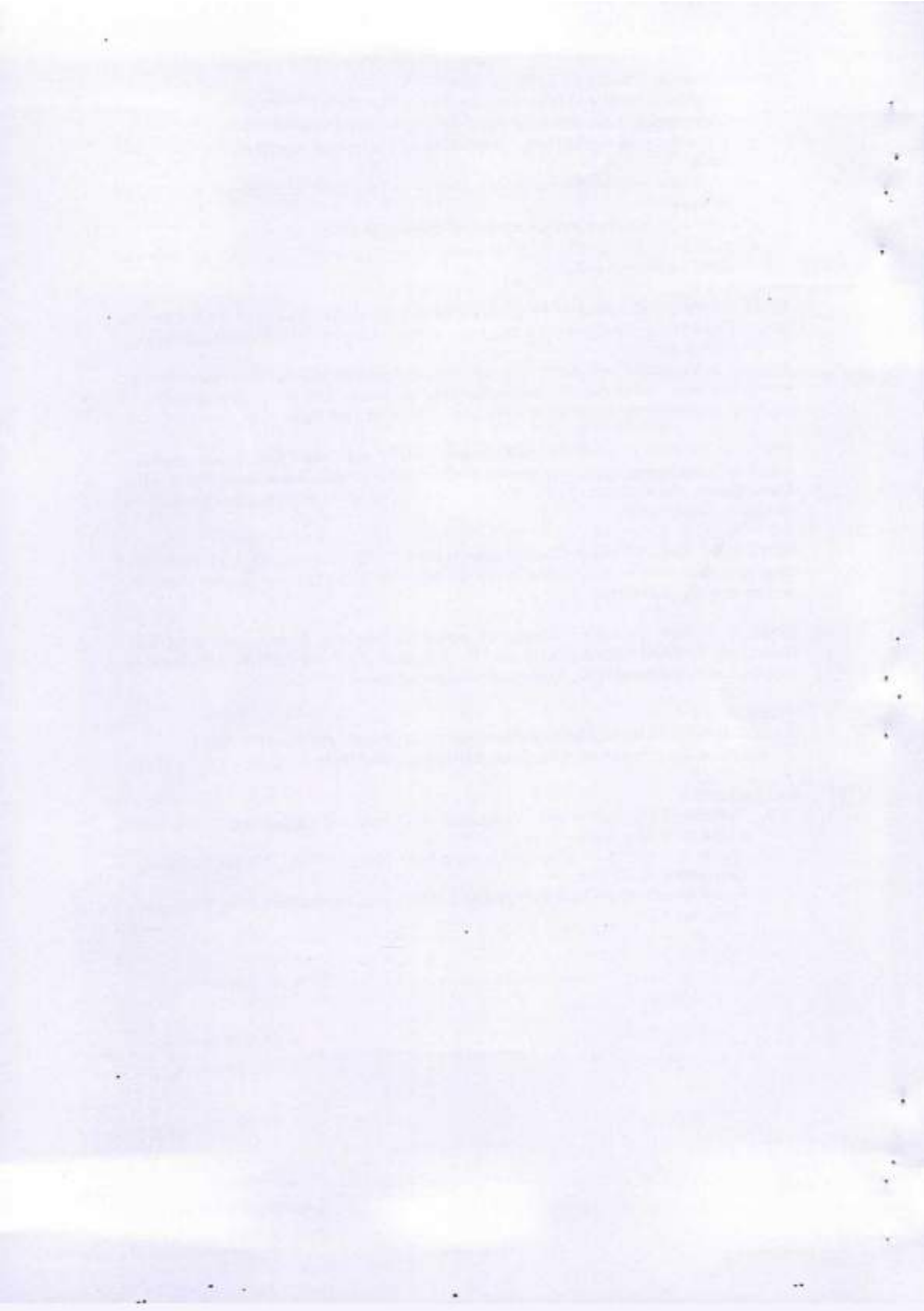
UNIT – V Food standards: -Basics of probiotics-functional foods-organic food and Genetically Modified (GM) foods. Strategies to combat nutritional problems-fortification-supplementation-immunization programme-nutrition education.

TEXT BOOK

Shakuntala Manay N and M. Shadaksharaswamy (2001) Foods – Facts and Principles, 2nd edn, New Age International (P) Limited, Publishers, New Delhi.

REFERENCES

1. Tripathy SN (2004) Food Biotechnology.1st edn, .Dominant Publishers and Distributors- New Delhi.
2. Adams M. R and M. O. Moss (2003) Food Microbiology, 2nd edn, Panima Publishing Corporation, New Delhi.
3. Paul P.C. and Palmer H.H. (1972) Food Theory and Applications, John Wiley and Sons, New York.



MIC 1242

HEALTH AWARENESS

3Hrs/Wk-2Cr

In this course, students will learn about the common health issues and understand the impact of illness, and the prevalence of diseases in the global scenario. This course will also emphasize the significance of health education, first-aid, and issues related to occupational health.

Specific Learning Outcomes (SLO):

Upon successful completion of this course, student will be able to

- Learn about the factors influencing health and individual responsibilities.
- Understand factors responsible for illness and its impacts.
- Acquire knowledge on the scope and importance of health education and health educator.
- Explore the basic concepts and practices for first-aid.
- Recognize the significance of issues related to occupational health hazards.

UNIT – I Health: Factors influencing health-types – physical – psychological – sociological health - attitudes and behaviour - health and individual responsibilities – hygiene practices.

UNIT - II Illness: Factors influencing illness – physiological and environmental - illness behaviour - types of illness – physical and psychological illness - impact of illness on patient and family - prevention.

UNIT – III Health education: Scope and principles – methods of health education – level and practices – planning and management - need of health education – responsibilities of health educator.

UNIT - IV First aid: Basic principles - types of wounds – bleeding - fracture – types. First - aid for abdominal injury, drowning, poisoning, and burns. Basic life support, lifting and transporting unconscious victim.

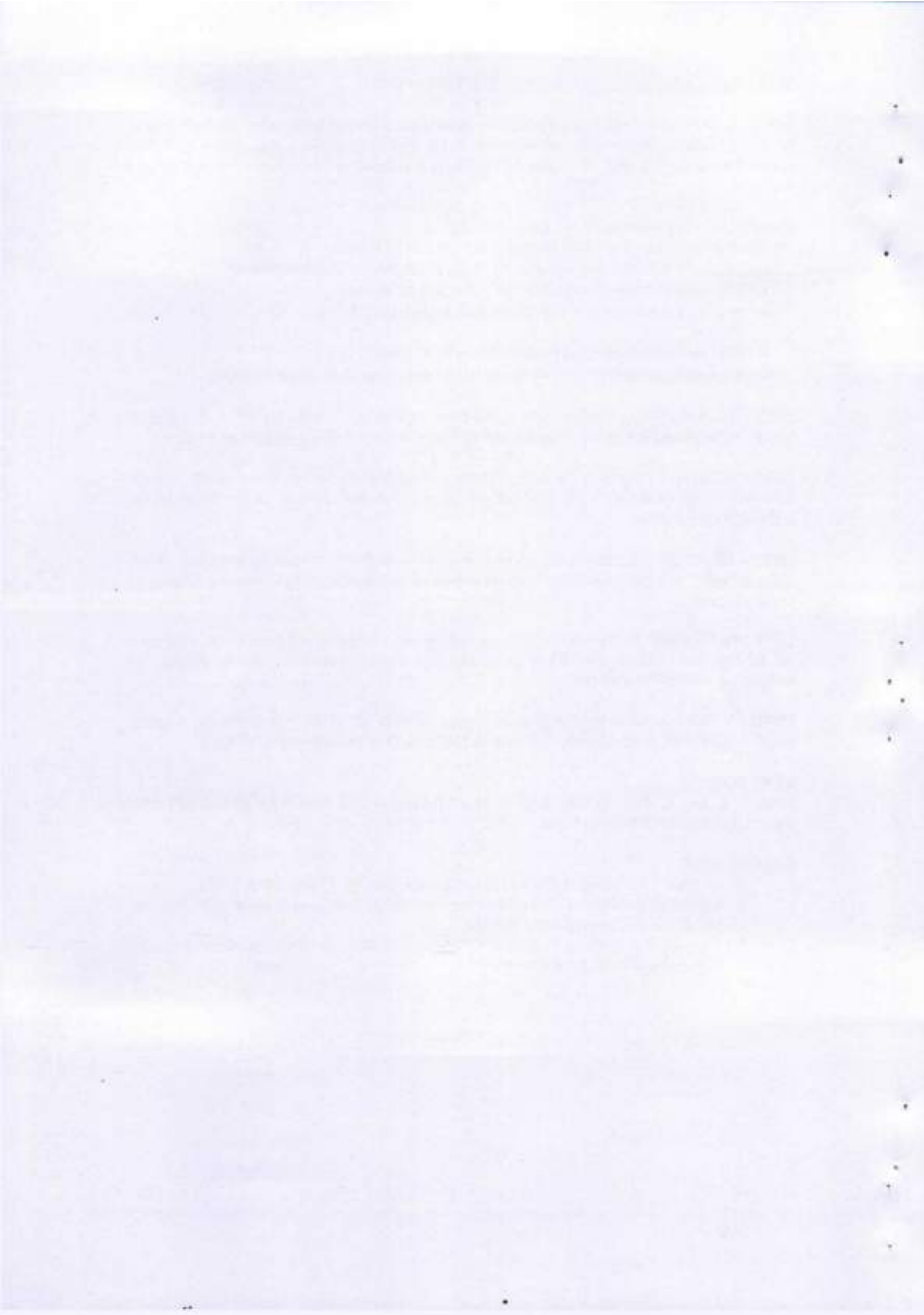
UNIT - V Occupational health issues: Global scenario of AIDS, Tuberculosis, Cancer. Health impact of IT professionals - women and child welfare. Health issues in India.

TEXT BOOK

Parker J. E. and K. Park (1989) Text Book of Preventive and Social Medicine, 12th edn. Banarsidas Bhanot Publishers, India

REFERENCES

1. St. John's Ambulance (2009) First Aid to the Injured, 3rd edn, New Delhi.
2. Melvin H. Williams (2005) Nutrition for Health, fitness and Sports, 7th edition, MC Graw Hill international Edition,
3. Karen Glanz, Barbara K. Rimer, K. Viswanath (2008) Health Behavior and Health Education, 4th edn, John Wiley & Sons.



PROGRAM / COURSE FRAME FOR B.Sc COMPUTER SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
CHOICE BASED CREDIT SYSTEM
Batch 2015-2016 onwards

Sem	Part	Course No.	Course Title	Hrs	Credit	Marks
1	I	XXXX	TAM/FRE/HIN Language	3	2	30
1	II	ENS 1201	Conversational Skills	3	2	30
1	III C	COS 1581	Programming in C	5	5	75
1	III C	COS 1483	Problem Solving Using C Programming Lab	4	4	60
1	III C	COS 1485	System Software	4	4	60
1	III S	COS 1487	Digital Principles and Computer Organization	5	4	60
1	IV E	COS 1281	PC Hardware and Troubleshooting	3	2	30
1	IV LS	COS 1283	Image Designing(TL)	3(2+1)	2	30
Total				30	25	375
2	I	XXXX	TAM/FRE/HIN Language	3	2	30
2	II	ENS 1202	Reading & Writing Skills	3	2	30
2	III C	COS 1582	Object Oriented Programming using C++	5	5	75
2	III C	COS 1484	C++ Programming Lab	4	4	60
2	III C	COS 1486	Computer Graphics	4(2+2)	4	60
2	III S	MAS XXXX	Discrete Mathematics	5	4	60
2	IV E	COS 1282	Introduction to Database Concepts	3	2	30
2	IV LS	COS 1284	Animation Technology(TL)	3(2+1)	2	30
2	V		PED/NSS/SLP		1	15
Total				30	26	390
3	I	XXXX	TAM/FRE/HIN Language	3	2	30
3	II	ENS 2201	Study Skills	3	2	30
3	III C	COS 2581	Java Programming	5	5	75
3	III C	COS 2483	Java Programming Lab	4	4	60
3	III C	COS 2585	Operating Systems	5	5	75
3	III C	COS 2587	Data Structures using C++	5(3+2)	5	75
3	III S	MAS XXXX	Graph Theory and its Applications	5	4	60
Total				30	27	405

Sem	Part	Course No.	Course Title	Hrs	Credit	Marks
4	I	XXXX	TAM/FRE/HIN Language	3	2	30

4	II	ENS 2202	Career Skills	3	2	30
4	III C	COS 2582	Relational Database Management Systems	5	5	75
4	III C	COS 2484	Oracle Lab	4	4	60
4	III C	COS 2586	Computer Networks	5	5	75
4	III C	COS 2588	Microprocessors and Micro Controllers	5	5	75
4	III S	COS 2488	Cloud Computing	5	4	60
4	V		PED/NSS/SLP		1	15
Total				30	28	420
5	III C	COS 3681	Web Programming(TL)	6(3+3)	6	90
5	III C	COS 3683	Project Development Lab I (TL)	6(2+4)	6	90
5	III C	COS 3685	Software Engineering	6	6	90
5	III C	COS 3587	Enterprise Resource Planning	5	5	75
5	IV VE	VAL	Value Education	4	2	30
5	IV LS	COS 3285	Audio / Video Editing(TL)	3(2+1)	2	30
Total				30	27	405
6	III C	COS 3682	.NET Programming(TL)	6(3+3)	6	90
6	III C	COS 3684	Project Development Lab II (TL)	6(2+4)	6	90
6	III C	COS 3686	Mobile Technologies(TL)	6(3+3)	6	90
6	III C	COS 3688	Business Intelligence and Data Analytics	5	5	75
6	IV EVS	COS 3200	Environmental Studies	4	2	30
6	IV LS	COS 3286	Network Security	3	2	30
Total				30	27	405
Grand Total (Semester I – VI)				180	160	2400

C: MAJOR CORE

S: MAJOR SUPPORTIVE

E: NON MAJOR ELECTIVE

VE: VALUE EDUCATION

LS: LIFE SKILL

Part III Supportive

Sem	Course No.	Course Title	Hours	Credits	Marks
3	COS 2481	Introduction to Programming in C (TL)	5 (3+2)	4	60
4	COS 2482	Introduction to Object Oriented Programming (TL)	5 (3+2)	4	60
		Total	10	08	120

Part IV Non-Major Electives

Sem	Course No.	Course Title	Hours	Credits	Marks
1	COS 1281	PC Hardware and Troubleshooting	3	2	30
2	COS 1282	Introduction to Database Concepts	3	2	30
		Total	6	4	60

Part IV Life Skill Courses

Sem	Course No.	Course Title	Hours	Credits	Marks
1	COS 1283	Image Designing(TL)	3(2+1)	2	30
2	COS 1284	Animation Technology(TL)	3(2+1)	2	30
5	COS 3285	Audio and Video Editing(TL)	3(2+1)	2	30
6	COS 3286	Network Security	3	2	30
		Total	12	8	120

COS143 PROGRAMMING IN C 5Hrs/5Cr**Objective**

This subject deals with the concepts of C programming language and to learn about algorithms, flowcharts and logical thinking. On successful completion of this course the student have the programming ability in C Language, and the student can do many application using C features

UNIT I

History of C – The C Character Set – Tokens – Identifiers – Keywords – Data Types – Constants - Variables – Operators – Structure of a C program – Formatted input/output functions – Unformatted input/output functions – Data Type Conversions – Control statements – Looping statements.

UNIT II

Arrays – Declaring Arrays – Accessing array elements – Initializing Arrays – Types of Arrays – Strings – String Library Functions.

UNIT III

Functions – Function Prototyping – Return statement – Nested functions – Types of functions – Recursion – Storage classes – Command line arguments – Pointer – Initialization of Pointers – Pointer Arithmetic – Pointers and Arrays – Pointers to Functions – Pointers to Pointers – Passing values to functions – Passing arrays to functions – Memory allocation.

UNIT IV

Structures – Declaration – Definition – Initialization – Nested Structures – Array of Structures – Structures and functions – Structures and pointers – Bits field – Unions.

UNIT V

Files – fscanf() and fprintf() – Character I/O from files –String I/O from files – Error Handling during I/O – Random Access – The Preprocessor.

Books for Reference:

1. Balagurusamy.E, " Programming in ANSI C", Sixth Edition, Tata McGraw Hill-2012.
2. Kanetkar Y, "Let us 'C' ", BPB publications, 2014,
3. Ashok N.Kamthane , "Programming in C" , Pearson Education, 2012.

COS143 PROBLEM SOLVING USING C PROGRAMMING LAB 4Hrs/4Cr**Objective**

The objective of the course is to learn basic principles of programming concepts in C. To develop skills for writing programs using 'C'. The student can do many application using C concepts and to improve problem solving abilities.

1. C operators
2. If structure
3. Loops and GOTO
4. Arrays
5. Functions

6. Recursion
7. String Handling
8. String handling library function
9. Call by value and Call by reference
10. Pointers
11. Memory allocation
12. Structures
13. unions, Bitfield , Typedef and enumerated data type
14. File operations and file functions
15. Random file and command line argument

COS485 SYSTEM SOFTWARE 4Hrs/4Cr

Objective

The course aims at giving a detailed understanding of various system software like assembler, loader, linker, compiler, debugging system and text editor. It Enable the student to get sufficient knowledge on various system resources.

UNIT I

Introduction to system software and machine structure - Instruction set and operation modes for various systems like SIC machine Architecture - SIC/XE Machine Architecture

UNIT II

Traditional machines – VAX Architecture – Pentium pro Architecture – RISC machines – Ultra SPARC Architecture – Power PC Architecture – Implementation examples

UNIT III

Assembler - Basic assembler functions - one pass assembler - two pass assembler - machine dependent and independent features - multi pass assembler - Implementation examples.

UNIT IV

Loader - Basic loader functions - machine dependent and independent loader features - loader design - Linker - Linkage editors - Dynamic linking - Bootstrap loaders - Implementation examples.

UNIT V

Compilers - Basic compiler functions - phases in a compiler - machine dependent and machine independent compiler features - Compiler design options - division in to passes - Implementation examples - software utilities - Text editors, interactive debugging systems.

Reference Book

1. L.L.Beck, "System Software: An Introduction to system programming", Addison Wesley Co, 3rd edition, 2007.
2. L.L. Beck, P. Manjula "System Software", Darling Kindersley (INDIA)pvt.LTD, 3rd edition 2007
3. Damhere, "Introduction to System Software", Tata McGraw Hill, 3rd edition 2008.

COS 147 – DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION – Hrs/4Ct**Objective:**

This course will expose the student to understand the fundamentals of digital principles and make the student to know the basic computer organization. This course helps to familiarize the student with Gates, Boolean algebra, processor and memory. The student can able to do projects related to hardware.

UNIT: I

Number Systems and Codes: Binary, Octal and Hexadecimal number systems –conversion between number systems – binary arithmetic- Binary codes – BCD-arithmetic. Boolean Algebra and Logic Gates: AND, OR, NOT, NAND, NOR, XOR and XNOR gates –Truth tables Applications of XOR Gate Fundamentals of Boolean Algebra — Laws and theorems of Boolean Algebra –Demorgan's theorems

UNIT: II

Simplification of Boolean Expressions : Canonical SOP and POS forms – Algebraic Simplification – Karnaugh Maps – NAND / NOR implementation of Boolean expressions —, Combinational Logic circuits : Half and Full Adders –Half and Full subtractors – BCD adder – parallel binary adder – Multiplexer & Demultiplexer – Encoder & Decoder.

UNIT: III

Sequential Logic circuits: NAND latch – SR, flipflop – JK flipflop – Edge triggering – PRESET and CLEAR inputs, Shift Register, Universal Shift register – Asynchronous and Synchronous counters – BCD counter.

Unit: IV

Basic computer organization and design – Instruction codes – computer register – computer instructions – timing and control – instruction cycle – memory reference instruction – input output and interrupt- General register organization – stack organization – instruction formats – addressing modes – data transfer manipulation – program control – RISC – Parallel processing

UNIT: V

Processors- CISC & RISC Architectures – CISC Family – RISC .Scalar processors – Super Scalar Processors and their features – Very Long Instruction-word Architecture vector & symbolic processors, Memory hierarchy Memory Hierarchy – main memory – Auxiliary memories – Associative memory – Cache memory – virtual memory – Memory management hardware.

REFERENCE(S)

1. Moris Mano, "Digital logic and computer design" –Pearson india, 1st edition, 2014.
2. A. P. Malvino, "Digital Principles and Applications"- McGraw Hill 8th Editions 2015
3. Morris Mano, "Computer System Architecture", 3rd edition, Prentice Hall, 2014.
4. Carl Hamacher, "Computer Organization", 5th edition, Tata McGraw Hill, 2014

COS1231 PC HARDWARE AND TROUBLESHOOTING 3Hrs/2Cr

Objective This course will enable student to gain confidence with the internal and external components of computer such as input devices, external devices, memory devices, types of memory. It can also help the student to be able to know various types of graphic adapter, types of printers, modem, sound boards and MIDI.

UNIT I

CPU: Layout of a typical desktop PC – Layout of typical tower PC. Power supply: Connecting the power supply – AT style power connections – Drive power connections – voltage tolerances.

UNIT II

Motherboards: Socket 7, Socket 8 – Layout and connector pin outs of intel motherboard. **Input Devices:** keyboard – construction – interfaces. Mouse: construction – mechanical and optical - mechanical sensors – trackball.

UNIT III

Printers: Dot matrix printers – ink jet printers – laser/LED printers- monitors – types of monitor- CRT – Laser – LED - Graphics adapter – VGA -SGA- Digital Visual Interface (DVI)-Video In Video Out (VIVO)

UNIT IV

Essential memory concepts – memory signals – memory package styles and structures. **Parallel port:** Addresses and interrupts – **Serial port:** serial port signals – Accelerated graphics port

UNIT V

Basic modem construction and operation: The internal modem – the external modem – advanced modem features. **Sound boards:** Recording and playback process – MIDI.

Book for Reference:

1. Stephen J. Bieglow, "Troubleshooting, Maintaining and repairing PCs", Tata Mc - Graw 5th edition 2013
2. Craig Zacker & John Rourke, "PC Hardware: The complete reference", Tata Mc - Graw hill, 1st edition 2012.
3. Govindarajulu. B, "IBM PC and clones: Troubleshooting and maintenance", Tata Mc - Graw hill, 2nd edition 2012.

COS1233 IMAGEDESIGNING 3HRS/2CR

Objective This course will enable student to design 2D images . The student will learn the basics of Adobe Illustrator, CorelDRAW and InDesign. In completion of this course the student will be able to create ,draw and design their own images and publish it.

Unit – I

Illustrator Workspace: Customizing the Workspace, Tools, Using multiple artboards, Rulers, grids, guides and Crop marks – **Drawing:** Drawing Basics, Drawing with Pencil tool, Drawing with Pen tool, Perspective Drawing, Symbols – **Painting:** Painting with fills and Strokes, Brushes, Transparency and blending modes, Gradients, Meshes, Patterns.

Unit – II

Selecting and arranging Objects: Selecting objects, Grouping and expanding objects, Locking hiding and Deleting objects – Reshaping Objects: Transforming objects, Scaling, Shearing and Distorting objects, Blending Objects, Creating 3D objects – Importing, Exporting and Saving: Importing files, saving artwork, Exporting artwork

Unit – III

CorelDRAW workspace: Workspace, Working with Dockers, Using the Toolbox - Importing, Exporting, and Saving Design Work: Opening Documents, Saving and closing documents, working with Templates, Importing and Exporting Files –

Unit – IV

Creating Basic Shapes: Rectangle Tool, Ellipse Tool, Polygons, Spiral Tool, Graph paper Tool, Perfect Shape tool .

Unit – IV

Setting Up the Document – Toolbox – Organizing the document: Column Specifications, Rulers, Guides – Inserting/Formatting Text - Type Menu – Working with Objects: Links, Placing Images, Enabling Text Warps, Grouping, Locking – Saving – Exporting to PDF

Reference Books:

1. Gary David Button, "CorelDraw X5 The Official Guide", The McGraw-Hill Companies, 2011
2. "Adobe Illustrator CS5 Classroom in a book", Adobe Systems Incorporated and its Licensors, 2010
3. "Adobe InDesign CS6 Classroom in a book", Adobe Systems Incorporated and its Licensors, 2010
4. http://help.adobe.com/archive/en_US/illustrator/cs5/illustrator_cs5_help.pdf
5. <http://www.itc.edu.kh/bib/ebook/storage/AdobeInDesignCS6.pdf>

COS152 OBJECT ORIENTED PROGRAMMING USING C++ 5Hrs/5Cr**Objective:**

To gain the basic knowledge of object oriented programming concepts and to understand the detail idea of C++ streams, templates and error handling concepts of C++ programming. This course helps to inculcate knowledge on Object-oriented programming concepts using C++.

The Student can create many kind of application software using this OOPs features.

UNIT I

Introduction to OOP – Object oriented paradigm – OOPs Features – Applications of OOP – Classes and Objects – Accessing class members – Defining member function – Passing objects as arguments – Returning objects from functions – Friend Function – Static data member - Static member functions - Inline Function - Function Overloading.

UNIT II

Constructor and Destructor functions – Types of Constructors – Characteristics of Constructor and Destructor - Operator overloading – Overloading unary and binary operators – Overloading with friend function – Rules for overloading operator.

UNIT III

Inheritance - Types of Inheritance - Advantages and Disadvantages of Inheritance - Polymorphism - Virtual Function - Pure Virtual Functions - Virtual Base Class - The this pointer - New and Delete Operator

UNIT IV

C++ Streams - Unformatted I/O Operations - Formatted Console I/O Operations - I/O Manipulators - File Handling - Error Handling Function - EOF - File Modes - Command line argument.

UNIT V

Exception Handling - List of Exceptions - Handling Uncaught Exceptions - Templates - Class Templates - Function Templates - Member function Templates - Class Templates and Inheritance.

Book for Reference:

1. Balagurusamy.E, "Object Oriented Programming with C++ ", Sixth Edition -Tata McGraw Hill - 2012.
2. Venugopal.K.R, Rajkumar, Ravishankar.T, "Mastering C++" , Tata McGraw Hill - 2003
3. Ashok N.Kamthane, "Object Oriented Programming with ANSI & Turbo C++", Pearson Education, 2012.
4. Bjanne Stroustrup, "The C++ Programmers Reference", 3rd Edition - Addison Wesley- 2000

COS1484 C++ PROGRAMMING LAB 4Hrs/4Cr

Lab Component**Objective:**

This course give the concepts of Object Oriented Programming skills. By performing this lab components, the student can solve the real life problems.

1. C++ environment
2. Functions
3. Classes and objects
4. Friend functions
5. Constructor and Destructor
6. Operator Overloading
7. Type conversion
8. Inheritance
9. Pointers
10. Files
11. Templates
12. Exception Handling

COS1486 (COMPUTER GRAPHICS(TE)) 4Hrs/4Cr

Objective The objective of the course is to impart the details about the building blocks of computer graphics algorithms for output primitives, filling, clipping, 2D and 3D transformation. It includes the principles of various graphics devices. In completion of this course the student will know the basics of multimedia programming.

UNIT I: Introduction, Application areas of Computer Graphics, overview of graphics systems, video - display devices, and raster - scan systems, random scan systems, graphics monitors and workstations and input devices.

UNIT II: Input devices. Output primitives: Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms. Filled area primitives: Scan line polygon fill algorithm, boundary fill and flood - fill algorithms

UNIT III: 2 - D geometrical transforms: Translation, scaling, rotation, reflection and shear transformations, matrix representations and homogeneous coordinates, composite transforms, transformations between coordinate systems.

UNIT IV: 2 - D viewing: The viewing pipeline, viewing coordinate reference frame, window to view - port coordinate transformation, viewing functions, point clipping - Cohen - Sutherland and Cyrus - beck line clipping algorithms, Sutherland -Hodgeman polygon clipping algorithm.

UNIT V: 3 - D viewing concepts - 3 - D Geometric transformations: Translation, rotation, scaling, reflection and shear transformations, composite transformations.

References:

1. By Donald D. Hearn, M. Pauline Baker, Warren Carithers, "Computer Graphics with Open GL", 4th edition, Pearson, 2010
2. Donald Hearn and M. Pauline Baker, "Computer Graphics", second Edition, PHI/Pearson Education, 2009.

Lab Component

1. Line Drawing – DDA, Bresenham's algorithm, Drawing a cuboid
2. Mid-point Circle drawing
3. Mid-point ellipse drawing
4. Drawing an object involving line, circle and ellipse
5. Polygon filling
6. Line clipping
7. Polygon clipping
8. Basic Transformation: Translation, Scaling, Rotation
9. Composite Transformation
10. Animating an object

COS 1282 INTRODUCTION TO DATABASE CONCEPTS 3Hrs/2Cr**Objective:**

This course enables the student to expose the fundamentals of Database Management Systems. It helps the student to understand the relational model and to familiarize the student with ER diagrams. In completion of this course the student can able to create and maintain the databases.

UNIT I

Introduction – Purpose of Database System – Views of data – Data Models – Database Languages – Database System Architecture – Database users and Administrator– Entity–Relationship model (E-R model) – E-R Diagrams – Introduction to relational databases

UNIT II

The relational Model – The catalog- Types– Keys - Fundamental operations -Relational Algebra — Additional Operations- - Integrity .

UNIT III

SQL Standards - Data types - Database Objects- DDL-DML-DCL-TCL-Embedded SQL-Static Vs Dynamic SQL - QUERY OPTIMIZATION: Query Processing and Optimization.

UNIT IV

Database Design – Functional Dependencies – Non-loss Decomposition – Functional Dependencies – First, Second, Third Normal Forms, Dependency Preservation – Boyce/Codd Normal Form-Multi-valued Dependencies and Fourth Normal Form – Join Dependencies and Fifth Normal Form.

UNIT V

Transaction Concepts - Transaction Recovery – ACID Properties – System Recovery –Media Recovery – Two Phase Commit - Save Points – SQL Facilities for recovery –Concurrency – Need for Concurrency.

Books for References

1. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, "Database System Concepts", Fifth Edition, Tata McGraw Hill, 2006 (Unit I and Unit-V) .
2. C.J.Date, A.Kannan, S.Swamynathan, "An Introduction to Database Systems",8th Edition, Pearson Education, 2006.(Unit II, III and IV)
3. Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of databaseSystems", Fourth Edition , Pearson / Addison wesley, 2007.

COS 1284 ANIMATION TECHNOLOGY(TL) 3Hrs/2Cr

Objective The aim of the course is to give an exposure to the student to create animations and cartooning using Flash. The action scripts are introduced to control and include interactivity in the movie created. In completion of this course the student can able to develop flash animation and write action script.

UNIT I Introduction to Animation - How flash works - Flash tool box - Creating Objects - Drawing characters for cartooning Editing objects - colors and texts - symbols and Instances - Bitmaps.

UNIT II Frames and layers - Animations in Flash - Key frame animations, Tweened Animations - Motion tween, Shape tween - Guide Layers - Masking - Publishing Flash movies.

UNIT III Action Script Basics - Constructing Action Script - Using Variables, Expressions and Operators, Bitwise Color, Flag variables.

UNIT IV Working with functions - Passing parameters, Scope, Predefined functions.

UNIT V Predefined Objects - Movie Clip and Button Objects, Math Objects, Stage Objects, Mouse and Key Objects, Sound Object - UI components

References:

1. "Adobe flash Professional CS6 Classroom in a book", Adobe Systems Incorporated and its Licensors, 2010
2. http://help.adobe.com/en_US/flash/cs/using/flash_cs5_help.pdf

Lab Component

1. Creating Objects, colors and text
2. Frame-by Frame animation
3. Usage of layers
4. Symbols
 - a. Insertion
 - b. Editing
5. Tweened animation
 - a. Motion tween
 - b. Shape tween
6. Animation using Guide layer
7. Masking
8. Buttons
9. Sounds
10. Action script

COS 2431 JAVA PROGRAMMING 5Hrs/5Cr

Objective : The objective of this course is to train the student in core Java concepts and giving exposure to advanced concepts of OOPs which tend to represent real world entities. In this course applet, swings, database interaction through JDBC and JSP are included. In completion of this course the student can able to create interactive web site.

UNIT I

Object oriented Programming concepts - Java features - JVM- Data types –variables - Operators – Control Strings - Arrays - Classes - Objects - Constructors – this keyword – Garbage collection

UNIT II

Method Overloading –Overloading Constructors - Recursion – Access control - Static Function – Command line arguments - Inheritance – Member access and inheritance - Multi level inheritance– Hierarchical inheritance

UNIT III

Method Overriding – Abstract class - Creating and using packages – Access protection – importing packages-Interfaces- Implementing interfaces – Nested interfaces

UNIT IV

Exception handling – Built in Exceptions- User defined Exceptions - Multithreading - Overview of I/O Streams- Applets - Life cycle of applet- AWT - Event handling - Swings – JDBC –Network Programming

UNIT V

JSP – Basics of JSP – Scripting elements – implicit objects – Directive elements – Action elements – JSP processing model- Developing simple server page

References

1. Balagurusamy "Programming with Java 4e A Primer" Tata Mc Graw Hill 5th Edition 2015
2. Patrick Naughton and Herbert Schildt, "Java 2 The Complete Reference", Tata Mc Graw Hill 7th edition 2014
3. <https://www3.ntu.edu.sg/home/ehchua/programming/java/JavaServerPages.html>

COS2483	JAVA PROGRAMMING LAB	4Hrs/4Cr
----------------	-----------------------------	-----------------

Objective:

The Objective of the course is to train the student to develop problem solving abilities using java application. It also help the student to build the necessary skill set and analytical abilities for developing java based software for real life problems.

Lab Components

1. Working with Array and flow control statement
2. Demonstrate the concept of command line arguments
3. Implementation of Single inheritance
4. Implementation of Multilevel inheritance
5. String Manipulation using Char Array.
6. Calculation of Student Total Mark using Interface
7. Implementing Thread based applications & Exception Handling.
8. File copy program
9. Checking Minimum Bank Balance using Userdefined exception
10. Database Creation for storing E-mail addresses and manipulation.
11. Creation of applet and passing parameter to applet
12. Calculation of Electricity bill using JDBC and Applet
13. Creation of Employee pay bill using JDBC and Swings
14. Login form using JDBC
15. Working with Panel and Layout control
16. Online Exam using JSP
17. Search Engine using JSP
18. Mail web page using JSP

Objectives:

This course enables the student to understand the basic knowledge of processes, Scheduling concepts, and memory management. This discussion will cover the tradeoffs that can be made between performance and functionality during the design and implementation of an operating system. In completion of this course the student can able to develop project in system software

UNIT I

Introduction: Views- Goals - OS Structure - Types of OS-Components - Services - system calls - System Structure -Virtual Machines - System Design and Implementation. Process Management: Introduction - Process -Process Scheduling - Operations on processes - Cooperating Process - Inter-process Communication. -Threads.

UNIT II

CPU Scheduling: CPU Schedulers - Scheduling Criteria - Scheduling Algorithms. Process Synchronization: Critical - Section Problem - Semaphores. Deadlocks: Characterization -Methods for Handling Deadlocks - Deadlock Prevention - Avoidance - Detection - Recovery.

UNIT III

Memory Management: Introduction- Address Binding - Dynamic Loading and Linking - Overlays-Logical and Physical Address Space - swapping - Contiguous Allocation - Internal & External Fragmentation. Non-Contiguous Allocation: Paging and Segmentation Schemes.

UNIT IV

Virtual Memory: Demand Paging - Page Replacement - Page Replacement Algorithms - Thrashing. File System: Introduction - File Concepts -. Access Methods - Directory Structures - Protection.

UNIT V

File System Structures - Allocation Methods - Free Space Management. I/O System: Introduction - I/OHardware - Application I/O Interface - Kernel I/O Subsystem - Disk Structure - Disk Scheduling - DiskManagement - Swap-Space Management.

Books for References:

1. Silberschatz Abraham, Galvin Baer Peter and Gagne Greg , "Operating System Concepts", Sixth Edition, 2010,John Wiley & Sons Pvt. Ltd.
2. Tanenbaum S. Andrew, "Modern Operating Systems", Third Edition, 2011, Prentice-Hall, Inc
3. Stallings William, "Operating Systems" , Seventh Edition, 2011,Pearson Education

COS2587 DATA STRUCTURES USING C++(TE) 5Hrs/5Cr

Objective: The aim of the course is to enable the student to build simple and complex data structures by applying object oriented concepts. Student are trained to develop algorithms and writing programs for the user defined data types such as Structures, Stacks, Queues, Lists and Trees. Also this course gives an in depth knowledge on Sorting, Searching and calculating the time complexity of the algorithms developed. In completion of this course the student can able to develop many real time application using efficient algorithm

UNIT I

Introduction – Arrays – Strings – Stacks – Operations on stack –Representation of Stacks using Array and Linked list - infix - prefix and Post fix notations - Evaluation of Post fix - infix- prefix expression- Applications of stacks

UNIT II

Queues – Operations on queue -Representation of queue using array and linked list –Circular Queue – Operation on Circular queue - Representation of Circular queue using array and linked list

UNIT III

Linked List – Operations on linked list-Types of Linked List- Single Linked List- Operation on Single linked list - Double Linked list – Operations on Double Linked List

UNIT IV

Trees – Binary tree – Traversal of a Binary tree – Applications of Binary Tree - Binary Search Tree- Operations on Binary search tree – Applications of Binary search tree

UNIT V

Sorting - Bubble sort - Selection sort - Insertion sort - Quick sort - Merge sort –Search – Linear Search – Binary Search

References

1. Yashavant kanetkar "Data structures using C++", BPB publications 2nd edition 2011
2. Sahni Sartaj, "Data Structures using C++", TMH 2nd edition 2012

COS2481 INTRODUCTION TO PROGRAMMING IN C(TE) 5Hrs/4Cr**Objective**

This subject deals with the concepts of C programming language and to learn about algorithms, flowcharts, programs to solve problems through logical thinking. On successful completion of this course the student have the programming ability in C Language, and the student can do many application using C features

UNIT I

History of C – The C Character Set – Tokens – Identifiers – Keywords – Data Types – Constants - Variables – Operators – Structure of a C program – Formatted input/output functions – Unformatted input/output functions – Data Type Conversions – Control statements – Looping statements.

UNIT II

Arrays – Declaring Arrays – Accessing array elements – Initializing Arrays – Types of Arrays – Strings – String Library Functions.

UNIT III

Functions – Function Prototyping – Return statement – Nested functions – Types of functions – Recursion – Storage classes – Command line arguments – Pointer – Initialization of Pointers – Pointer Arithmetic – Pointers and Arrays – Pointers to Functions – Pointers to Pointers – Passing values to functions – Passing arrays to functions – Memory allocation.

UNIT IV

Structures – Declaration – Definition – Initialization – Nested Structures – Array of Structures – Structures and functions – Structures and pointers – Bits field – Unions.

UNIT V

Files – fscanf() and fprintf() – Character I/O from files – String I/O from files – Error Handling during I/O – Random Access – The Preprocessor.

Books for Reference:

1. Balagurusamy.E, "Programming in ANSI C", Sixth Edition, Tata McGraw Hill-2012.
2. Kanetkar Y, "Let us 'C'", BPB publications, 2014,
3. Ashok N.Kamthane, "Programming in C", Pearson Education, 2012.

COS2582-RELATIONAL DATABASE MANAGEMENT SYSTEM 5Hrs/5Cr

Objective: This course enables the student to understand RDBMS concepts using Oracle SQL and PL/SQL. This course will expose the student to understand the fundamentals of Transaction Processing and Query Processing. It also improves the knowledge on Oracle Programming techniques. In completion of this course the student can create many kind of database application.

UNIT-I: Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams – De-normalization .

UNIT-II: Overview: Personal Databases – Client/Server Databases –SQL *Plus Environment – SQL – Logging into SQL *Plus - SQL *Plus Commands – Errors & Help – Alternate Text Editors -Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table -Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

UNIT III

Working with Table: Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions –Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations.

UNIT IV

PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures -Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions.

UNIT V

Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT...FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.PL/SQL Composite Data Types– Records – Tables – arrays – Named Blocks Procedures – Functions – Packages –Triggers –Data Dictionary Views.

References

1. Fundamentals of Relational Database Management Systems,S. Sumathi, S. Esakkirajan, Springer Science & Business Media, 1st edition 2007
2. Korth. H and Abraham SilberSchatz, "Database Management Systems", McGraw Hill, Sixth Edition-2011
3. Nilesh Shah , " DATABASE SYSTEMS USING ORACLE" , 2nd edition, PHI. (UNIT-I: Chapters 1 & 2 UNIT-II: Chapters 3 & 4 UNIT III: Chapters 5 & 6 UNIT-IV: Chapters 10 & 11 UNIT-V: Chapters 12,13 & 14):2004
4. Arun Majumdar & Pritimoy Bhattacharya, "DATABASE MANAGEMNET SYSTEMS" –2007, TMH.
5. Gerald V. Post , "DATABASE MANAGEMET SYSTEMS", 3rd edition, TMH.-2008.

COS2484**ORACLE EAB****4Hrs/4Cr****Objective:**

The Objective of the course is to train the student to be able to work on the basic concepts in Oracle.It also helps the student to build the necessary skill to develop solutions for real life problems.

1. Creating database tables and using data types.

Create table, Modify table, Drop table

2. Practical Based on Data Manipulation.

Adding data with Insert, Modify data with Update, Deleting records with Delete

3. Practical Based on Implementing the Constraints.

NULL and NOT NULL, Primary Key and Foreign Key Constraint, Unique, Check and Default Constraint

4. Practical for Retrieving Data Using following clauses.

Simple select clause, Accessing specific data with Where, Ordered By, Distinct and Group By

5. Practical Based on Aggregate Functions.

AVG, COUNT, MAX, MIN, SUM.

6. Practical Based on implementing all String functions.

7. Practical Based on implementing Date and Time Functions.

8. Practical Based on implementing use of union, intersection, set difference.

9. Implement Nested Queries & JOIN operation.

10. Practical Based on performing different operations on a view.

12. Practical Based on implementing use of triggers, cursors & procedures in PL/SQL.

13. Make Database connectivity with front end tools

COS 2586 COMPUTER NETWORKS 5Hrs/5C

Objective The objective of this course is to understand various issues in constructing networks and to perceive what is important in architecture design of networks. It also includes the functioning of layers and application of networks and also the different standards used between networks. In completion of this course the student will know how to establish a secured network and communicate within it.

UNIT – I

Introduction to Computer Communications and Networking Technologies; Uses of Computer Networks; Network Devices - Nodes, and Hosts; Types of Computer Networks and their Topologies; Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; Network Applications and Application Protocols; Network Architecture and the OSI Reference Model; TCP/IP reference model

UNIT – II

Analog and Digital Communications Concepts: Representing Data as Analog Signals, Representing Data as Digital Signals; Digital Carrier Systems; Guided and Wireless Transmission Media; Switching and Multiplexing;

UNIT – III

Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction; Media Access Control: Random Access Protocols, Token Passing Protocols; Token Ring; Introduction to LAN technologies:

Unit – IV

Ethernet, switched Ethernet, VLAN, fast Ethernet, gigabit Ethernet, token ring, Wireless LANs; Bluetooth; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways;

UNIT – V

Network Layer and Routing Concepts: Virtual Circuits and Datagrams; Routing Algorithms; Congestion Control Algorithms; Internetworking; Network Security Issues: Security threats; Encryption Methods; Authentication; Symmetric –Key Algorithms; Public-Key Algorithms.

REFERENCE BOOKS:

1. Andrew S. Tanenbaum, "Computer Networks", Pearson Education, 5th ed, 2010
2. James F. Kurose, Keith W. Ross "Computer networking : a top-down approach" ,6th ed, 2013.
3. Behrouz A Forouzan, "Data Communications and Networking", McGraw Hill, 4th ed, 2007

COS 2587 MICROPROCESSORS AND MICROCONTROLLERS 5Hrs/5C

Objectives:

The objective of this course is enables the student to give a detailed explanation about the internal structure of a microprocessor and microcontroller. It also gives the basic concepts of interfacing and multiprocessing concepts. In completion of this course the student can able to develop project in system software

UNIT I

THE 8085 AND 8086 MICROPROCESSORS: Introduction to Micro computer Evolution of microprocessor - Software model – Data types – registers: Segment registers – Pointer and index registers-Status registers –Generating a memory address

UNIT II

8086 SOFTWARE ASPECTS: Intel 8086 microprocessor - Architecture - Signals-Instruction Set-Addressing Modes-Assembler Directives- Assembly Language Programming-Procedures-Macros-Interrupts and Interrupt Service Routines-BIOS function calls.

UNIT III

MULTIPROCESSOR CONFIGURATIONS: Coprocessor Configuration – Closely Coupled Configuration – Loosely Coupled Configuration –8087 Numeric Data Processor – Data Types – Architecture –8089 I/O Processor –Architecture –Communication between CPU and IOP.

UNIT IV

I/O INTERFACING:Memory interfacing and I/O interfacing with 8085 – parallel communication interface –serial communication interface – timer-keyboard/display controller – interrupt controller –DMA controller (8237) – applications – stepper motor – temperature control.

UNIT V

MICROCONTROLLERS:Architecture of 8051 Microcontroller – signals – I/O ports – memory – counters and timers – serial data I/O – interrupts-Interfacing -keyboard, LCD,ADC &DAC.

REFERENCES:

1. Ramesh S. Gaonkar ,”Microprocessor – Architecture, Programming and Applications with the 8085”, Penram International Publisher , 5th Ed.,2006
2. Kenneth J.Ayala, “The 8051 microcontroller Architecture, Programming and applications” second edition ,Penram international.2008
3. Douglas V.Hall, “ Microprocessors and Interfacing : Programming and Hardware”, second edition Tata Mc Graw Hill ,2006.
4. A.K.Ray & K.M Bhurchandi, “Advanced Microprocessor and Peripherals – Architecture, Programming and Interfacing”, Tata Mc Graw Hill , 2006.

COS2488**CLOUD COMPUTING****5Hrs/4C****Objective:**

This course enable the student to learn different types of cloud computing services and make a cloud computing application unique, managing and working with cloud security. In completion of this course the student will know how to create accounts and use cloud services.

UNIT I

Defining Cloud Computing: Definition - Cloud Types - Characteristics of Cloud Computing - Role of Open standards - Cloud Architecture: Cloud Computing Stack: Composibility.

UNIT II

Infrastructure - Platforms - Virtual Appliances - Communication protocols - Applications - Connecting to the cloud - Cloud Services: Infrastructure as a Service - Platform as a Service - Software as a Service

UNIT III

Identity as a Service - Compliance as a Service - Platforms: Load balancing and visualization - Understanding Hypervisors - Cloud Security: Securing the Cloud.

UNIT IV

Securing the data - Moving applications to the cloud - Cloud Storage: Definition - Provisioning - Cloud storage - Cloud Backup solutions - Cloud storage Interoperability

UNIT V

Moving applications to the Cloud - Case Study: Google Web Services, Amazon Web Services - Microsoft Cloud Services.

Reference Books:

1. Barrie Sosinsky, "Cloud Computing Bible", Wiley India Pvt. Ltd., 2011.
2. Roger Jennings, "Cloud Computing with Windows Azure Platform", Wiley India Pvt. Ltd., 2009.
3. Miller Michael, "Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online", Que Publishing, 2008.

Web Resources:

1. <http://www.mb.net/resources/cloud-computing-resources.aspx>
2. <http://www.mastertheboss.com/cloud-computing/in-the-cloud-computing-a-beginners-tutorial>
3. <http://www.south.cattelcom.com/technologies/cloudcomputing/index.aspx>

COS2482 INTRODUCTION TO OBJECT ORIENTED PROGRAMMING (C++)**SHS/AC****Objective:**

To gain the basic knowledge of object oriented programming concepts and to understand the detail idea of C++ streams, templates and error handling concepts of C++ programming. This course helps to inculcate knowledge on Object-oriented programming concepts using C++. The Student can create many kind of application software using this OOPs features.

UNIT I

Introduction to OOP - Object oriented paradigm - OOPs Features - Applications of OOP - Classes and Objects - Accessing class members - Defining member function - Passing objects as arguments - Returning objects from functions - Friend Function - Static data member - Static member functions - Inline Function - Function Overloading.

UNIT II

Constructor and Destructor functions - Types of Constructors - Characteristics of Constructor and Destructor - Operator overloading - Overloading unary and binary operators - Overloading with friend function - Rules for overloading operator.

UNIT III

Inheritance - Types of Inheritance - Advantages and Disadvantages of Inheritance - Polymorphism - Virtual Function - Pure Virtual Functions - Virtual Base Class - The this pointer - New and Delete Operator

UNIT IV

C++ Streams - Unformatted I/O Operations - Formatted Console I/O Operations - I/O Manipulators - File Handling - Error Handling Function - EOF - File Modes - Command line argument.

UNIT V

Exception Handling - List of Exceptions - Handling Uncaught Exceptions - Templates - Class Templates - Function Templates - Member function Templates - Class Templates and Inheritance.

Book for Reference:

1. Balagurusamy.E, "Object Oriented Programming with C++ ", Sixth Edition -Tata McGraw Hill - 2012.
2. Venugopal.K.R, Rajkumar, Ravishankar.T, "Mastering C++" , Tata McGraw Hill - 2003
3. Ashok N.Kamthane, "Object Oriented Programming with ANSI & Turbo C++", Pearson Education, 2012.
4. Bjanne Stroustrup, "The C++ Programmers Reference", 3rd Edition - Addison Wesley- 2000

COS3681 WEB PROGRAMMING(TL) 6Hrs/6Cr

Objective The objective of this course is how to develop web pages using Mark up languages, PHP and MySQL. It also gives an exposure to maintain the websites developed. In completion of this course the student will be able to develop dynamic websites.

UNIT - I:

Introduction to HTML : Document type, sections of HTML document, creating a HTML page -Tables - Links and Images: Adding Links, Adding Images -CSS: Introduction, Connecting CSS to a page, Targeting Styles, changing fonts, Adding borders, Creating Page layouts - Web Forms: Using Web Forms, Creating a form.

UNIT - II:

Introduction to Javascript: Adding the JavaScript tag, Adding JavaScript to HTML pages, Using external JavaScript - Building a JavaScript program: JavaScript Programming, Functions, Objects - Adding jQuery: Introduction, Installing jQuery, Adding jQuery to a page, Working with HTML using jQuery.

UNIT - III:

Introduction to PHP: Structure of PHP script, Syntax, Variables, Constants, Data types, Arrays - Building PHP scripts: Setting up conditions, Conditional Statements, Repeating Actions with Loop, Using Functions, Organizing Scripts.

UNIT - IV:

PHP and Your Operating System: Managing Files, USING FTP, Reading and Writing Files – Object-Oriented Programming: Introduction, Developing object-oriented script, class, Using a class, Handling Errors with Exceptions, PHP security: Securing the Server, Handling Errors Safely.

Unit – V :

Introduction to MySQL: Understanding Database Structure, Communicating with MySQL, Administrating MySQL: Controlling Access to your Data, Backing Up your Database, Restoring Your Data – Designing and Building a Database: Designing a Database, Building a Database – Using the Database :Data Manipulations– Communicating with the Database from PHP scripts: PHP functions that Communicate with MySQL, Communicating with MySQL.

Reference:

1. Steve Suehring, Janet Valade, "PHP, MySQL, JavaScript & HTML5 All-in-One for Dummies", John Wiley and Sons, Inc, 1st edition, 2013.

Lab Component

1. Basic HTML Tags
 - a. HTML, Head, Title, Body Tags
 - b. Formatting Tags
 - c. Listing (ordered and un-ordered), Image, hyperlinks
 - d. Table Tags, Frames, Forms
2. Style sheets
 - a. Internal, External
3. JavaScript
 - a. Dynamic web pages
 - b. Image map, Internal Scripts, External scripts
 - c. Control structures
 - d. Objects (String, Date, Math, Array, Boolean)
 - e. Cookies, Browser, Validation
4. PHP
 - a. Control structures, Arrays
 - b. Database connectivity
 - c. Session

COS 3683 PROJECT DEVELOPMENT LAB (ITL) 6Hrs/6Ct

Objective

The main objective of the project development lab is to introduce the student to the methodology for solving a problem and preparing a report using the steps of software engineering. The course also aims at improving the project developments skills of the student by giving required lab practices. It helps to motivate them to work in emerging/latest technologies. It can also helps the student to develop ability, to apply theoretical and practical tools/techniques to solve real life problems.

Based on case study the following lab components need to be done by student

1. Planning a problem
2. Analyzing the problem
3. Requirement analysis
4. Designing prototype
5. Table Design
6. Data Flow Diagram
7. Coding
8. Testing
9. Implementation
10. Maintenance

Suggested Case study topics:

Student may take any one of the topics listed below

1. Client/server application
2. Network Security
3. Embedded System
4. Image Processing
5. Data Mining
6. Distributed Networks
7. Software Engineering
8. Mobile Computing
9. Parallel And Distributed Systems
10. Grid Computing

Evaluation pattern

It adopts the evaluation pattern of a lab course of our college which contains 75% mark allotment for the continuous assessment using objective tests and 25%marks allotment for final case study report submission.

COS3685 SOFTWARE ENGINEERING 6Hrs/6Cr

Objective:

The aim of the course is to train the student to analyze, estimate and design a new software with quality standards. In this paper, basic concepts in Software engineering, software processes, various software engineering paradigms, Requirements Engineering various analysis and design strategies are incorporated, Software testing methods and quality maintenance strategies are included. In completion of this course the student can able to develop any kind of software by using steps of SDLC

UNIT I

Software Characteristics – Introduction to Software Engineering – Factors Influencing quality and productivity – Software Process – CMM – PSP – TSP – Software Engineering Models – Cost Estimation – Feasibility Analysis – Software Project Management

UNIT II

System Engineering – Requirement Engineering – Requirements Documentation – Requirement Elicitation – Requirement Analysis and Negotiation – Requirement validation – Requirement Management

UNIT III

System Analysis – Information Flow Analysis – DSSD – OOA – Use Case Modelling – Class Modelling – Design Engineering – Creating Architectural Design – Modelling Component level design – User Interface design – Transform and Transaction Analysis – OOD

UNIT IV

Introduction - UML - Goals - Types of UML diagrams – Object Class diagram - Object diagram - Use case diagram - Sequence diagram - Collaboration diagram - Activity diagram - State chart diagram - Deployment diagram - Component diagram.

UNIT V

Testing principles- Testing strategies – Unit testing – Integration testing – White Box Test - Black Box Testing – OOTM – Domain Testing – Implementation – Software Maintenance – Issues in Maintenance – Software Quality and Quality Assurance .

References:

1. Roger S. Pressmen, "Software Engineering A Practitioners Approach", Tata McGraw Hill, 7th Edition, 2010
2. Richard Fairley, "Software Engineering", Tata McGraw – Hill Education Private limited, 2nd edition, 2008
3. William Henry, "Effective Methods Of Software Testing", International book house Pvt.Ltd, 2nd Edition, 2008
4. Richard Fairley, "Software Engineering Concepts" , Tata McGraw – Hill Education Private limited, 2012-Edition .

COS 3587 **ENTERPRISE RESOURCE PLANNING** **5Hrs/5Cr**

Objective: The objective of the course is to enable the student to understand the evolution of ERP, related technologies, benefits and types of modules. In completion of this course the student will improve necessary skills such as Improve Service Experience, Enhance Competitiveness, Automate Business Solutions and Increase Operating Efficiency

UNIT I

Introduction to ERP- Its Evolution, its Growth, Its Advantages , Its need, Integrated Management information, Business Modeling, Integrated Data Model. Chain – Supply and demand chain-Extended Supply chain.

UNIT II

ERP and Related Technologies- BPR, MIS, DSS, EIS, Data Warehousing, Data Mining, OLAP . A Manufacturing Perspective-MRP, BOM, Closed Loop MRP,MRP-II,DRP,JIT and Kanban, CAD/CAM, PDM, Data Management, Benefits of PDM,MTO and MTS,ATO,CRM.

UNIT III

Benefits of ERP, ERP Modules – Finance, Plant Maintenance, Quality Management, Materials Management. ERP Market : SAP AG, People Soft, BAAN and ORACLE, JD Edwards.

UNIT IV

ERP Implementation Life Cycle – Pro-evaluation Screening, package Evaluation, Project planning phase, Gap – Analysis, reengineering, Configuration, implementation team-Training, Testing ,Going Live, END-User Training .Post implementation, Business Models and BAPIs. Convergence on Windows NT, Application platforms, New Business segment and Features

UNIT V

ERP Procurement Issues – Market Trends – Outsourcing ERP – Economics – Hidden Cost Issues – ROI – Analysis of cases from five companies.

REFERENCE BOOKS:

1. Alexis Leon , “Enterprise Resource Planning” – Third Edition Tata McGraw-Hill, New Delhi.
2. Alexis Leon, “ERP Demystified”, Tata McGraw Hill
3. Rahul V. Altekar “Enterprisewide Resource Planning”, Tata McGraw Hill,
4. Vinod Kumar Garg and Venkitakrishnan N K, “Enterprise Resource Planning – Concepts and Practice”, PHI
5. Joseph A Brady, Ellen F Monk, Bret Wagner, “Concepts in Enterprise Resource Planning”, Thompson Course Technology

COS 3235 AUDIO/VIDEO EDITING(TL) 3Hrs/2Cr

Objective

The course aims to introduce various components of a movie and sound. This course trains the student to enhance and edit a movie using movie editing tools. The student who have good creativity can visualize their imagination through this course.

UNIT I

Introduction to audio and video file formats – Loading clips – Creating a storyboard – Adding text to storyboard – Adding clips in the timeline – Adding video effects

UNIT II

Obtaining Music – Video editing – Video forms – storyboards and music concepts

UNIT III

Creating 3D text effects and importing into a movie – Adding effects – Mixing audio and video files

UNIT IV

Adding digital effects – Using authoring tools for Audio and video enhancements

UNIT V

Adding titles – Sound overdubs – narration – superimposing images

References:

1. “Adobe Premiere Pro CS6 Classroom in a Book”, 2013 Adobe Systems Incorporated and its licensors.
2. http://help.adobe.com/archive/en/premiere-pro/cs6/premiere_pro_reference.pdf
3. Manuals of Adobe Premiere, Ulead 3D text

COS 3682 .NET PROGRAMMING (TL) 6Hrs/6Cr

Objective:

The objective of the course is to understand the fundamental concepts of .net framework, Visual Basic.Net, ADO.NET and enable the student to write programs. Also this course includes a detail description on .NET framework, VB.NET, ASP.NET, Web service and ADO.NET, In completion of this course the student can able to develop window and dynamic web application.

UNIT I

Introduction to .NET Evolution - .NET platform – advantage of .NET – working of .NET, - .NET framework – common language runtime (CLR) – Basic Architecture of .NET framework – common language specification

UNIT II

Introduction to VB.NET – Data types and operators – control statement – Arrays

UNIT III

Procedures and structures – OOPs in VB.NET – Delegates – Event Handling – Exception Handling – Working with forms

UNIT IV

Concept of Database – database models – overview of ODBC – Introduction to ADO.NET - ADO.NET component model - ADO.NET Architecture – windows application using ADO.NET – Advantages of using ADO.NET – Data access with XML – Crystal Report

UNIT V

Introduction ASP.NET – Features of ASP.NET, Structure of an ASP.NET webpage – using common web controls – Creating simple web applications – creating web application using database connectivity – web services

References:

1. Shirish Chavan, "Visual Basic .Net", Dorling Kindersley(India)Private limited, 3rd Edition, 2009
2. P. Radhaganesan, "VB.NET", SCITECH Publication (India) Pvt. Ltd. 3rd Edition, 2008.
3. Vikas Gupta, ".Net Programming", Kogent Solutions Inc. 2007- edition
4. Mac Donald, Dan Mabbutt, Adam "ASP.NET ",Springer (INDIA) Private limited, 3rd Edition, 2011

COS 3684 PROJECT DEVELOPMENT LAB II (TL) 6Hrs/6Cr

Objective

The main objective of the project development lab is to introduce the student to the methodology for solving a problem and preparing a report using the steps of software engineering. The course also aims at improving the project developments skills of the student by giving required lab practices. It helps to motivate them to work in emerging/latest technologies. It can also helps the student to develop ability, to apply theoretical and practical tools/techniques to solve real life problems.

Based on case study the following lab components need to be done by student

1. Planning a problem
2. Analyzing the problem
3. Requirement analysis
4. Designing prototype
5. Table Design
6. Data Flow Diagram
7. Coding
8. Testing
9. Implementation
10. Maintenance

Suggested Case study topics:

Student has to take any one of the topic listed below other than he/she selected in Project Development lab I

1. Client/server application
2. Network Security
3. Embedded System
4. Image Processing
5. Data Mining
6. Distributed Networks
7. Software Engineering
8. Mobile Computing
9. Parallel And Distributed Systems
10. Grid Computing

Evaluation pattern

It adopts the evaluation pattern of a lab course of our college which contains 75% mark allotment for the continuous assessment using objective tests and 25%marks allotment for final case study report submission.

COS 3697 MOBILE TECHNOLOGIES(II) 6Hrs/6C

Objective:

This course enables the student to learn the basics of Wireless voice and data communications technologies. It also enables student to know more about android OS and iOS applications. In completion of this course the student can able to develop many kind of mobile application.

UNIT I

Introduction – Wireless transmission – Frequencies for radio transmission – MAC – SDMA – FDMA – TDMA – CDMA– GSM– GPRS – Blue Tooth .

UNIT II

Overview of Android OS: Features of Android, Android Applications - Environment Setup: Setup JDK, SDK, Eclipse IDE, ADT, Create Android Virtual Device – Architecture: Linux Kernel, Libraries, Android Runtime, Application Framework, Applications

UNIT III

Application Components: Activities, Services, Broadcast Receivers, Content Providers, Additional Components – Hello World Example: Create Android Application, Anatomy of Android Application, The Main Activity File, The Manifest File, The Strings File, The R File, The Layout File, Running the Application.

UNIT IV

Getting Started: Registering as an Apple Developer, Apple iOS Developer Program – Environment Setup: Interface Builder, iOS simulator – Objective C: Interface and implementation, Object Creation, Methods, Important data types in Objective C, Printing logs, Control Structures, Properties, Categories, Arrays, Dictionary – First iPhone Application: Digging deep into the Code of the first iOS application.

UNIT V

PhoneGap Overview: Introduction, PhoneGap – Environment Setup: Configuration – Icons – App Contents: Offline App, Online App, Sign Your App – App Compilation

Reference:

1. Jochen Schiller, "Mobile Communications", PHI/Pearson Education, Second Edition, 2003.
2. http://www.tutorialspoint.com/android/android_tutorial.pdf
3. http://www.tutorialspoint.com/ios/ios_tutorial.pdf
4. http://www.tutorialspoint.com/phonegap/phonegap_tutorial.pdf

COS3688 BUSINESS INTELLIGENCE AND DATA ANALYTICS 5Hrs/5Cr

Objective:

This course enables the student to learn the basics of Data mining , Data warehouse concepts and Big data. The objective of business intelligence is to improve the timeliness and quality of information. . In completion of this course the student can able to develop business skill such as company-wide access to a concise, Easy-to-use reporting, the ability to respond with speed and agility to changing business conditions using effective, corresponding actions.

UNIT I

Relation to Statistics, Databases - Data Mining Functionalities - Steps in Data Mining Process-Architecture of a Typical Data Mining System - Classification of Data Mining Systems - Overview of Data Mining Techniques.

UNIT II

Data Mining Functionalities - Association Rule Mining - Mining Frequent Item sets with and without Candidate Generation - Mining Various Kinds of Association Rules - Constraint-Based Association Mining.

UNIT III

Data Warehousing - Operational Database Systems vs. Data Warehouses - Multidimensional Data Model - Schemas for Multidimensional Databases – Data Warehouse Architecture

UNIT IV

Data Warehousing Components - Data Warehouse Implementation - Mapping the Data Warehouse to Multiprocessor Architecture - OLAP Operations – Need - Categorization of OLAP Tools

UNIT V

Introduction to BigData Platform – Challenges of Conventional Systems - Intelligent data analysis – Nature of Data - Analytic Processes and Tools - Analysis vs Reporting - Modern Data Analytic Tools - Statistical Concepts: Sampling Distributions - Re-Sampling - Statistical Inference - Prediction Error.

REFERENCES

1. Jiawei Han and Micheline Kamber, "Data Mining Concepts and Techniques" Second Edition, Elsevier, Reprinted 2008.
2. G. K. Gupta, "Introduction to Data Mining with Case Studies", Easter Economy Edition, Prentice Hall of India, 2006.
3. BERSON, ALEX & SMITH, STEPHEN J, "Data Warehousing, Data Mining, and OLAP", TMH Pub.Co. Ltd, New Delhi, 2012
4. PRABHU "DataWarehousing, PHI Learning Private Limited" New Delhi, 2012.
5. PONNIAH, PAULRAJ, "DataWarehousing Fundamentals", JohnWiley & Sons, New Delhi, 2011
6. Michael Minelli, Michele Chambers , Ambiga Dhira, "Big Data, BigAnalytics Emerging Business Intelligence and Analytic Trends for Today's Businesses,", Wiley Publications,2013.

COS3200	ENVIRONMENTAL STUDIES	4Hrs/2Cr
----------------	------------------------------	-----------------

Objective

A working knowledge on environment and sensitizing student of all disciplines to environmental issues presently comes within the mandate of all graduation courses in India. With this in mind, this course is designed with an aim to create awareness of environment and pollution to student. It deals with various aspects of environment like ecosystem, methods of protecting environment, bioremediation, biochemical cycles and occupational hazards

UNIT I

Introduction – Terms and Definitions – Scope and history of Ecology - Ecosystem – Types and functions of structural components – Abiotic-atmosphere-lithosphere-hydrosphere – light and temperature – Biotic-Organisms –tropic levels – and interactions among organisms - food chains – food-web-ecological pyramids

UNIT II

Bio diversity: definition –genetics-species and ecosystem diversity-biodiversity at global national and local levels- conservation methods -patents-bio safety protocol.

UNIT III

Energy sources: renewable and non-renewable energy sources renewable: energy from biomass-gobar glass plant-solar-wind-water-tidal energy. On-renewable energy: fossil fuels-coal-crude oil and natural gas-oil - nuclear energy-geothermal energy ocean thermal energy-bio fuels. Role of technology in environmental protection.

UNIT IV

Environmental surveillance: pollution types -air pollution -global warming-ozone hole -rain-smog and CFC -water pollution-BOD-COD-eutrophication-thermal pollution-oil pollution-noise pollution-sources and effects-nuclear pollution-sources of radiation-biological effects of radiation -solid waste pollution-pollution control. Water treatment and waste management. Computers and environment - remote sensing - maps and environmental impact assessment.

UNIT V

E-waste - toxic constituents - pollution problems - health impact of hazardous waste - reuse and recycling - collection process - separation process - e-waste recycling act - e-waste policy for India.

References:

1. Enger, ED and ROSS,F, Concepts in biology, Tta McGraw hill Publishing company limited, 2000.
2. Jogdand.N. Environmental bio technology- industrial pollution management, Himalaya publishing house, Bombay, 1995
3. Rana, SVS, Essentials of ecology and environmental sciences, Prentice Hall of India Pvt.Ltd., 2003

COS3286 NETWORK SECURITY 3Hrs/2Cr

Objective This course is intended to provide an introduction to firewalls and other network security components that can work together to create an in-depth defensive perimeter around LAN. This course also provides knowledge on other elements like packet filtering, encryption, proxy servers and virtual private networks. In completion of this course the student will be able to secure a network.

UNIT I

Security Policy - Goals of security policy - steps to build security policy

UNIT II

Firewall - types - limitations - firewall - types - limitations - Architecture, function of firewall

UNIT III

Packet filtering - approaches - packet filter rules - proxy server - overview - goals - choosing proxy server - authenticating users

UNIT IV

Encryption - cost of encryption - preserving data integrity - maintaining confidentiality - Digital Certificates - Public and Private keys - encryption schemes

UNIT V

Virtual private network – components – operations – advantages and disadvantages – Types of VPN – VPN setup

References Books

1. Holden, "Guide to firewalls and Network security", Vijay Nicole publications, 2005
2. Christopher M king, Curtis E. Dalton, T.Ertem Osmanoglu, "Security Architecture Design, Deployment & Operations", Osborne/McGraw-Hill, 2001
3. William stallings, "Cryptography & Network Security Principles & Practice" (Second Edition), PHI, 1998.

Department of Visual Communication
Course Scheme for B.Se Visual Communication
(2015 Batch onwards)

SEM	Part	Course Code	Course Title	Hours	Credits	Marks
I	Part I		Tamil	3	3	
I	Part II	ENS 1201	Conversational Skills	3	3	
I	Core	BVC 1521	Introduction to visual communication (T)	5	5	100
I	Core	BVC 1421	Visual Literacy (T)	4	4	100
I	Core	BVC 1422	Drawing (P)	4	4	100
I	Supportive	BVC 1423	Creative Advertising (I)	5	4	100
I	NME	BVC 1221	New Media (T)	3	2	60
I	LS - I	BVC 1222	Typography (P)	3	2	60
II	Part I		Tamil	3	3	
II	Part II	ENS 1202	Reading & Writing Skills	3	3	
II	Core	BVC 1522	Media, Culture and Society(T)	5	5	100
II	Core	BVC 1424	Graphic Design (T)	4	4	100
II	Core	BVC 1425	Graphic Design (P)	4	4	100
II	Supportive	BVC 1426	Media Management (T)	5	4	100
II	NME	BVC 1223	Media Education (T)	3	2	60
II	LS - II	BVC 1224	Digital Photography(P)	3	2	60

Course Code: BVC 1521

Course Title: Introduction to Visual Communication

Hours: 5

Credits: 5

Course Objectives:

Enable the students:

- To trace the Origin and evolution of visual communication
- To be familiar with the various theories of visual communication
- To gain knowledge of the visual culture

Learning outcome

- The learner can explain the origin, status and trends of visual communication
- The learner can analyze the models of communication
- The learner can adopt visual culture for better understanding of the subjects

Unit – I

Definition – Origin and Development –Importance of Communication – Essentials of communication - Types of communication– Functions and Barriers of Communication

Unit – II

Visual Communication – Definition – Origin and Development – Advantages and disadvantages – Scope of visual communication – Elements of visual communication

Unit – III

Communication models and Body language – Various models of communication, SMCR Model, Lasswell model, Shannon and Weaver Model, Wilbur Schramm model, Osgood Model, Helical Dances model, Aristotle model, George Gerbner Model – Verbal and Non verbal Communication- Body language and its main aspects – Various approaches to body language.

Unit – IV

Sensation and perception – Learning and thinking – Human intelligence – Aptitude and personality – Motivation and creativity – Application of psychological concepts of visual communication

Unit – V

Visual culture – Visualizing – Visual power – Visual pleasure, Picture, Semiotics, Signs of symbols

Evaluation Pattern:

End of semester exams will be conducted for 100 marks.

Reference Books

Paul Martin Lestner Visual Communication, Images with messages, Third Edition, Thomson Wadsworth, 2003, California.

Seema Hasan Mass Communication, Principles and concepts, second edition,

Course Code: BVC 1421
Course Title: Visual Literacy

Hours: 4
Credits: 4

Course Objectives:

Enable the students

- To gain knowledge of the Visual elements and Principles
- To become skilled at communication through visuals

Learning Outcome

Learners can think visually

Learners can understand the visual

Learners can communicate through visual

Unit I

Visual Literacy: elements of visual –dot-line-shape-form-colour-texture. Principles of Visual: Harmony, Balance – Rhythm – Proportion

Unit II

Perspective: one point – two point- three points – Aerial – Curve Linear. Colour theory

Unit III

Reading the Image: Perception - Light and Shade – Composition

Unit IV

Medium used in Drawing: Charcoal – water colour – poster colour – oil Colour – acrylic colour – mixed media

Unit V

Human Anatomy: Heads – Hands- body- legs- feet – structures and postures – facial expression – movement in drawing - Cartoon Drawing

Evaluation Pattern:

End of semester exams will be conducted for 100 marks.

Reference Books:

Pran Nath Mago, Contemporary art in India, National Book Trust, India, 2000

Elizabeth Cumming & Wendy Kaplan, The Arts and Crafts Movement, Thames and Hudson Ltd, 2002

Brandon Taylor, Art Today, Laurence King Publishing, 2005

Course Code: BVC 1422
Course Title: Drawing (Practical)

Hours: 4
Credits: 4

Course Objectives:

Enable the students

- * To understand the visual elements and principles.
- * Classification of colors and their applications.
- * To learn the applications of various medium of colors

Learning Outcome

Learners can draw pictures using Visual Vocabulary

Learners can use various medium for Drawing

Learners can Compose the picture creatively

1. Dot, line, shape, form, texture
2. Perspective – One point, Two Point, Three Point
3. Colour – Primary-Secondary – Tertiary – Warm –Cool – Colour Wheel
4. Still Life
5. Landscape
6. Water Colour
7. Oil Colour
8. Acrylic Colour
9. Mixed Media
10. Creative Composition

Visit to Museum, Art Gallery, Historical places and Outdoor study are compulsory

Evaluation pattern: Students need to maintain two records Class work and Homework separately for Continuous Internal Assessment.

Reference Books:

1. Sayre Henry M. (2010) World of Art New Jersey: Pearson Education Inc.
2. Hanks Kurt.(2006) Rapid Viz., Boston: Thomson Course Technology
3. Barber, Barrington.(2006)The Fundamentals of Drawing in Colour, London: Archturus Publishing Limited

Course Code: BVC 1423

Course Title: Creative Advertising

Hours: 5

Credits: 4

Course Objectives:

Enable the students:

- To learn the nature, history and development of advertising.
- To get trained in the visual codes of advertisement
- To create effective advertisements on various products

Learning outcome

The learner can describe the products on the basis of their features

The learner can create advertisements as per requirements

The learner can rate the roles of public relations

Unit I

Advertising – definition – History and development of advertising – functions of advertising – types of advertising – various criticism on advertising – elements of advertising: slogan, Headline, subheadline, illustration, copy, product, Trademark – advertising as a tool of communication – social advertising

Unit 2

Product – definition – classification – product life cycle – types of product – target audience – types of audience – branding – brand image – brand positioning market segmentation – appeals – sales promotion

Unit 3

Advertising budget – media strategy – media vehicle – definition – types of media vehicle - selection of media, planning and classification – ad agency – types of ad agency, structure and function of ad agency

Unit 4

Advertisement Designing – copy writing – types, function – headlines – types. Basic types of illustration – layout – copy preparation – social effects of advertising – ethical aspects – children and advertising – women and advertising

Unit – 5

Public Relations – role and meaning of PR – History of PR- Qualities of PRO – How to conduct PR Campaign – Importance of PR – codes of Ethics for PR – Role of photography in PR

Evaluation Pattern:

End of semester exams will be conducted for 100 marks

Reference Books

Mass Communication, Principles and concepts, second edition, Seema Hasan
Foundations of Advertising, Theory and Practice, S. A. Chunawalla, K.C. Sethia

Course Code: BVC 1221

Course Title: New Media

Hours: 3

Credits: 2

Course Objectives:

Enable the students:

- To acquire the knowledge on new media and its impacts
- To learn the basics of social networking, E-Publishing and mobile communication

Learning Outcome

Learners use the New media effectively and understood their advantages and disadvantages

Unit I

New media – Definition – Scope and characteristics of new media (Five C's – Communication, Collaboration, Community, Creativity and Convergence), Old Vs new perspectives - Importance of new media in contemporary era

Unit II

Socializing – Definition – Importance of socialization in digital age- Role of New media in socialization

Unit III

Social Networking – Definition – Types of social networking – Characteristics of social networking - Positive and negative factors of social networking – Social networking and its impact on youth

Unit IV

E publishing – E books – Traditional reading and online reading - Job opportunities in E publishing - Mobile communication

Unit V

Role of new media in Education, Entertainment, Politics and Journalism, New media technologies – Web Related communication technology – Blogs and Wikis

Evaluation Pattern:

End of the semester exams will be conducted for 60 marks in theory and for the remaining 40 marks the continuous internal assessment mark will be added.

Reference Books

1. Mike Ward, Journalism Online, Focal Press, Oxford, 2002
2. Dennis P. Curtin, Kim Foley, Kunal sen and Cathleen Morin, Information Technology, the breaking wave, Mc Graw- Hill College, 1998
3. Electronic media (second edition), Then, now and later, Norman J. Medoff, Barbara K. Kaye

Course Code: BVC 1222

Course Title: Typography

Hours: 3

Credits: 2

Course Objectives:

Enable the students

- To learn Stencil cutting of letters
- To write calligraphy

Learning Outcome

Learners can do stencil cutting of letters

Learners can write calligraphy

Unit I Type – size – style – various types - form

Unit II Calligraphy - practical

Unit III Dot - line – shape – form - color

Unit IV Harmony – Balance – Rhythm – Symmetry – Proportion

Unit V Stencil cutting of the letters

Evaluation Pattern:

End of the semester exams will be conducted for 60 marks in theory and for the remaining 40 marks the continuous internal assessment mark will be added.

Reference Books:

Annie Moring, Calligraphy stroke –by – stroke, Quantum Books, 2006

Course Code: BVC 1522
Course Title: Media, Culture and Society

Hours: 5
Credits: 5

Course Objectives:

- Enable the students
 To understand the importance of Media Culture
 To make use of Media for the society

Unit I

Understanding Mass Media - Media in Indian Society – Media Ownership –Media Institution state and the Law - Media and self regulation and control, Economic determinants, Advertisers, Audiences, Media Personnel

Unit II

Media Selection rhetoric of the image, Text and effects of the Camera and editing

Unit III

Social construction of reality by media - Rhetoric of the image myth, (representation, stereo type etc), culture studies approach to media, audience as textual determinant, audience as readers, audience position, establishing critical autonomy.

Unit IV

Commodities culture and subculture , popular text celebrating industry – personality as brand name hero – work ship. Acquisition and transformation of popular culture.

Unit V Media in Madurai – Traditional Media and their usage for Communication of social and educational issues – Media Clubs - Tamil Tradition with reference to Madurai

Reference Books

Media Culture and Society Paul Hodkinson Sage Publications 2011
 Digital Diversions Youth culture in the age of Multimedia Julian Sefton- Green UCL Press
 Pennsylvania

Course Code: BVC 1424
Course Title: Graphic Design (Theory)

Hours: 4
Credits: 4

Course Objectives:

Enable the students:

- To know the fundamentals and principles of graphic design
- To be acquainted with the various applications in print and electronic media

Learning Outcome

Learners can design the layout for Print, web ,Electronic media, New media with corporate social responsibility

Unit I

Design practices and process: Role of design in society- Graphic design process. Principles and Elements of graphic design: Sketching and Drawing – Colour theory

Unit II

Fundamentals of Visual Composition. Typography: Types of Letterforms-structure-design function-function of type composition

Unit III

Fundamentals of design: Principles of composition – elements of Composition – relational visual devices

Unit IV

Principles of Layout Design: Theme and content – types of layout – layout composition – colour in layout-design for publication-layout of a Newspaper – Layout for a magazine.

Unit V

Media and Design: Advertising Design: Media Planning – Print Media – Electronic Media – New Media .Integrated methods of Design: Kinds of events – Corporate Social Responsibility. Graphic Design for Interactive Media: Website Design- Gestalt for web design - Designing Navigation- Interactivity – Introduction to Aesthetics and Rasa

Evaluation Pattern:

End of semester exams will be conducted for 100 marks.

Reference Books:

1. Publication Division, (2011) Towards a new age graphic design. New Delhi : NCERT.
2. Sayre Henry M.(2010) World of Art New Jersey: Pearson Education Inc.
3. Sarkar, N.(2008) Art and Print Production. New Delhi: Oxford University Press
4. Arntson, Amy E. (2007) Graphic Design Basics. California: Thomson Wadsworth.

Course Code: BVC 1425

Course Title: Graphic Design (Practical)

Hours: 4

Credits: 4

Course Objectives:

Enable the students

- To understand the basics of layout and design
- To create advertisements and web pages

Learning Outcome

Learners can do layout and design for Magazine, Advertisement, and Web Page

1. Background Design
2. Type
3. Image editing
4. Colour concept
5. Logo
6. Visiting Card
7. Invitation
8. Poster Layout
9. News Paper Layout
10. Magazine Layout

- 11. Advertisement Layout
- 12. Web Page Design

Evaluation Method: Students should submit Practical Records for Class work (using Design Software) and Home work (Manual Design work using pencil, poster colour on paper separately)

Reference Books:

Hanks Kurt.(2006) Rapid Viz., Boston: Thomson Course Technology
 Kress, Genter R.(2006) Reading Images: the grammar of Visual Design, New York: Rutledge
 Dodson, Bert.(2007) Keys to Drawing with Imagination, Cincinnati: North Light Books
 Gavin Ambrose, Paul Harris, GRIDS, AVA Publishing, 2008, Singapore.
 Gavin Ambrose, Paul Harris, Layout, AVA Publishing, 2005, Singapore.

Course Code: BVC 1426
Course Title: Media Management

Hours: 5
Credits: 4

Course Objectives:

Enable the students:

- To gain knowledge of the growth and function of media in society
- To familiarize with the technical operations and the management structure of mass media

Learning Outcome

Learners can manage small Media labs and work in a team as a Media person

Unit I

Origin and growth of media – functions of media – impact of mass media – media audience – media and society – management – management vs. media – communication – a management tool

Unit II

Advertising management – role of advertising within the market program – advertising plan – marketing plan – message strategy – media strategy – advertising production process – social advertising

Unit III

Radio – Technical function programming and production – radio production and distribution – station structure – management: sales, programming, engineering, promotion

Unit IV

Television – operation – production – structure of typical station – cable – operation – management – sales and marketing distribution – studio vs. field production

Unit V

Internet Management – Internet – marketing – function of the internet – E- commerce, E-commerce components – E- commerce incentives – sales on internet direct marketing on internet – customer service and internet

Evaluation Pattern:

End of semester exams will be conducted for 100 marks.

Reference books

Media and Communication Management, C.S. Rayudu, 1998

Advertising Management, Rajeev Batra, John G. Myers, David A. Aaker

Management communication today, Niraj Kumar, 1998

Integrated Advertising promotion and marketing communication, third edition, Kenneth E. Clow, Donald E. Baack, 2011

Course Code: BVC 1223

Hours: 3

Course Title: Media Education

Credits: 2

Course Objectives:

Enable the students:

- To understand the media and its impact on society
- To know the role of media in educating the children, women and youth

Learning outcome

learner understood the importance of media education

learner can work for the impacts of media on society

learner can use the new media with social responsibility

Unit I

Media Education – definition – Need for Media Education – Importance of media Education - Old and new agendas in media education – active and passive consumer

Unit 2

Media Literacy – concepts of media literacy – traditional literacy – Media literacy define by MIC – Computer literacy – relationship among Traditional and computer literacy

Unit 3

Mass media – Role of Mass media in media education – social responsibility of media towards educating the society – Media Violence

Unit 4

New Media - Impacts of new media in role of media education towards adolescents, children and women

Unit 5

Media and sexuality – pornography – impacts of changing lifestyle among youth

Evaluation Pattern:

End of the semester exams will be conducted for 60 marks in theory and for the remaining 40 marks the continuous internal assessment mark will be added.

Reference Books

Media Education in Asia, Springer, 2009

Media Education: Literacy, learning and contemporary culture, Wiley – Blackwell, David Buckingham, 2003

Media education: an introduction, BFI Pub, Manuel Alvarvdo, Oliver Boyd – Baret

Course Code: BVC 1224

Hours: 3

Course Title: Digital Photography

Credits: 2

Course Objectives:

Instruct the students:

- To learn the fundamentals of photography
- To understand the various camera movements and also the camera maintenance

Learning Outcome

Learners can handle the compact digital camera

Learners can compose the pictures pleasing to our eye

Learners can do basic in camera editing for picture

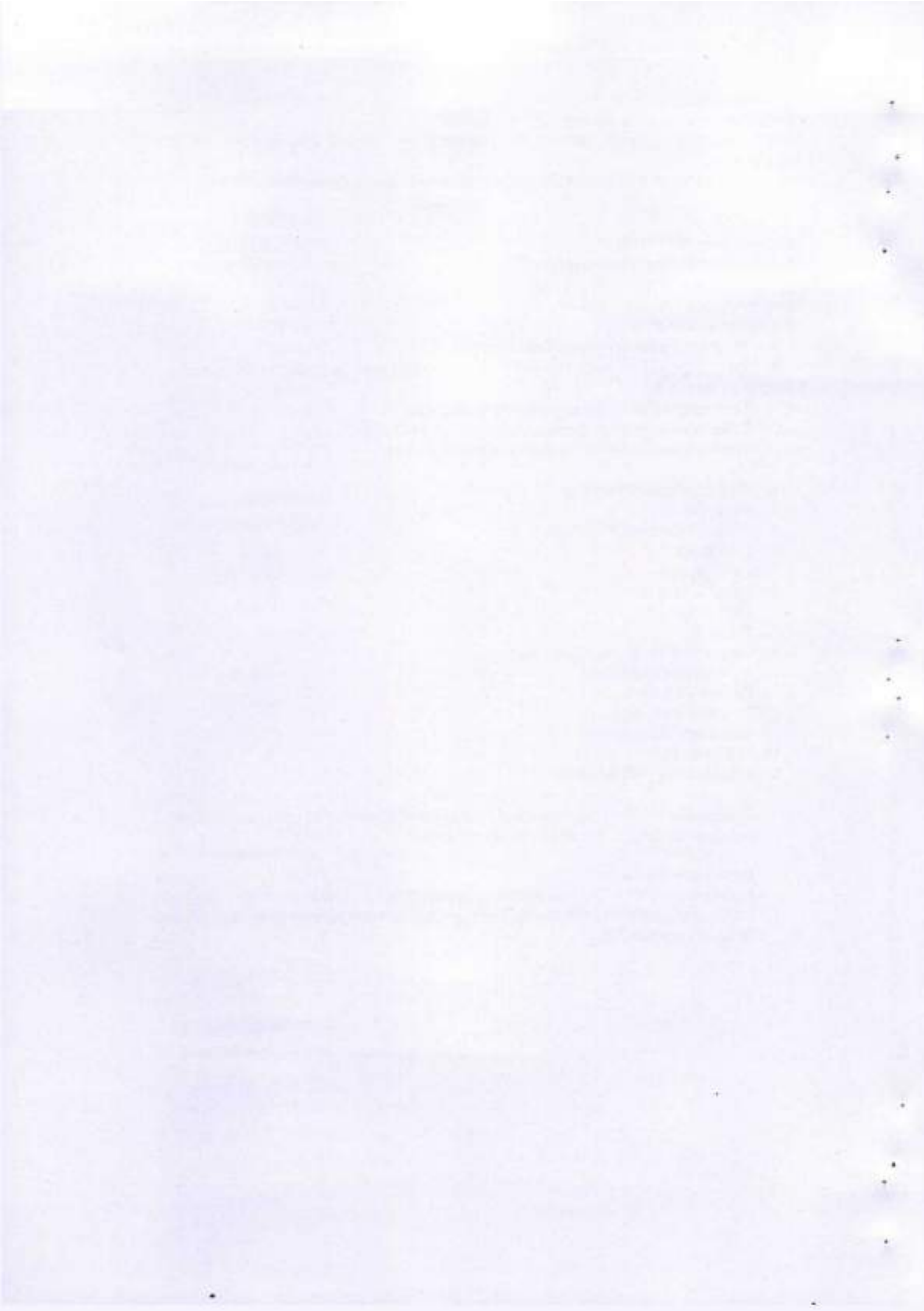
1. Basics of camera handling
2. Composition
3. Camera Care and Maintenance
4. Landscape
5. Architecture
6. Function photo
7. Passport photo
8. Portrait
9. Sports or fast moving object photo
10. Photos in available light
11. Photos with flash
12. Red Eye Reduction
13. Close up (Macro) photo
14. In Camera edit
15. Photos using built in effects

Evaluation Pattern: Students should submit digital photos for continuous internal assessment. Internal 75 marks External 25 marks

Reference Books:

Banek, Cora.(2013) Learning to Photograph Volume 1, California: Rocky nook Inc.

Obermeier, Barbara.(2008) Digital Photography Just the steps for Dummies, Indiana: Wiley Publishing Inc.



B.Sc INFORMATION TECHNOLOGY
Degree Program
CHOICE BASED CREDIT SYSTEM
With effect from Academic Year 2015-2016

The Vision

The Bachelor of Information Technology is an innovative program based on a number of core courses in IT. Upon graduation, the students will be able to understand the impact of technological change and also appreciate the current usage of IT in business and industry. Further, the students will be exposed to the current trends in computing which will enable them to become leaders in the IT field.

The Mission

The B.Sc IT program will:

- prepare students to function effectively in a dynamic technological era.
- promote the development of computer-related skills for immediate application to other curricular areas.
- enable to have sound knowledge of the theory behind the core subjects like, computer architecture, operating systems, data structures, data bases, computer networks .
- equip to possess sound skills in selected procedural and object oriented programming languages, designing databases and managing them, software engineering and web-based applications
- facilitate the development and application of problem-solving skills in students.

ELIGIBILITY

Candidate who seeks admission to the B.Sc Information Technology Program should have passed the Higher secondary examinations of Govt. of Tamilnadu or CBSE or ICSE or any other examinations recognized as equivalent there to by the Madurai Kamaraj University with Mathematics/business mathematics or Computer Science or Computer Applications as one of the optional subjects.

DURATION OF THE PROGRAM

Duration of the program shall be for a period of three years spanning six semesters. Each semester should have 90 instructional days(fifteen weeks) with 5 hours of instruction per day 5-days a week system.

PROGRAM / COURSE FRAME FOR B.Sc INFORMATION TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY
CHOICE BASED CREDIT SYSTEM
Batch -2015

Sem	Part	Course No.	Course Title	Hrs	Crdts	Mrks
1	I	TAM/FRE /HIN	Language	3	2	30
1	II	ENS 1201	Conversational Skills	3	2	30
1	IIIC	BIT 1501	C Programming	5	5	75
1	IIIC	BIT 1403	C Programming Lab	4	4	60
1	IIIC	BIT 1405	Principles of IT	4	4	60
1	IIIS	BIT 1407	Digital Principles and Applications	5	4	60
1	IVNME -I	BIT 1201	e -Commerce	3	2	30
1	IVLS - I	BIT 1203	HTML 5	3	2	30
Total				30	25	375
2	I	TAM/FRE /HIN	Language	3	2	30
2	II	ENS 1202	Reading & Writing Skills	3	2	30
2	IIIC	BIT 1502	C++ Programming	5	5	75
2	IIIC	BIT 1404	C++ Programming Lab	4	4	60
2	IIIC	BIT 1406	Data Structures using C (TL)	4 (2+2)	4	60
2	IIIS	MAS xxxx	Statistics	5	4	60
2	IVNME - II	BIT 1202	Cyber law & Cyber security	3	2	30
2	IVLS - II	BIT1204	Emerging Computing Paradigms And Technologies	3	2	30
2	V		PED/NSS/SLP		1	15
Total				30	26	390
3	I	TAM/FRE /HIN	Language	3	2	30
3	II	ENS 2201	Study Skills	3	2	30
3	IIIC	BIT 2501	SAD (TL)	5(3+2)	5	75
3	IIIC	BIT 2503	Software Testing	5	5	75
3	IIIC	BIT 2505	Java Programming	5	5	75
3	IIIC	BIT 2407	Java Programming Lab	4	4	60
3	IIIS	MAS xxxx	Operational Research	5	4	60
Total				30	27	405

Sem	Part	Course No.	Course Title	Hrs	Crdts	Mrks
4	I	TAM/FRE /HIN	Language	3	2	30
4	II	ENS 2202	Career Skills	3	2	30
4	IIIC	BIT 2502	Operating System	5(3+2)	5	75
4	IIIC	BIT 2504	Computer Networks	5	5	75
4	IIIC	BIT 2506	Relational Database Management Systems	5	5	75
4	IIIC	BIT 2408	RDBMS Lab	4	4	60
4	IIIS	BIT 2410	S/W Project Management	5	4	60
4	V		PED/NSS/SLP		1	15
Total				30	28	420
5	IIIC	BIT 3601	Web Programming(TL)	6(3+3)	6	90
5	IIIC	BIT 3603	S/W Development Lab I (TL)	6(2+4)	6	90
5	IIIC	BIT 3605	Software Engineering	6	6	90
5	IIIC	BIT 3507	Enterprise Resource Planning	5	5	75
5	IVLS - III	BIT 3209	Internet Technologies	3	2	30
5	IVVE	VAL xxxx	Value Education	4	2	30
Total				30	27	405
6	IIIC	BIT 3602	.NET Programming(TL)	6(3+3)	6	90
6	IIIC	BIT 3604	S/W Development Lab II (TL)	6(2+4)	6	90
6	IIIC	BIT 3606	DM & DW	6	6	75
6	IIIC	BIT 3508	Mobile Technologies	5	5	90
6	IVEVS	BIT 3200	Environmental Studies	4	2	30
6	IVLS - IV	BIT 3210	Cloud Computing	3	2	30
Total				30	27	405
Grand Total (Semester I - VI)				180	160	2400

C: MAJOR CORE

S: MAJOR SUPPORTIVE

I: INNOVATIVE

E: NON MAJOR ELECTIVE

VE: VALUE EDUCATION

LS: LIFESKILL

Course Offered to Non-Major Students by the Department of Information Technology

Part IV Non-Major Electives

Sem	Course No.	Course Title	Hours	Credits	Marks
1	BIT 1201	E -Commerce	3	2	30
2	BIT 1202	Cyber Law & Cyber Security	3	2	30
Total			6	4	60

Part IV Life Skill Courses

Sem	Course No.	Course Title	Hours	Credits	Marks
1	BIT 1203	HTML 5	3	2	30
2	BIT 1204	Emerging Computing Paradigms And Technologies	3	2	30
5	BIT 3209	Internet Technologies	3	2	30
6	BIT 3210	Cloud Computing	3	2	30
Total			12	8	120

BIT 1501

C PROGRAMMING

5Hrs/5Cr

Objective

To study about algorithms, flowcharts and programs, to solve problems through logical thinking, and to learn programming using C.

UNIT I

History of C – The C Character Set – Tokens – Identifiers – Keywords – Data Types – Constants - Variables – Operators – Structure of a C program – Formatted input/output functions – Unformatted input/output functions – Data Type Conversions – Control statements – Looping statements.

UNIT II

Arrays – Declaring Arrays – Accessing array elements – Initializing Arrays – Types of Arrays – Strings – String Library Functions.

UNIT III

Functions – Function Prototyping – Return statement – Nested functions – Types of functions – Recursion – Storage classes – Command line arguments – Pointer – Initialization of Pointers – Pointer Arithmetic – Pointers and Arrays – Pointers to Functions – Pointers to Pointers – Passing values to functions – Passing arrays to functions – Memory allocation.

UNIT IV

Structures – Declaration – Definition – Initialization – Nested Structures – Array of Structures – Structures and functions – Structures and pointers – Bits field – Unions.

UNIT V

Files – fscanf() and fprintf() – Character I/O from files –String I/O from files – Error Handling during I/O – Random Access – The Preprocessor.

Book for Reference:

1. Balagurusamy.E, " Programming in ANSI C", Sixth Edition, Tata McGraw Hill-2012.
2. Pandiyaraja P, "Programming in 'C' ", Vijay Nicole Imprint Private Limited, 2005.
3. Kanetkar Y, "Let us 'C' ", BPB publications, 2014,
4. Ashok N.Kamthane , "Programming in C" , Pearson Education, 2012.

BIT 1403

C PROGRAMMING LAB

4Hrs/4Cr

Objective

The aim of this lab course is to enable students to acquire Problem Solving skill using computers and facilitate them to learn basic principles of programming so as to write programs using 'C'

1. C operators
2. If structure
3. Loops and GOTO
4. Arrays
5. Functions
6. Recursion
7. String Handling

8. String handling library function
9. Call by value and Call by reference
10. Pointers
11. Memory allocation
12. Structures
13. unions, Bitfield , Typedef and enumerated data type
14. File operations and file functions
15. Random file and command line argument

BIT 1405

Principles of Information Technology (TL)

4 hrs / 4 credits

Objective

The course aims to develop understanding and appreciation in a broader perspective the application of the information technology. The course attempts to equip the students to compete in the present world with computer knowledge.

UNIT I:

Introduction to computers – Introduction to internet and other emerging technologies – types of computers – advantages and limitations – components of computer – software - systems software – applications software – other expert systems.

UNIT II:

Database structure: Types of database structures – comparison between the structures – Database types and manners of data storage – data access control software – database management methods and techniques – data dictionary – data processing: techniques in data processing – online, batch mode, processing software tools

UNIT III:

Telecommunication and networking: Types of network structures – LAN/ WAN/ SAN – advantages and limitations – data transmission methods – data storage – retrieval and data base management – storage techniques – access control methods and best policies depending upon frequency of access and volumes.

UNIT IV:

Office productivity tools: Word processing– Presentation tools - Electronic spread sheets.

UNIT V:

Office productivity tools: Libre Office

References:

1. Alexis Leon & Mathew Leon, Fundamentals of information technology, Tata McGraw Hill, 2002
2. Ravindranath H, Infrastructure for information technology, McMillan, 2003
3. Andrew S Tenenbaum, Albert S. Woodhull, Operating Systems, Prentice Hall, 2002
4. Dennis P Curtin Kim Foley Kyanansen, Cathleen Morin, Information technology – The breaking wave, TataMcGraw Hill, 2002

BIT 1407

DIGITAL PRINCIPLES AND APPLICATIONS

5Hrs/4Cr

Objective:

This course enables the students to understand the basic concepts of digital logic and the design of basic logic circuits. It also helps the student to learn combinational and sequential circuits.

Unit I

Digital Concepts: Introduction, Decimal numbers, Binary numbers, Decimal to binary conversions, Binary arithmetic, 1's and 2's complements of Binary numbers, Signed numbers, Arithmetic operations. Hexadecimal numbers, Octal numbers, Digital codes, Binary coded decimal (BCD).

Unit II

Logic Gates: Positive and negative logic, NOT gate, AND gate, OR gate, NAND gate, NOR gate, EX-OR and EX-NOR gates. Boolean Algebra: Boolean operations, logic expressions, rules and laws of Boolean algebra, De Morgan's theorems, Boolean analysis of logic circuits, Simplification using Boolean algebra, Standard forms, SOP and POS Expressions, Karnaugh map techniques SOP & POS (up to 4 variables).

Unit III

Combinational Logic Circuits: Implementation, Universal property of NAND and NOR gates, Half adder, Full adder, Parallel binary adder, Comparators, Decoders, BCD to 7-segment decoder, Encoders, Code converters, Multiplexers and Demultiplexers, Parity generators and Checkers.

Unit IV

Sequential Logic Circuits: SR Latches, Gated S-R latch, gated D latch, Flip-Flops: Edge triggered flip flops, Master Slave flip flops, Applications Counters: Asynchronous counters, Decade Asynchronous counters, Synchronous counters, synchronous Decade counters, up/down synchronous counter, Applications.

Unit V

Shift register: serial in - serial out, serial in - parallel out, parallel in - serial out, parallel in - parallel out configurations. Ring counter, Johnson's counter,

Books for References:

1. Thomas L. Floyd & RP Jain, Digital Fundamentals-, 10th Edition, Pearson Edition
2. Moris Mano, Digital logic and computer design -PHL
3. A. P. Malvino, Digital Principles and Applications- McGraw Hill Int Editions (Fourth Edition)
4. R. P. Jain, Modern Digital Electronics- Tata McGraw Hill Pub. Company (Third Edition)

BIT 1201

e-COMMERCE

3hrs/2 Credits

Objective

The subject starts with Introduction to e-Commerce, highlighting the features and benefits. Business models of e-Commerce will be subsequently explained. Relevance of e-Commerce with regard to marketing strategies will be covered. There is an additional topic on Electronic Payment System. Legal and ethical issues will be discussed.

UNIT I: Introduction to e-Commerce – Meaning and concept- e-Commerce v/s Traditional Commerce - e-Business & e-Commerce – History of e-Commerce – EDI – Importance, features & benefits of e-Commerce – impacts, Challenges & Limitations of e-Commerce – Supply chain management & e-Commerce - e-Commerce infrastructure.

UNIT II: Business models of e-Commerce- Business to Business – Business to customers – customers to customers – Business to Government – Business to employee - e-Commerce strategy – influencing factors of successful e-Commerce.

UNIT III: Marketing strategies & e-Commerce – Website – Introduction to HTML – components of website- Concept & Designing website for e-Commerce – Corporate Website – Portal – Search Engine – Internet Advertising – Emergence of the internet as a competitive advertising media- Models of internet advertising – Weakness in Internet advertising – Mobile Commerce.

UNIT IV: Electronic Payment system-Introduction – Online payment systems-prepaid and postpaid payment systems – e-cash, e-cheque, Smart Card, Credit Card, Debit card. Electronic purse – Security issues on electronic payment system – Solutions to security issues – Biometrics – types of biometrics

UNIT V: Legal and ethical issues in e-Commerce – Security issues in e-Commerce – Regulatory framework of e-Commerce

References:

1. Turban, Efraim, and David King, Electronic Commerce: A Managerial Perspective Pearson Education Asia, 2003.
2. Rayport, Jeffrey, Jaworksi and J.Bernard, Introduction to E-Commerce, Tata McGraw Hill, 2002.
3. Rich and Jason, Starting an E-Commerce Business , IDG Books, 2004.
4. Laudon, Kenneth and Traver, E-Commerce business. Technology . Society , Pearson Education, 2004.
5. K.Ravi, Frontiers of Electronic Commerce , Addison – Wesley, 2005.
6. Bharat Bhasker, Electronic Commerce , The McGraw-Hill companies, 2nd edition, 2006.

BIT 1203

HTML5

3 hrs/2 Credits

Objective

The objective of the course is to enable the students to understand a core technology markup language of the Internet used for structuring and presenting content for the WWW.

UNIT-I Intro to HTML5

Introduction - HTML5 Templates –Semantics –Changes to Existing Features Form Controls – Validating HTML5 Documents

UNIT-II HTML Forms

Dependable tools in our toolbox - New Elements - Form Attributes – New Form Input Types – New Form Controls – Changes to Existing

UNIT-III Audio & Video

Current State of play - markup - audio - Encoding Video files - Creating Custom Controls - Accessible Media

UNIT-IV CSS3

Introduction to css3 - css3 selectors - css3 colors - Rounded corners - Drop Shadows - CSS3 Transforms and Transitions

UNIT - V Canvas

Creating canvas element - drawing on the canvas - canvas coordinates - draw shape by create path - manipulate images - SVG - drag and drop

Books

1. HTML5 & CSS3 for the Real World - by Alexis Goldstein, Louis Lazaris, and Estelle Weyl - SitePoint Pty. Ltd
2. HTML5 Cookbook by Christopher Schmitt and Kyle Simpson Published by O'Reilly Media, Inc
3. HTML5: Up and Running by Mark Pilgrim , Published by O'Reilly Media, Inc

BIT 1502**C++ PROGRAMMING****5Hrs/5Cr****Objective:**

To gain the basic knowledge of object oriented programming concepts and to understand the detail idea of C++ streams, templates and error handling concepts of C++ programming.

UNIT I

Introduction to OOP - Object oriented paradigm - OOPs Features - Applications of OOP - Classes and Objects - Accessing class members - Defining member function - Passing objects as arguments - Returning objects from functions - Friend Function - Static data member - Static member functions - Inline Function - Function Overloading.

UNIT II

Constructor and Destructor functions - Types of Constructors - Characteristics of Constructor and Destructor - Operator overloading - Overloading unary and binary operators - Overloading with friend function - Rules for overloading operator.

UNIT-III

Inheritance - Types of Inheritance - Advantages and Disadvantages of Inheritance - Polymorphism - Virtual Function - Pure Virtual Functions - Virtual Base Class - The this pointer - New and Delete Operator

UNIT IV

C++ Streams - Unformatted I/O Operations - Formatted Console I/O Operations - I/O Manipulators - File Handling - Error Handling Function - EOF - File Modes - Command line argument.

UNIT V

Exception Handling - List of Exceptions - Handling Uncaught Exceptions - Templates - Class Templates - Function Templates - Member function Templates - Class Templates and Inheritance.

Books for Reference:

1. Balagurusamy.E, Object Oriented Programming with C++ - Sixth Edition -Tata McGraw Hill - 2012.
2. Venugopal.K.R, Rajkumar, Ravishankar.T, Mastering C++ - Tata McGraw Hill - 2003
3. Ashok N.Kamthane , Object Oriented Programming with ANSI & Turbo C++, Pearson Education, 2012.
4. Bjanne Stroustrup, The C++ Programmers Reference- 3rd Edition - Addison Wesley- 2000

USEFUL WEBSITES:

1. www.idiap.ch/~fleuret/.../Francois_Fleuret_C++_Lecture_Notes.pdf
2. www.personal.rdg.ac.uk/~shs97vfr/SE2B2%20notes/Std_C++_Notes_03.pdf

BIT 1404**C++ PROGRAMMING LAB****4Hrs/4Cr****Lab Component****Objective:**

To enable them to understand the concepts of Object Oriented Programming, the syntax of statements in C++ language and help acquire the programming skills in C++.

1. C++ environment
2. Functions
3. Classes and objects
4. Friend functions
5. Constructor and Destructor
6. Operator Overloading
7. Type conversion
8. Inheritance
9. Pointers
10. Files
11. Templates
12. Exception Handling

BIT 1406**Data Structures using C ++ (TL) 4(2+2) Hrs/4Cr**

Objective: The aim of the course is to enable the students to build simple and complex data structures by applying object oriented concepts. Students are trained to develop algorithms and writing programs for the user defined data types such as Structures, Stacks, Queues, Lists and Trees. Also this course gives an in depth knowledge on Sorting, Searching and calculating the time complexity of the algorithms developed.

UNIT I: Introduction – Arrays – Strings – Stacks – Operations on stack –Representation of Stacks using Array and Linked list - infix - prefix and Post fix notations - Evaluation of Post fix - infix- prefix expression- Applications of stacks.

UNIT II: Queues – Operations on queue -Representation of queue using array and linked list –Circular Queue – Operation on Circular queue - Representation of Circular queue using array and linked list

UNIT III: Linked List – Operations on linked list- Single Linked List- Operation on Single linked list - Double Linked list – Operations on Double Linked List

**UNIT IV: Trees – Binary tree – Traversal of a Binary tree – Applications of Binary Tree
Binary Search Tree- Operations on Binary search tree – Applications of Binary search tree**

**UNIT V: Sorting - Bubble sort - Selection sort - Insertion sort - Quick sort - Merge sort –
Search – Linear Search – Binary Search**

References

1. Yashavant Kanetkar "Data structures using C++", BPB publications 2011
2. John Manoj Kumar, Sudharsan "Data Structures using C" RBA publication 2nd edition
3. Sahni Satraj, "Data Structures using C++", TMH, 2005
4. Weiss A.M., "Data Structures using C++", Addison Wesley, 2002

BIT 1202

CYBER LAW & CYBER SECURITY

3Hrs/2 Credits

Objective

This course enables the students to understand the basic concept of Cyber security and problems associated with it and also to know the intellectual property rights and legal aspects of it.

UNIT I –BASIC CONCEPT OF CYBER SECURITY

Introduction-Cyber Security and its problem-Intervention Strategies: Redundancy, Diversity and Autarchy.

UNIT II – PROBLEMS IN CYBER SECURITY

Private ordering solutions, Regulation and Jurisdiction for global Cyber security, Copy Right-source of risks, Pirates, Internet Infringement, Fair Use, postings, criminal liability, First Amendments, Data Loss.

UNIT III – INTELLECTUAL PROPERTY RIGHTS

Copy Right-Source of risks, Pirates, Internet Infringement, Fair Use, postings, Criminal Liability, First Amendments, Losing Data, Trademarks, Defamation, Privacy-Common Law Privacy, Constitutional law, Federal Statutes, Anonymity, Technology expanding privacy rights.

UNIT IV - TECHNICAL ISSUES

Duty of Care, Criminal Liability, Procedural issues, Electronic Contracts & Digital Signatures, Misappropriation of information, Civil Rights, Tax, Evidence.

UNIT V-LEGAL ASPECTS OF CYBER SECURITY

Ethics, Legal Developments, Late 1990 to 2000, Cyber security in Society, Security in cyber laws case. Studies, General Law and Cyber Law-a Swift Analysis.

REFERENCES:

1. Jonathan Rosenoer, "Cyber Law: The law of the Internet", Springer-Verlag, 1997.
2. Mark F Grady, Francesco Parisi, "The Law and Economics of Cyber Security", Cambridge University Press, 2006.

BIT 1204 Emerging Computing Paradigms And Technologies 3Hrs/2 Credits**Objective**

The aim of this course is to gain insights into emerging computing paradigms and technologies in order to acquire skills in the IT domain.

Unit I - Distributed Computing

Scalable computing over the Internet – The Age of Internet Computing – High Throughput computing – High Performance computing - Paradigms of Computing: Centralized Computing – Distributed computing Parallel Computing - Grid computing – Utility Computing

Unit II - Cloud Computing

What is Cloud computing – Cloud computing Architecture – Types of cloud computing:– Advantages and disadvantages of Cloud computing - History of Cloud computing - Prominent cloud computing Trends : Mobile computing- Big data – Web of Things – Cloud computing standards organizations

Unit III - Computing Technologies

Technologies for Network based systems : Multicore CPUs and Multithreading Technologies –Advances in CPU Processors – Mutithreading Technology– GPU computing

Unit IV - Cluster Computing and Ubiquitous computing

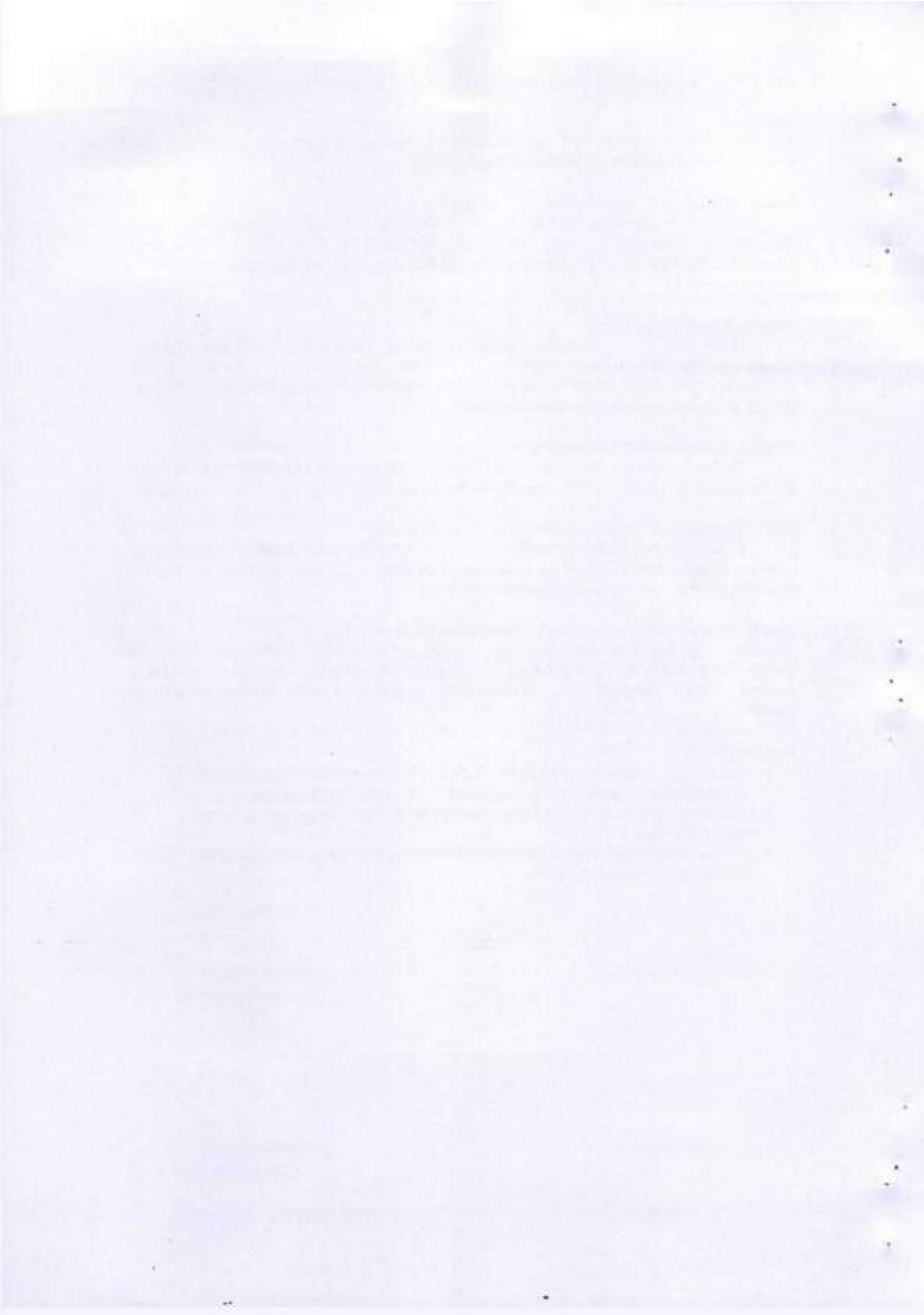
Clustering for Massive Parallelism – Cluster development trends – Milestone of cluster systems - Use of cloud for Ubiquitous computing – Internet of Things and Cyber-Physical systems - Applications of Internet of Things

Unit V - Software Environments for Distributed Programming

Features common to Cloud and Grid – Data features and Databases –Mapreduce – Hadoop – Google File System(GFS) – Big Table – Google’s NOSQL system - Amazon AWS - EC2 – Amazon Simple Storage Service(S3)-Microsoft Azure – Online Social Networking characteristics

Text Books

1. Kai Hwang, Geoffrey C. Fox, Jack J. Dongarra, Distributed and Cloud Computing: From Parallel Processing to the Internet of Things, Elsevier, 2012
2. Massimo Cafaro, Giovanni Aloisio, Grids, Clouds and Virtualization, Springer verlog, London, 2011.
3. Olivier Terzoismb, Turin, Italy, Lorenzo Mossuccaismb, Turin, Italy, CRC Press, Taylor and Francis Group, 2015.



Department Of Commerce

THE AMERICAN COLLEGE

COURSE STRUCTURE – UG DEPARTMENT OF COMMERCE (SF) 2015-16 onwards

Semester	Part	Course Code	Course Title	Hrs/wk	Credit	Marks
1	Part-I	CME 1201	TAM/FRE/HIN/ வணிகக் கடிதத் தொடர்புகள் - I	3	2	30
	Part-II	ENS 1201	Conversational Skills	3	2	30
	Major	CME 1531	Financial Accounting-I	5	5	75
	Major	CME 1433	Business Communication	4	4	60
	Major	CME 1435	Fundamentals of Marketing	4	4	60
	LS	CME 1209	Creative Leadership	3	2	30
	NME	CME 1211	Fundamentals of Accounting	3	2	30
	Supportive	CME 1437	Business Economics	5	4	60
TOTAL				30	25	375
2	Part-I	CME 1202	TAM/FRE/HIN/ வணிகக் கடிதத் தொடர்புகள் - II	3	2	30
	Part-II	ENS 1202	Reading & Writing Skills	3	2	30
	Major	CME 1532	Financial Accounting-II	5	5	75
	Major	CME 1434	Banking Theory Law and Practice	4	4	60
	Major	CME 1436	Marketing Management	4	4	60
	LS	CME 1210	Services Marketing	3	2	30
	NME	CME 1212	Fundamentals of Management	3	2	30
	Supportive	CME 1438	Business Environment	5	4	60
	Part-V	xxx 0000 or xxx 0000	Ext. activity NCA/NSS Or Ext. activity SLP	- -	2 2	30 30
TOTAL				30	27/25	405/375
3	Part-I	CME 2201	TAM/FRE/HIN/ கணினிமேலாண்மை	3	2	30
	Part-II	ENS 2201	Study Skills	3	2	30
	Major	CME 2531	Partnership Accounting	5	5	75
	Major	CME 2633	Business Laws	6	6	90
	Major	CME 2435	Risk Management	4	4	60
	Major	CME 2437	Logistics and Supply Chain Management	4	4	60
	Supportive	CME 2439 / MAS	Information Technology/ Business Statistics	5	4	60
TOTAL				30	27	405

Semester	Part	Course Code	Course Title	Hrs/ wk	Credit	Marks
4	Part-I	CME 2202	TAM/FRE/HIN/ தமிழ்-கேள்யுதகளும் நலை முறைதகளும்	3	2	30
	Part-II	ENS 2202	Career Skills	3	2	30
	Major	CME 2532	Corporate Accounting	5	5	75
	Major	CME 2634	Corporate Laws	6	6	90
	Major	CME2436	Business Ethics	4	4	60
	Major	CME 2438	Auditing and Assurance	4	4	60
	Supportive	CME 2440/ MAS	E-Commerce/ Business Mathematics	5	4	60
	Part-V	xxx 0000 or xxx 0000	Ext. activity NCA/NSS Or Ext. activity SLP	- -	2 2	30 30
TOTAL				30	29/27	435/405
5	LS	CME 3201	Business Correspondence	3	2	30
	VAL		Value Education	4	2	30
	Major	CME 3631	Higher Accounting	6	6	90
	Major	CME 3633	Income Tax I	6	6	90
	Major	CME 3635	Cost Accounting I	6	6	90
	Major	CME 3537	Human Resource Management	5	5	75
TOTAL				30	27	405
6	LS	CME 3202	Export Marketing	3	2	30
		CME 3200	Environmental Studies	4	2	30
	Major	CME 3632	Management Accounting	6	6	90
	Major	CME 3636	Income Tax II	6	6	90
	Major	CME 3638	Cost Accounting II	6	6	90
	Major	CME 3510	Investment Management	5	5	75
TOTAL				30	27	405

SUPPORTIVE

Semester	Course Code	Subject Title	Hours	Credit
1	CME 1437	Business Economics	5	4
2	CME 1438	Business Environment	5	4
3	CME 2439	Information Technology	5	4
4	CME 2440	E-Commerce	5	4

NON – MAJOR ELECTIVE

Semester	Course Code	Subject Title	Hours	Credit
1	CME 1211	Fundamentals of Accounting	3	2
2	CME 1212	Fundamentals of Management	3	2

LIFE SKILL COURSES

Semester	Course Code	Subject Title	Hours	Credit
1	CME 1209	Creative Leadership	3	2
2	CME 1210	Services Marketing	3	2
5	CME 3210	Business Correspondence	3	2
6	CME3202	Export Marketing	3	2

CME 1201

வணிகக் கடிதத் தொடர்புகள் - I

3Hrs/2Cr

நோக்கம்:

தொடர்புகள் நிறைந்த தற்கால உலகத்தில் வணிகக் கடிதங்களின் முக்கியத்துவத்தையும் மற்றும் நடைமுறையில் எந்த பிழையும் இல்லாமல் எவ்வாறு அதனைப் பயன்படுத்துவது என்பதையும் விளக்குவது இப்பாடத்தின் நோக்கமாகும்.

அலகு-1

வணிகத் தொடர்பு - பொருள் - இலக்கணம் - முக்கியத்துவம் - அடிப்படைக்கூறுகள் - பணிகள் - வழிமுறை

அலகு-2

நேரடி மற்றும் மறைமுக வணிகத் தொடர்பு - தடைகள் - மின்னணு அமைப்புச் சாதனங்கள்

அலகு-3

விசாரணைக் கடிதங்கள் - ஆணையுறுக் கடிதங்கள் - பொருள் - முக்கியத்துவம் - வழிமுறைகள்

அலகு-4

விற்பனைக் கடிதங்கள் - பொருள் - வழிமுறைகள்

அலகு-5

பின்பற்றுக் கடிதங்கள் - வழிமுறைகள் - கடிதங்கள்

Books for Reference:

1. ராதா, வணிக கடிதங்கள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2005.
2. ராதா, வணிக கடித தொடர்புகள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2006.
3. Dr.K.அன்பழகன் S.இராமர், வணிகக் கடிதத் தொடர்பு - மெரிட் இந்தியா பப்ளிகேஷன்ஸ், மதுரை, 2008.
4. R.S.N. Pillai & Bhagavathi, Commercial Correspondence & Office Management S & Chand Publications, New Delhi, 2009.
5. Prasantha Ghosh, Secretarial Practice & Management, Sultan Chand Publications, New Delhi, 2010.
6. பாலை ஆசிரியர் குழு, வணிக மடலியலும் அலுவலக மேலாண்மையும் - பாலை பதிப்பகம் 2007.

CME 1531

FINANCIAL ACCOUNTING - I

5Hrs/5Cr

Objective:

The object of the course is to equip the students with the working knowledge of accounting practices in order to prepare for CA, CMA, and ACS. This course develops skills on the application of theoretical knowledge of financial accounting in business in the backdrop of Accounting Standards

UNIT I

Introduction to accounting- Accounting concepts- Errors and their rectification- Final accounts - Bank Reconciliation statement - Reconciliation in case of favourable and unfavourable balances in passbook and cash book – Reconciliation after adjustments in cash book and pass book.

UNIT II

Bills of exchange promissory notes – Account current and Average due date – where amount is lent in various instalments, amount lent in one instalment Account current, calculation of interest (Forward backward method, daily balance method, red ink interest & Daily balance method).

UNIT III

Depreciation – depreciable assets, causes, methods of calculating and recording depreciation, and accounting for changes in depreciation policies – Insurance claims – loss of profit, loss of stock – Goods on sale or return basis.

UNIT IV

Consignment – stock valuation, Accounting for losses, invoice price, memorandum column method, consignment inwards.

UNIT V

Accounting entries for Joint Venture – Accounting treatment – Separate set of books – Same set of books – memorandum method.

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi,2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi,2009
3. S.P.Iyengar,Advanced Accounting Vol I, S.Chand & Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Vol I,Central Publishing Company, Kolkatta, 2006

CME 1433**BUSINESS COMMUNICATION****4Hrs/4Cr****Objective:**

To develop written and oral business communication skills particularly, interviews, group discussions, presentation skills, negotiating and bargaining and to provide knowledge on modern communication methods, business letters, preparation of resume, Public speech and so on, are taught.

UNIT I

Business Communication: Meaning, Importance of effective business communication, Barriers to communication, Modern communication methods, Business letters, Need, Functions, Kinds. Essentials of effective business letters,- Layout of effective business letters.

UNIT II

Enquiries: Offer, Quotations, Trade Enquiries: Orders and their Execution, Extension of time for execution of orders, Declining orders. Credit and Status Enquiries: Complaints and Adjustments: Collection Letters: Statement of accounts, Reminders, Strong reminders and limiting date letters -Sales Letters and Circular Letters.

UNIT III

Business Correspondence: Banking Correspondence: Letters from banker and customer and letters from customers to bankers. Insurance Correspondence: Surrender, Revival and other enquiries related to insurance. Agency Correspondence Letters.

Company Secretarial Correspondence (Includes Agenda, Minutes and Report Writing)

UNIT IV

Interview: Application Letters: Preparation of Resume- Interview: Meaning, Objectives and Techniques for facing various types of Interviews.

UNIT V

Report and Public Speech: Report - Business Report Presentations - Methods of preparing business report for different domains. Public Speech - Characteristics of a good Speech.

Books for Reference:

1. Rajendra Pal and Korlahalli, 'Essentials of Business Communication', Sultan Chand & Sons, New Delhi, 2006.
2. Ramesh M.S. and Pattanshetti C.C., 'Business Communication', Sultan Chand & Sons, New Delhi, 2003.
3. Rodriquez M.V., 'Effective Business Communication Concept', Vikas Publishing Company, New Delhi, 2003.

CME 1435

FUNDAMENTALS OF MARKETING

4Hrs/4Cr

Objective:

The purpose of this course is to equip the students with various marketing concepts and principles as applicable to recent business trends.

UNIT I

Definition of Marketing – Importance of Marketing – Evolution of Marketing Concept – Marketing Function – Goods – Types of Goods – Classification of Goods and Markets, Classification and Characteristics of Consumer and Industrial Goods – Market – Kinds of Markets.

UNIT II

Marketing Concepts - Product approach, production approach, selling approach, integrated marketing, societal marketing, consumer oriented marketing approaches. Market Segmentation – Meaning – Basic Criteria – Pros and cons.

UNIT III

Introduction to types of marketing – Products and services – Urban and Rural marketing.

UNIT IV

Consumer behaviour - Internal and external factors – Biogenic and psychogenic buying motives – Rational and irrational motives – Customer service – Customer value for money.

UNIT V

Marketing Research – Introduction – Process – Methods – Role in marketing of products.

Books for Reference:

1. Stanton W J, Fundamentals of Marketing Prentice Hall India Ltd., New Delhi, 2003.
2. Philip Kotler, Principles of Marketing, Prentice Hall India, New Delhi, 2003.
3. Gupta, C.B., Marketing Management, Sultan Chand & sons, New Delhi 2005.
4. Pillai RSN & Baghawathy, Modern Marketing, S Chand & Co Ltd., New Delhi, 2004.

CME 1209**CREATIVE LEADERSHIP****3Hrs/2Cr****Objective:**

The aim of this course is orient the students towards ideal leadership skills by imbibing the requisite thinking and qualities for a leader.

UNIT I

Introduction to Leadership: Meaning – Definition – Origin - Leadership Theories – Leadership Styles – Skills and Qualities of a leader. Power and Authority of a Leader: Delegation of Authority.

UNIT II

Meaning and Definition of Team, Group – Importance of Team Work. Brain Storming, Problem solving, constructive criticism. Motivation: Meaning and Definition of Motivation.

UNIT III

Change Management: Meaning and Definition of Change – Need for change – Types of change – Process of change – Resistance to change – Overcoming resistance to change.

UNIT IV

Stress Management: Factors causing stress – Eustress and Negative Stress – Effects of stress.

UNIT V

Conflict Management: Meaning and Definition of Conflict – Functional and Dysfunctional conflict –Resolving Conflicts.

Books for Reference:

1. Tripathy. P.C. 'Personnel Management', Sultan Chand and Sons, New Delhi, 2002.
2. Prasad. L.M. 'Human Resource Management', Sultan Chand and Sons, New Delhi, 2006.
3. Aswathappa. K. 'Organisational Behaviour', Himalaya Publishing House, New Delhi, 2007.
4. Mamoria. C.B. 'Personnel Management', Kitab Mahal, Calcutta, 2003.
5. Davar. R.S. 'Personnel Management and Industrial Relations', Himalaya Publishing House, New Delhi, 2004.

CME 1211**FUNDAMENTALS OF ACCOUNTING****3Hrs/2Cr****Objective:**

The course enables the students to understand the basic concepts of accounting in order to prepare for competitive exams- This course is exclusively designed for the benefit of science stream students.

UNIT I

Introduction to book keeping-Accountancy – Accounting terminologies – Types of accounting rules - merits of accounting -mechanized accounting.

UNIT II

Journal - passing entries in Journal (excluding adjustment entries)

UNIT III

Subsidiary books – cash book- single, double and triple column cash book- petty cash book

UNIT IV

Ledgers posting and balancing-preparation of trial balance.

UNIT V

Final accounts – concepts of gross profit and net profit – contents of final accounts – preparation of trading, profit and loss accounts and Balance Sheet with simple adjustments.

Books for Reference:

1. Grewal T, Introduction to Accountancy, Sultan Chand & Sons, New Delhi, 2009
2. Gupta V.K, Fundamentals of Accountancy, Sultan Chand & Sons, New Delhi, 2009
3. Gupta R.L., Radhaswamy M, Financial Accounting, Sultan Chand & Sons, New Delhi, 2009
4. Jain & Narang, Financial Accounting, Kalyani Publishers, New Delhi, 2009

CME 1437

BUSINESS ECONOMICS

5Hrs/4Cr

Objective:

The course helps students to have basic understanding of economic principles and its application to the business world. This paper covers basic concepts of economics in order to prepare the students for professional courses.

UNIT I

Business Economics – Meaning – Definitions – Nature and Scope – Goals of firms- Managerial Economics- nature, scope applicability.

UNIT II

Demand – Types – Determinants – Reasons for downward sloping – Exceptions – Uses, consumer's surplus. Elasticity of demand – types – factors – practical importance – Demand forecasting – objectives – direct and indirect methods – indifference curve – Properties – Consumers Equilibrium.

UNIT III

Production – Production function – Law of returns and returns to scale – The law of variable proportion – Isoquant - properties – produces equilibrium. Cost – cost functions – types – derivation of long run cost curve – internal and external economics of scale – Concepts of revenue – Break even analysis – Concepts – uses and limitations.

UNIT IV

Pricing theory – Time element – Perfect competition – features – Supply curve and Equilibrium – Monopoly – types – Degree of price discrimination – Advantages and disadvantages – Monopolistic competition – Selling cost – Oligopoly – Kinky demand curve model, objectives of price policies – Pricing methods.

UNIT V

National income – Concepts – Methods of measuring national income – difficulties – Uses – inflation – types – Causes and consequences – measures to check inflation.

Books for Reference:

1. Maheswari & Varshney, Business Economics, Sultan Chand & Sons, New Delhi, 2009
2. Mankar, G, Business Economics, Vikas Publishing House, Mumbai, 2010
3. Sundaram KPM, Business Economics, Sultan Chand & Sons, New Delhi, 2010
4. Shankaran S, Business Economics, Margham Publications, Chennai, 2011

CME 1202**வணிகக் கடிதத் தொடர்புகள் - II****3Hrs/2Cr****நோக்கம்:**

பல்வேறு வகையான கடிதங்கள், அவைகளின் தன்மை, அமைப்புக் குறித்து விளக்குதல் இப்பாடத்தின் நோக்கமாகும்.

அலகு:1

புகள் மற்றும் சரிகட்டுதல் - வசூல் - வழிமுறைகள்.

அலகு:2

பொக்குவரத்து - வேலைப்பணிக்கான கடிதங்கள்.

அலகு:3

சுய அறிமுகப் படிவம் - பணி நியமனக் கடிதங்கள்.

அலகு:4

அறிக்கை - பொருள், முக்கியத்துவம் - கூறுகள் - வகைகள்.

அலகு:5

பொருளடக்கம் - சட்டப்பூர்வ அறிக்கை - ஆண்டறிக்கை - சந்தை அறிக்கை - பொருள் - பணிகள் - பண்புகள்.

Books for Reference:

1. ராதா, வணிக கடிதங்கள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2005.
2. ராதா, வணிக கடித தொடர்புகள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2006.
3. Dr.K.அன்பழகன் S.இராமர், வணிகக் கடிதத் தொடர்பு - மெரிட் இந்தியா பப்ளிகேஷன்ஸ், மதுரை, 2008.
4. R.S.N. Pillai & Bhagavathi, Commercial Correspondence & Office Management S & Chand Publications, New Delhi, 2009.
5. Prasantha Ghosh, Secretarial Practice & Management, Sultan Chand Publications, New Delhi, 2010.
6. பாலை ஆசிரியர் குழு, வணிக மடலியலும் அலுவலக மேலாண்மையும் - பாலை பதிப்பகம் 2007.

CME 1532

FINANCIAL ACCOUNTING – II

5Hrs/5Cr

Objective:

The objective of the course is to enable students to develop skill in preparation of accounts for various business organisations and to equip the students with the working knowledge of accounting practices in order to prepare for CA, CMA and ACS.

This course deals with the methods of accounting involved in various organisations such as non-trading concerns, departments and branches.

UNIT I

Accounts of Non-trading Organisation: Receipts and Payments Accounts – Income and Expenditure Accounts – Balance sheet

UNIT II

Accounts from incomplete Records: Ascertainment of Profit and Loss – Net worth method – Conversion method – Self-balancing ledgers and sectional balancing ledgers – Nature of Ledgers

UNIT III

Branch Accounts – Final Account system – Independent Branch – Incorporation of Branch Account to Head office account.

Departmental Accounts – Allocation of departmental expenses – Interdepartmental transfer – Departmental Final Accounts – Memorandum Stock Account – Mark up Account

UNIT IV

Hire Purchases – Cash price – Default and Repossession – Methods of recording hire purchase transactions – Instalment payment system – Accounting treatment in the books of vendor and buyer

UNIT V

Royalty Accounts- Minimum Rent – Short working – Royalty receivable and payable – Sub-lease.

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi, 2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi, 2009
3. S.P.Iyengar, Advanced Accounting Vol I, S.Chand & Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Vol I, Central Publishing Company, Kolkatta, 2006

CME 1434

BANKING THEORY LAW AND PRACTICE

4Hrs/4Cr

Objective:

The course content familiarises students with the provisions of Banking Regulation Act. In addition to this the subject deals with the various functions of modern banking systems in India namely Commercial Banks, Cooperative Banks, Regional Rural Banks, Land Development Banks, Reserve Bank of India etc. Also this course covers recent trends in banking such as Automated Teller Machines, Credit Cards, Debit Cards and various e-banking Viz., Internet Banking, Mobile Banking, ECS, RTGS, NEFT etc.

UNIT I

Banker and Customer: Introduction and definition of banking. General and special relationship between banker and customer, Banker's lien, Rights of banker especially right to maintain customer's account secrecy and circumstances of revealing. Special types of customers. Functions, features, advantages and disadvantages of Investment banking, Branch banking and Unit banking.

UNIT II

Banking system in India: Functions and role of Commercial banks, Cooperative banks, Regional Rural Banks, Land Development Banks, Lead bank scheme, NABARD, EXIM bank, Nationalisation of banks. **RBI:** Functions, credit creation, credit contraction and credit control measures (both qualitative and quantitative) and anti-money laundering.

UNIT III

Pass book: Legal significance, favourable and unfavourable entries and their effects. **Investment Policies:** Principles of sound lending, Bank loans and advances policy, Secured and unsecured advances.

UNIT IV

Cheques: Types of cheques, difference between cheque, bill of exchange and promissory notes, material alteration, crossing - general crossing and special crossing - Endorsement - meaning and types of endorsement.

UNIT V

Trends in Banking: Collecting banker: holder for value and holder in due course. Paying banker: circumstances of dishonour and statutory protection to paying banker. Automated Teller Machines, Credit cards and debit cards: Payment process, differences and advantages and problems in using. E-banking: Internet banking, Mobile banking, SMS banking, ECS, RTGS, NEFT.

Books for Reference:

1. Gordon K. and Natrarajan E, 'Banking theory, Law and practice', Himalay Publishing House, New Delhi, 2011.
2. Davar, 'Banking Law and Practice', S.Chand & Sons, New Delhi, 2003.
3. Vasudevan S., 'Banking Theory, Law and Practice', S.Chand & Sons, New Delhi, 2004.
4. Vasanth Desai, 'Banking Theory, Law and Practice', Himalaya publishing House, New Delhi, 2002.
5. Bhaskaran R. 'Anti-money laundering and know your customer', Indian Institute of Banking and Finance, Macmillan Publishers India Ltd, New Delhi, 2014.

CME 1436**MARKETING MANAGEMENT****4Hrs/4Cr****Objective:**

The objective of this course is to impart knowledge on the framework of marketing management at various environmental constraints. This course covers the evolution of marketing, market analysis and selection, product and pricing decisions, distributional and promotional decisions (with practical cases) and recent developments. It is also designed to encourage students to practice marketing as their profession.

UNIT I

Market Analysis and Selection: Concept, Nature, Scope and importance of marketing; marketing concept and its evolution; Strategic marketing planning – CRM - Marketing environment - macro and micro components and their impact on marketing decisions; Market segmentation and positioning; Buyer behaviour; Consumption versus Industrial Organisational buyers; Consumer decision-making process.

UNIT II

Product and Pricing Decisions: Concept of a product; Classification of products; Major product decisions; Product line and product mix; Branding; Packaging and labeling; New product development and consumer adoption process. Pricing decisions: Factors affecting price determination; Pricing policies and strategies.

UNIT III

Distribution Decisions: Nature, functions and types of distribution channels; Distribution channel intermediaries; Channel management decisions, Retailing and wholesaling.

UNIT IV

Promotional Decisions: Promotion decisions: Communication process; Promotion mix - advertising, Personal selling, Sales promotion, Publicity and Public relations; Determining advertising budget; Copy designing and its testing; Media selection; Advertising effectiveness; Sales promotion - Tools and techniques.

UNIT V

Recent Developments in Marketing: Retail Marketing – Online Marketing – Multi Level Marketing – Relationship Marketing

Books for Reference:

1. Kotler, Philip and Gary Armstrong, Principles of Marketing, Prentice Hall, New Delhi, 2005.
2. Ramaswamy VS and Namakumari S Marketing Management, MacmillonIndia, New Delhi, 2005.
3. Srinivasan R Case Studies in Marketing - the Indian Context, Prentice Hall, New Delhi, 2006.
4. Stanton, William J and Charles Futrell, Fundamentals of Marketing, McGraw Hill Publishing Company, New York, 2005
5. Pankaj Madan, Amit Mittal, Hemraj Verma, 'Marketing Management', Global Vision Publishing House, New Delhi, 2011.

CME 1210**SERVICES MARKETING****3Hrs/2Cr****Objective:**

The objective of this course is to explore the various sectors in service industry and to develop entrepreneurial skills. This is one semester course which covers the various concepts of service and the elements of marketing mix in service marketing. It also covers the marketing of financial services, marketing of hospitality and tourism services and marketing of educational services.

UNIT I

Introduction: three main groups – primary – secondary and tertiary concept of service – reasons for the growth of service sector – of services; Intangibility – Inseparability – heterogeneity - Perishability - ownership

UNIT II

Elements of marketing mix in service marketing; Basic issues – quality – designing service strategy.

UNIT III

Marketing of Banking services – Marketing of Mutual Funds - Marketing of Insurance services - Marketing of Health services.

UNIT IV

Marketing of Hospitality services – Marketing of Day Care Services - Marketing of Travel services - Marketing of Tourism services.

UNIT V

Marketing of Education services – Marketing of Entertainment services - Marketing of Courier services - Marketing of Software services

Books for Reference:

1. Jha S.M., 'Services Marketing', Himalaya Publishing House, New Delhi, 2011
2. Shajahan S., 'Services Marketing', Himalaya Publishing House, New Delhi, 2005
3. Love lock Christopher H., 'Services Marketing', Prentice Hall Eaglewood Cliffs, 2003
4. Philip Kotler, 'Marketing Management' Prentice Hall of India Pvt Ltd, New Delhi, 2003
5. Stanton WJ, 'Fundamentals of Marketing', Mc Graw Hill, New York, 2002.

CME 1212**FUNDAMENTALS OF MANAGEMENT****3Hrs/2Cr****Objective:**

The course envisages to provide an in-depth knowledge of various aspects of management and to provide detailed insight into management principles and their application to complex business situations.

UNIT I

Introduction-Concept of Management-Features and objective of management-Management functions-POSDCORB-MBO-MBE-Management and authority-Management and administration

UNIT II

Planning-Definition-Objectives-Features-Planning process-Types of plans; Organising-Definition-Steps in organising- Organisation structure- Types of organising- Formal organising-Features-merits- Informal organisation- Informal organisation models- Delegation of authority-Centralisation and decentralisation of authority

UNIT III

Staffing- Definition-Manpower planning-Recruitment-Selection procedures- Types of various test- Sources of employment-Employment training-Types of training- Job evaluation- Performance appraisal-Transfers-Promotions-Job satisfaction

UNIT IV

Directing- Definition-Directing process-Motivation-Incentives-Monetary and non-monetary incentives- Premium plans- Communication- Types of communication-Media of communication- Barriers to office communication- Leadership- Types of leadership qualities- Qualities of a leader-Types of leaders

UNIT V

Coordination-Conceptual definition-Merits -Features-Reporting- Essentials of good reporting- various forms of reports- reports to various levels of management- Controlling- Budgeting-Features of budgeting-Types of budgets

Books for Reference:

1. Lallan Prasad, Principles of Management, S. Chand Publishers, New Delhi, 2010
2. Prasad L M, Principles of Management, , S. Chand Publishers, New Delhi, 2010
3. Mamoria C B Personnel Management, Kitab Mahal, Kolkatta, 2008
4. Gupta C B, Human Resource Management, Sultan Chand, New Delhi, 2010s

CME 1438**BUSINESS ENVIRONMENT****5HrS/4Cr****Objective:**

The course incorporates knowledge on business environment to enable students to understand various environmental issues relating to business and its utility in economic sense.

UNIT I

Introduction – Historical background – Family management vs. Professionalism – socio-cultural environment – middle class social responsibility of business – values changing concept of business.

UNIT II

Consumer rights – Consumer spending – Consumer protection – Law of contracts, Companies Act 1956.

UNIT III

Private sectors – public sectors – privatization benefits – Industrial policy – multinationals

UNIT IV

Competition Act, 2002 – Bench marking, Zero defects - quality control- Research and development- ISO

UNIT V

GATT - WTO – Formation - member countries – Agreements - TRIMS – TRIPS – Impact of WTO on Indian trade.

Books for Reference:

1. Aswathappa K, Essentials of Business Environment, Himalaya Publishing House, New Delhi, 2003.
2. Raj Aggrawal, Business Environment, Tamilnadu Book House, Chennai, 2005.
3. Gupta C B, Business Environment, Sultan Chand & Sons, New Delhi, 2005.
4. Bhatia B.S, Globalization and Business management, Tamilnadu Book House, Chennai, 2005.

CME 2201

அலுவலக மேலாண்மை

3Hrs/2Cr**நோக்கம்:**

நவீன அலுவலகத்தின் அமைப்பு முறைகள், செயல்பாடுகள், அன்றாட நடவடிக்கைகளை விளக்குதல், அலுவலகத்தின் வளமைகளை முறைப்படிப் பயன்படுத்தி, அதிகாரப் பகிர்வடைச் சரியாகக் கையாள்தலின் மூலம் பணித்தளத்தை எங்ஙனம் எளிதாக்குதல் மற்றும் தகவல் தொடர்புச் சார்ந்த பதிவேடுகளை முறையாகக் கையாள்தல் போன்றவற்றை விளக்குவதே இப்பாடத்தின் நோக்கமாகும்.

அலகு-அ:

அலுவலக மேலாண்மை - இலக்கணம் - நவீன அலுவலகத்தின் அமைப்பு முறைகள் நவீன அலுவலகத்தின் இலக்கணம் செயல்பாடுகள் மற்றும் முக்கியத்துவம் மேலாண்மை மற்றும் அமைப்பு-அலுவலக முறை மற்றும் அன்றாட நடவடிக்கைகள்

அலகு-ஆ:

பணிபொக்கு ஒப்படைப்புசெயல்முறைகள் - அதிகாரத்தை பரவலாக்குதல் - அலுவலக வளமை வகைகள் - வளமைகளைத் தயாரித்தல் - பயன்படுத்துதல் மற்றும் மதிப்பீடுதல்

அலகு-இ:

அலுவலக இடவசதி, அலுவலகமனைத் துணைப் பொருட்கள் மற்றும் அமைப்புத் திட்டம் - பணிக்கேற்றகூழ்நிலை, பணியை எளிதாக்குதல்

அலகு-ஈ:

அஞ்சலகமுறை கடிதப் போக்குவரத்து மற்றும் பதிவேடுகளை பராமரித்தல், தபால்களை கையாள்தல் - அஞ்சல் துறையை அமைத்தல்- மையப்படுத்தப்பட்ட அஞ்சல் பணி உள்ளவரும் மற்றும் வெளித்தொடர்பு - வாய்மொழித் தகவல் தொடர்பு மற்றும் எழுத்து மூலம் தகவல் தொடர்புபதிவேடுகளைஉருவாக்குதல் - எழுத்துப் பணிகள் - அலுவலகஅறைகள் - படிவக் கட்டுப்பாடு-வடிவமைப்பு-தொடர்புஎழுதுபொருள்.

அலகு-உ:

கோப்பிலிடுதல்: நல்லகோப்பீட்டுமுறையின் முக்கியஅம்சங்கள் - வகைப்படுத்துதல் மற்றும் வரிசைப்படுத்துதல் - கோப்பீட்டுமுறைகள் - மையக் கோப்பீட்டுமுறைமற்றும் பரவலாக்கப்பட்டகோப்பீட்டுமுறைசட்டகராதியின் பல்வேறு வகைகள்.

Books for Reference:

1. அலுவலக முறைகள் - எஸ்.எம். சுந்தரம் ஸ்ரீமீனாட்சி பப்ளிகே'ன்ஸ், காரைக்குடி
2. Commercial Correspondence & Office Management - R.S.N Pillai & Bhagavathi, S & Chand Publications, New Delhi
3. Secretarial Practice & Management - Prasantha Ghosh - Sultan Chand Publications, New Delhi
4. வணிக மடலியலும் அலுவலக மேலாண்மையும் - பாவை ஆசிரியர் குழு பாவை பதிப்பகம்
5. அலுவலக முறைகள் -ஐச.மு.அன்பழகன் ஞ.இராமர் மெரிட் இந்தியா பப்ளிகே'ன்ஸ், மதுரை-1.

CME 2531

PARTNERSHIP ACCOUNTING

5Hrs/5Cr

Objective:

The objective of this course is to provide detailed insight in to specialized accounting and their application to complex business situations and to gain comprehensive understanding of all aspects relating to partnership accounting and to equip the students with the working knowledge of accounting practices in order in order to prepare for CA,CMA, and ACS.

UNIT I

Partnership: Meaning – Features – Kinds – Partnership Deed – Appropriation of Profit & Loss Account – LLP – Accounting procedures.

UNIT II

Admission of a Partner – Profit sharing ratio – Goodwill – Revaluation of Assets and liabilities – Retained earnings and Accumulated Losses – book values are not to be altered (Memorandum revaluation method).

UNIT III

Retirement of a partner – ascertainment of amount due to retiring partner – simultaneous retirement and admission – Death of a Partner – Profit Sharing ratio – Joint Life Policy.

UNIT IV

Amalgamation of firms – meaning – accounting procedure – assets and liabilities not taken over.

UNIT V

Dissolution of Partnership – Dissolution of firm – Dissolution by the court – settlement of accounts – Dissolution Accounts – Gradual realization of Assets and Piecemeal Distribution – Insolvency of a partner – Insolvency of more partners than one - Insolvency of all partners. Sale of Partnership Business to Company – Accounting Entries

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi,2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi,2009
3. S.P.Iyengar,Advanced Accounting Vol I, S.Chand & Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Vol I,Central Publishing Company, Kolkatta, 2006

CME 2633

BUSINESS LAWS

6Hrs/6Cr

Objective:

This paper aims at providing a bird's eye view on various business laws which will facilitate the students in having an understanding of theoretical knowledge of laws governing business.

UNIT I

Mercantile law – introduction- contract – definition – kinds – essential elements – offer and acceptance – consideration – capacity – consent – mistake - Unlawful agreement and illegal agreement – agreements opposed to public policy – wagering agreements and contingent contracts – performance of contracts – discharge of contracts – kinds – remedies for breach of contracts – quasi contracts.

UNIT II

Indemnity and Guarantee - Rights of Indemnity holder – Difference between Indemnity and Guarantee – Rights of Surety – Discharge of Surety.

UNIT III

Industrial Disputes Act- settlement mechanisms- types of disputes- offences and penalties- health, safety and welfare measures of workers under Factories Act

UNIT IV

Information Technology Act, 2000- scope, nature, applications in business to business- business to customer

UNIT V

Right to Information Act-Information- concepts in relation to business world

Books for Reference:

1. Business Laws, N.D.Kapoor, Sultan Chand & Sons, New Delhi, 2013
2. Indian Business Laws, Agarwal, Galgothra Publications, 2006.
3. Economic Laws 2014, Taxmann Publications, New Delhi, 2014 Dr.Tuteja S.K, Business Law for managers, Sultan Chand & Sons, New Delhi, 2006.
4. Kapoor G.K, Lectures on Business & Corporate Laws, Sultan Chand & Sons, New Delhi, 2005.
5. Kuchhal M C, Mercantile Law, Vikas Publishing House Pvt.Ltd., New Delhi, 2004.
6. Praveen, Suggested Answers in Mercantile Law, Sultan Chand & Sons, New Delhi, 2005.

CME 2435

RISK MANAGEMENT

4Hrs/4Cr

Objective:

This course facilitates the students to understand the risks involved in business and to handle risks in business situations effectively .

UNIT I

Risk – meaning, types, characteristics, risk vs. uncertainty – risk management – introduction need, uses, scope and purpose.

UNIT II

Cost of Risk, cost of price change risk, RMIS, Organisation of Risk Management in Business – Process of risk management – methods of risk management.

UNIT III

Identification, measurement and control of Risk, Probability distribution and random variables, characteristics of probability distribution.

UNIT IV

Evaluation of frequency and severity of losses (Simple problems only) – Pooling of risk

UNIT V

Transfer of risks – Insurance as risk pooling arrangements – International financial risk management – spreading of risks and tax planning

Books for Reference:

1. Essentials of Risk management, Thomas S Colevan, Research Foundation of CFA, 2011.
2. Risk Management Principles and Practice- Dr.Rakesh Agarwal, The Insurance Times, 2009.
3. Risk Management in Finance, S.Arunajatesan, Vikas Publishing House, New Delhi, 2015.
4. Insurance and Risk Management, Mittal, Sultan Chand & Sons, NewDelhi, 2009.

CME 2437 LOGISTICS AND SUPPLY CHAIN MANAGEMENT 4Hrs/4Cr**Objective:**

To give students an understanding of the problems and issues within the field, required reasoning and analysis and learn the critical elements of the logistics and supply chain process.

UNIT I

Logistics management: Origin and Definition – Types of logistics - logistics management – warehouse management – automation & outsourcing – customer service and logistics management - physical distribution and inventory - concepts

UNIT II

Types of inventory control – Demand forecasting – warehousing and stores management – routing – transportation management – commercial aspects in distribution management – codification – distribution channel management – Distribution Resource Planning (DRP)

UNIT III

Supply chain management: Introduction and development – Nature and concept – importance of supply chain – value chain – components of supply chain – global applications

UNIT IV

Role of manager in supply chain – supply chain performance drivers – key enablers in supply chain improvement – systems and values of supply chain

UNIT V

Aligning the supply chain with business strategies – SCOR model – outsourcing and 3 PLs – Fourth party logistics – Bull-whip effect and supply chain – supply chain relationships – conflicts, resolution strategies - certifications

Books for Reference:

1. Reji Ismail, Logistic Management – (Excel Books)
2. G. Raguram & N Rangaraj, Logistics and Supply Chain Management – cases & concepts, Mc Millan Publishers, 2009
3. Khanna K K – Logistics Approach: Physical Distribution Management
4. D K Agarwal, Text book of logistics and supply chain management, Mc Millan Publishers, 2008

CME 2439

INFORMATION TECHNOLOGY

5Hrs/5Cr

Objective:

This course equips the students to compete in the present world. It includes introduction to computers, the architecture-hardware and software, telecommunication networking and cyber laws.

UNIT I

Introduction to various business processes – Accounting Sale, purchase – Business Process Automation – Benefits and risks – Approaches to mapping – Data Flow diagrams – Business Process engineering.

UNIT II

Computing technologies & Hardware – Servers and points, population computing architectures, SAAS, cloud computing, Mobile computing – Overview of latest devices – technologies – L5, Bluetooth, Tablet, Wi-Fi, Android, Touchpad, iPad, iPod, Laptop, Notebook, Smart Phone.

UNIT III

Telecommunication Networks – Components - Data networks – LAN, WAN, Wireless, Private and Public networks

UNIT IV

Computing architecture – Internet architecture – e-commerce and M-commerce technologies.

UNIT V

ERP, Core Banking System – MIS & IT – Key types of application Controls and their need, Emerging concepts – Visualisation, Grid Computing, Cloud delivery model.

Books for Reference:

1. Wesley, Information Technology, Addition Publishing Co Ltd, New Delhi, 2008
2. Ravindranath H, Infrastructure for information technology, McMillan Pvt Ltd, New Delhi, 2010
3. Andren S Tannen Baum & Albert S Woodhull, Operating systems, Prentice Hall India, New Delhi, 2006
4. Alexis Leon & Mathews Leon, Fundamentals of Information Technology, Tata McGraw Hills Pvt. Ltd, New Delhi, 2010

CME 2202

காப்பீடு - கோட்பாடுகளும் நடைமுறைகளும்

3Hrs/2Cr

நோக்கம்:

காப்பீட்டின் இலக்கணம், வகைகள், கொள்கைகள் மற்றும் இடப்பாடுகள், இன்னல்கள் போன்றவற்றையும், காப்பீட்டின் முக்கிய அம்சங்களான முனைமம் கணக்கிடுதல், இழப்பீடு வழங்குதல் போன்றவற்றை விளக்குதல் இப்பாடத்தின் நோக்கமாகும்.

அலகு:1

காப்பீடு - தொடக்கப் பின்னணி - பொருள் - இலக்கணம் - கோட்பாடுகள் - முக்கிய வழி கூறுகள் - பணிகள் - காப்பீட்டின் முக்கியத்துவமும் பங்களிப்பும் - காப்பீட்டின் வகைகள் - இரட்டைக் காப்பீடு - மறு காப்பீடு.

அலகு:2

ஆயுள் காப்பீடு - பொருள் - கோட்பாடுகள் - ஆயுள் காப்பீட்டு பத்திர வகைகள் - ஆயுள் காப்பீடு செய்வதற்கான வழிமுறைகள் - முனைமம் செலுத்துதல் - சலுகை நாட்கள். பிரதி நியமனம் - ஒப்படைப்பு - தவறிய பத்திரம் - இழப்பு காப்பீட்டுத் தொகை வழங்குதல் - முகவர் அறிக்கை - பத்திரம் உரிமை இழப்பு - பத்திரம் உரிமை மீட்பு - சரண் மதிப்பு - காப்பீட்டுப் பத்திரத்தின் மூலம் கடன் பெறுதல், இந்திய ஆயுள் காப்பீட்டுக் கழகம் - தொடக்கம் - நோக்கங்கள்.

அலகு:3

கடல் காப்பீடு: பொருள் - பிரிவுகள் - கடல்சார் காப்பீட்டின் பத்திர வகைகள் - கடல்சார் நடத்தலின் வகைகள் - இழப்பீட்டுத் தொகை வழங்குதல்.

அலகு:4

தீ காப்பீடு: பொருள் - பல வகையான காப்பீட்டுப் பத்திரங்கள் - ஒப்பந்தத்தின் நிபந்தனைகள் - இழப்பீட்டுத் தொகை வழங்குதல்.

அலகு:5

காப்பீட்டு முறைப்படுத்தல் மற்றும் வளர்ச்சிக்கான அதிகார சட்டம் 1999 அறிமுகம் - நோக்கங்கள் - ஐசுணுபு சட்டத்தின் சரத்துகள், அதிகாரங்கள் மற்றும் பணிகள். காப்பீடு தனியார் மயமாக்குதல் - ஆதரவும் ஏதிப்பும் - தனியார் மயமாக்குதலின் தற்போதைய நிலை.

பரிந்துரைக்கப்படும் புத்தகங்கள்:

1. காப்பீடு கோட்பாடுகளும் நெறிமுறைகளும் - முனைவர் L.P.இராமலிங்கம், பேராசிரியர் T.S.ஜெயக்குமார், முனைவர் M.செல்வக்குமார், மெரிட் இந்தியா பப்ளிகே'ன்ஸ், மதுரைஇ 2009.
2. Mishra M.N, Modern Concepts of Insurance, S.Chand and Co., Ltd., New Delhi, 2009.
3. Alka Singh, Insurance and Risk Management, Sultan Chand & Sons, New Delhi, 2010.
4. Mittal M.N, Insurance and Risk Management, Vikas Publishers, Mumbai, 2010.

CME 2532

CORPORATE ACCOUNTING

5Hrs/5Cr

Objective:

The objective of this course is to give a comprehensive understanding of all aspects relating to corporate accounting and to lay a theoretical foundation for the preparation and presentation of financial statements and to equip the students with the working knowledge of accounting practices in order in order to prepare for CA, CMA, and ACS.

UNIT I

Types of companies – Share capital – Types of shares – Issues, Forfeiture and reissue of shares – Issue and Redemption of Debentures and Preference shares.

UNIT II

Profits prior to Incorporation – Underwriting of Shares and rights issues – acquisition of Business by a Company.

UNIT III

Final Accounts of Companies – Preparation and presentation of final accounts of companies – bonus and dividend to shareholders – managerial remuneration – acquisition of business – pre-incorporation profits/loss.

UNIT IV

Amalgamation, Absorption and External Reconstruction – computation of purchase consideration – types of amalgamation – pooling of Interest method – purchase method – treatment of realisation expenses, Internal Reconstruction – types of reconstruction – reduction of share capital – reduction of liabilities – reduction of assets and disposal of balance of reconstruction account – scheme of reconstruction.

UNIT V

Liquidation – Liquidator's final statement of accounts – Accounting standards 14 - 26 – International Financial Reporting System – concepts.

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi, 2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi, 2009
3. S.P.Iyengar, Advanced Accounting Vol I, S.Chand & Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Vol I, Central Publishing Company, Kolkatta, 2006

CME 2634**CORPORATE LAWS****6Hrs/6Cr****Objective:**

This course orients students in laws relating to corporate entities with application of provisions from Companies Act 1956 and with applicable amendments made in 2013. It also provides insight to laws governing intellectual rights and loan disclosures.

UNIT I

Company – meaning- types of companies- nature- doctrine of incorporation & commencement of business- lifting of corporate veil- Memorandum of Association and its alteration – Doctrine of Ultra Vires – Articles of Association and its alteration – Doctrines of constructive notice and indoor management - Prospectus – Contents – Rules – Misstatements – liability

UNIT II

Membership in companies – Kinds – Rights and Liabilities – Shares – kinds – Application and allotment of shares - Transfer and Transmission of shares – Share certificate and Share Warrant.

UNIT III

Conduct of meetings- types- appointments-liquidation of companies- provisions as regards alteration of capital.

UNIT IV

Securitisation Act, 2002- NPA and disclosures- NPA management- in banks and insurance- Banking Regulation Act, 1949

UNIT V

Indian Patents Act, 1999- process of obtaining patents- patentable products- Offences- penalties.

Books for Reference:

1. Dr.Tuteja S.K, Business Law for managers, Sultan Chand & Sons, New Delhi, 2006.
2. Kapoor G.K, Lectures on Business & Corporate Laws, Sultan Chand & Sons, New Delhi, 2005.
3. Kuchhal M C, Mercantile Law, Vikas Publishing House Pvt. Ltd., Noida, 2004.
4. Praveen, Suggested Answers in Mercantile Law, Sultan Chand & Sons, New Delhi, 2005.

CME 2436**BUSINESS ETHICS****4Hrs/4Cr****Objective:**

This paper is aimed at imparting social, moral and ethical values into young minds which will create better businessmen with ethos.

UNIT I

Ethics: Meaning – Definition – Sources – Need for business ethics – Importance of business ethics – Factors influencing business ethics.

UNIT II

Principles: The "Seven Principles of Public Life" – selflessness, integrity, objectivity, accountability, openness, honesty and leadership.

UNIT III

Ethics in Marketing: Marketing ethics and consumer rights – Reasons for unethical practices – Socially responsible advertising – Portrayal of women in advertising.

UNIT IV

Ethics in Human Resource Management: Wages empowerment – Discrimination – Whistle blowing – Ethics at work place.

UNIT V

Ethical issues in society: Air pollution – Water pollution – Land pollution.

Books for Reference:

1. Dr. A.K. Gavai, Business Ethics, Himalaya Publishing House, Mumbai, 2008
2. R. V. Badi, N. V. Badi, Business Ethics, Vrinda Publications Ltd, Delhi, 2012
3. Andrew Crane & Dirk Matten, Business Ethics, Oxford University press, United Kingdom, 2010
4. C.S.V. Murthy, Business Ethics, Himalaya Publishing House, Mumbai, 2010

CME 2438

AUDITING AND ASSURANCE

4Hrs/4Cr

Objective:

The objective of the course is to gain knowledge to generally accept auditing principles, procedures, techniques and skills needed in the field of auditing. It mainly deals with the basic principles of auditing. It analyses the objects of expressing an opinion on statements of accounts, implication of reports, detection of errors and frauds. It elaborately discusses the various types of audit, its advantages, and conduct of audit, audit programmes, audit note book and working papers. It also covers internal audit, internal check and various vouching and depreciation methods. This course also makes a special study on valuation, verification of assets and liabilities and conducting of audit on limited companies.

UNIT I

Definition of Audit - objects - types of audit - statutory audit - private audit - Audit programme - audit notebook and working papers - Internal control - internal check - test check - Investigation

UNIT II

Vouching - cash transactions - trading transactions - impersonal ledgers - Verification and valuation of assets and liabilities - contingent liabilities - Reserves and provisions - general reserve - specific reserve - secret reserve - Provision for depreciation and doubtful debts - capital reserve

UNIT III

Audit of limited companies - qualifications - appointment, remuneration - removal - rights - Duties and liabilities of an auditor under the Companies Act

UNIT IV

Share capital audit - Share transfer audit - audit report - Standards of Auditing - Importance - Applications.

UNIT V

Audit of non-trading organisation - hospital - educational institution - hotel and clubs. Auditing in computerised environment - Systems audit.

Books for Reference:

1. Tandon B.N, Auditing, S Chand publishers, New Delhi, 2003.
2. Dinkar Pagne, Principles of Auditing, Sulthan Chand & Sons, New Delhi, 2002
3. Saxena and Saravanavel, Practical Auditing, Himalaya Publishing House, New Delhi, 2004
4. Khanna Pandey and Ahuja, Practical Auditing, S Chand & Co Ltd, New Delhi, 2002

CME 2440

E-COMMERCE

5Hrs/4Cr

Objective:

The objective of this course is to make the student familiar with the mechanism of conducting business transactions through electronic media, understand the methodology of online business dealings using e-commerce infrastructure. After completing this course, a student is expected to be able to explain various components of e-commerce, understand the dynamics-of e-commerce, appreciate the Internet technology and its utility in commercial activities, and understand the methodology of online business dealings using e-commerce infrastructure

UNIT I

Introduction to E-Commerce, features, and functions of e-commerce, e-commerce practices viz. traditional practices, scope and limitations of e-commerce, e-commerce security, Benefits, Impact of E-Commerce, State of e-commerce in India, problems and opportunities in e-commerce in India, legal issues, future of e-commerce.

UNIT II

Classification of E-Commerce, of E-Commerce Technology, Business Models, Framework of E-Commerce., Business to Business, Business to Customer, Customer to Customer, service provider, e-distributor, procurement and just-in-time delivery

UNIT III

Internet and its role in e-commerce, procedure of registering Internet domain, establishing connectivity to Internet, tools and services of Internet, procedure of opening e-mail accounts on internet.

UNIT IV

Transactions through Internet, requirements of e-payment systems, functioning of debit and credit cards, pre and post payment services, Marketing on the web, marketing strategies, creating web presence, advertising, customer service and support, web branding strategies, web selling models, Online booking systems, online booking procedure of railways, airlines, tourist and religious places, hotels and entertainment industry

UNIT V

Setting up Internet security, maintaining secure information, encryption, digital signature and their security measures, authenticity, privacy, integrity, non-repudiation, encryption, secret key cryptography, public key cryptography, SET, SSL, digital signatures, firewalls

Books for Reference:

1. Bharat Bhasker, Electronic Commerce -Framework, technologies and Applications, Tata McGraw Hill, 2002
2. Daniel Amor, E Business R (Evolution), Prentice Hall, 2nd Edition, 2001
3. Sandeep Krishnamurthy, E-Commerce Management, Vikas Publishing House, New Delhi, 2003
4. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill, 2009
5. P. T. Joseph, E-Commerce: A managerial Perspectives, Prentice Hall India, 2002

CME 3201

BUSINESS CORRESPONDENCE

3Hrs/2Cr

Objective:

The objective of the course is to equip the students to develop communication skills required to work in an organization. This course focuses on business letters namely letter of inquiry, offer and acceptance, complaints, claims and adjustments, credit and collection letters.

Unit I

Commercial correspondence – meaning & introduction – qualities of a good business letter – form & lay out of business letters – various occasions for drafting business letters

Unit II

Circular letters, sales letters - trade enquiries, offers & quotations (terms used in offers and quotations) - order letters

Unit III

Credit and status enquiries – replies to status inquiries, collection letters – collection process, features of collection letter, complaints and adjustments

Unit IV

Banking correspondence – customer to bank and bank to customer, insurance correspondence – life insurance – opening a policy

Unit V

Agency correspondence, correspondence with government, export import correspondence, letters for job situations.

Books for Reference:

1. Korlahalli & Rajendra Paul, Essentials of Business Communication, Sultan Sons, New Delhi
2. Hoami Pradan, Business Communication, Himalaya Publishing House, New Delhi.
3. Nicky Stanton, Mastering Communication, McMillan Pvt. Ltd., New Delhi.
4. Roy & Roy, Business Communication, Himalaya Publishing House, New Delhi.
5. Caul, Business Communication, Printice Hall of India Pvt., Ltd., New Delhi.

CME 3631

HIGHER ACCOUNTING

6Hrs/6Cr

Objective:

The objective of this course is to gain accounting knowledge in the various sectors like Insurance, Banking, Railways and Electricity. This is a one semester course deals with the preparation of final accounts of Insurance companies and banking companies double accounting system. Farm accounting, Hotel accounting. Few of the many Accounting standards in India are also dealt with.

UNIT I

Insolvency of sole trader and firm – Act of Insolvency – Official Receivers / Assignees – Preferential creditors – Secured creditors – Unsecured creditors – Deficiency account.

UNIT II

Accounting of banking companies – Forms of Business in which Banking companies may engage – Final Accounts of Banking companies – Accounting of Insurance companies – Accounts of Life Insurance Business – Revenue Accounts – Balance sheet – Accounts of General Insurance Business.

UNIT III

Accounting of Holding companies – Definitions – Consolidated Balance Sheet – Elimination of Common transactions – Treatment of Fictitious Assets, Unrealized Profit, contingent liabilities, Dividend, debentures – Disposal or Additional acquisition of shares in Subsidiary company – Revaluation of Assets.

UNIT IV

Double Account System – Meaning – Difference between Double Account System and Double Entry System – Accounts of Railways – Accounts of Electricity supply companies

UNIT V

Farm Accounting, Hotel Accounting, Government Accounting, Accounting standards - AS-1, 3, 6, 10, 14, 27, 39, 42.

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi, 2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi, 2009
3. S.P.Iyengar, Advanced Accounting Vol I, S.Chand & Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Vol I, Central Publishing Company, Kolkatta, 2006

CME 3633

INCOME TAX- I

6Hrs/6Cr

Objective:

The objective of this course is to provide knowledge on the basic concepts of income and taxability under Income tax Act, 1961 and to equip the students with the working knowledge of taxation practices in order in order to prepare for CA, CMA, and ACS.

UNIT I

Introduction – Various terms Income Tax Act, 1961 – Finance Bill – Definition of person, Assessee: Previous year, assessment year – Concept of income – Exempted income – Residential status & Incidence of Tax: Gross total income and total Income.

UNIT II

Computation of income from salaries – definition – Forms of salary – Perquisites - Gratuity – Pension – Lease Enhancement – Provident Fund – Deduction – Profit in lieu of salary.

UNIT III

Computation of income from house property – Definitions – Meaning of various terms – Gross Annual Value – Net Annual Value – Partly let out and partly self – occupied house – Part on the year let out and part of the year self-occupied – unrealized rent.

UNIT IV

Computation of income from Business / Profession / Vocation – Definitions – Business, Profession and Vocation – Methods of Accounting – Expenses expressly allowed – Allowed losses – Expenses expressly disallowed.

UNIT V

Computation of income from Capital gains – Definitions – Incomes that are taxed under other sources – Deductions – various kinds of securities – Tax Deducted at Source.

Books for Reference:

1. Dr. Vinod Singhania, Students guide to Income Tax, Taxman Publications, 2015.
2. Dinkar Pagare, Law and Practice of Income Tax, 26th edition, Sultan Chand & Sons, 2015.
3. Bhagwati Prasad, Income Tax & Practice 29th Edition, Vishwa Prakashan, 2015.
4. Dr. Vinod Singhania, Direct Taxes, Taxman Publications, New Delhi, 2015.

CME 3635**COST ACCOUNTING I****6Hrs/6Cr****Objective:**

This course deals with the techniques of cost computation. It explains the cost classification, especially with reference to "Elements of Cost", brings out the clear distinction between cost unit and cost center, and considers inventory control, labour cost control and overhead control. It envelops in its ambit the different methods of costing such as unit costing, contract costing etc.

UNIT I

Introduction-limitations of financial accounting, meaning and scope of cost accounting, objectives and advantages of cost accounting, costing-an aid to management, financial accounting vs cost accounting, limitations and objections against cost accounting, costing system, characteristics of an ideal cost accounting, installation of costing system- steps for installation-practical difficulties in installing a costing system, steps to overcome practical difficulties, cost units, methods of costing, types of costing, evolution of development of cost accounting

UNIT II

Elements of cost, Expenses excluded from cost, cost sheet or statements of cost, treatment of stock, cost concepts, cost classification, Materials- Purchase control-Purchase procedure- Functions of stores department-EOQ- Stock levels- ABC analysis- VED analysis- Various methods of pricing of material issues- Treatment of wastage, scrap, defectives and spoilage

UNIT III

Labour- Introduction- Labour costs, control over labour costs, personnel department, functions, Time and motion study, Time keeping vs Time booking, Essential features of good wage system, systems of wage payment, time wage system, piece rate system, premium and bonus plan, group bonus schemes, co-partnership and profit sharing schemes, idle time, over time treatment of wages for work on holiday, out workers, casual worker, labour turnover

UNIT IV

Definition of overhead- Classification- Steps in overhead accounting-Collection of production overhead allocation and apportionment of overhead to cost centers (Departmentalization of overhead), Reapportionment of service department expenses – Overhead absorption- Absorption rates- over absorption and under absorption treatment

UNIT V

Job costing, Batch costing, Contract costing

Books for Reference:

1. Arora M N Cost Accounting – Principles and Practice, Vikas Publishing House, Noida, 2004.
2. Maheswari S N, Principles of Cost Accounting, Sultan Chand & Sons, New Delhi, 2003.
3. Arora M N, A Text book of Cost Accountancy, Vikas Publishing House, New Delhi, 2004.
4. Iyengar, S P. Cost Accounting, Sultan Chand & Sons, New Delhi, 2005.

CME 3537**HUMAN RESOURCE MANAGEMENT****5Hrs/5Cr****Objective:**

This course sheds light on proper utilisation of human resource and empowerment. This course covers the role of human resource management and qualities necessary for a human resource manager. It includes planning and organizing the human resource function, different types of leadership and various methods of motivating human beings, job satisfaction and morale. This course also includes procurement of human resources, man power planning, performance appraisal and training and development

UNIT I

Introduction – Definitions – Functions – Objectives of human resource management – Planning human resource function: Human resource philosophy – Human resource objectives – functions to be performed – duties and responsibilities. Human resource policies – needs – types – Guidelines for formulating human resource policies – Organizing.

UNIT II

Leadership: Definition – Need – Functions – Approaches to study leadership – Leadership style – Motivation: Definition – Approaches – characteristics – Motivation Theories – Incentives – Job satisfaction and Morale.

UNIT III

Procurement of personnel: Determinants of quality of human resources – Determinants of quantity of human resource – Objectives of manpower planning – Process recruitment and selection - selection techniques – Placement and Induction

UNIT IV

Performance Appraisal: Purposes of appraisal – Criteria of performance Appraisal – methods – performance appraisal of managers – Limitations – post appraisal interview – Frequency of appraisal – essentials of good appraisal system – evaluation of performance appraisal system.

UNIT V

Training and Development: Training, Education and development – principles of learning – need and objectives of training – Determining training needs – training methods for operative – management development methods – organisation development- Grievances – Meaning – Causes – Grievance procedure.

Books for Reference:

1. Sheikh A M Human Resource Development and Management – S Chand Publishers, New Delhi, 2003.
2. Mamoria C B Personnel Management Kitab Mahal, Calcutta, 2002.
3. Prasad, L.M, Human Resource Management, Sultan Chand & Sons, 2006.
4. Gupta C B, Human Resource Management, Sultan Chand & Sons, 2005.

CME 3202**EXPORT MARKETING****3Hrs/2Cr****Objective:**

The objective of this course is to gain understanding in the field of export marketing and to provide adequate knowledge in licensing procedures, export financing, export incentives. This is one semester course designed to understand the role of export marketing in the economy. It covers the various aspects of licensing procedures and export financing and export incentives. It also further covers various institutions which help in promoting exports.

UNIT I

Role of Exports in a developing economy - Export Marketing Environment-Selection of export markets-selection of products-entry into market-direct and indirect - Pre shipment Inspection

UNIT II

Exports Procedure under regulations-export trade control-categories of exporters-OGL Licensing Procedure-code numbers-export declaration forms-customs regulations

UNIT III

Export finance-commercial banks-ECGC-EXIM bank-Market Development fund

UNIT IV

Export Incentives-cash compensatory support-replenishment licenses-Duty drawback central excise rebate

UNIT V

Promotion Institutions-Ministry of Commerce-commodity boards-export promotional council-Trade Development Authority- Directorate of Fairs and Exhibitions-EPZ-Regional Groups - Consultancy Services

Books for Reference:

1. Francis Cherunilam, International Marketing, Himalaya Publishing House, New Delhi, 2012
2. Bhattacharya, International Trade, Chand & Sons, New Delhi, 2012
3. Balagopal T.A.S, Export Management, Himalaya Publishing House, New Delhi, 2012.
4. Yuvaraj, International Marketing, Tamilnadu book house, Chennai, 2012

CME 3200

ENVIRONMENTAL STUDIES

4Hrs/2Cr

Objective:

This course facilitates the students to get adequate knowledge on environmental problems and to develop an attitude towards the betterment of environment.

UNIT I

Multidisciplinary nature of environmental studies: Definition, scope and importance & Need for public awareness, Natural Resources: Renewable and non-renewable resources - Natural resources and associated problems - Forest resources: Use and over-exploitation, deforestation, case studies - Timber extraction, mining, dams and their effects on forest and tribal people - water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies - Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies - Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification - Role of an individual in conservation of natural resources - Equitable use of resources for sustainable lifestyles.

UNIT II

Ecosystems: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers - Energy flow in the ecosystem - Ecological succession - Food chains, food webs and ecological pyramids - Introduction, types, characteristic features, structure and function of the Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries), Biodiversity and its conservation - Introduction - Definition: genetic, species and ecosystem diversity, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels, India as a mega-diversity nation, Hot-spots of biodiversity - Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India - Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

UNIT III

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste Management: Causes, effects and control measures of urban and industrial wastes - Role of an individual in prevention of pollution - Pollution case studies - Disaster management: floods, earthquake, cyclone and landslides,

UNIT IV

Social Issues and the Environment - From Unsustainable to Sustainable development - Urban problems related to energy - Water conservation, rain water harvesting, watershed management - Resettlement and rehabilitation of people; its problems and concerns. Case Studies - Environmental ethics: Issues and possible solutions - Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies -

Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness.

UNIT V

Human Population and the Environment: Population growth, variation among nations, Population explosion – Family Welfare Programme, Visit to a local area to document environmental assets river/forest/grassland/hill/mountain - Visit to a local polluted site-Urban/Rural/Industrial/Agricultural - Study of common plants, insects, birds - Study of simple ecosystems-pond, river, hill slopes, etc.

Books for Reference:

1. http://collegesat.du.ac.in/UG/Environmental%20Studies_ebook.pdf
2. Sankaran s., Environmental Economics, Margham publication, Chennai, 1998.
3. Francies cherunellum "Business environment" Himalaya publishing, 2004.
4. S.P. Gupta, "Environmental Issues for the 21st century led., Mittal Publications, New Delhi. 2003
5. E.El. Hinnawi & A.K Piswas, "Renewable sources of Energy and the Environment, Tycooly international publishing co., 1981
6. Subramanian N.S and Sambamoorthy A.V "Ecology", Narosa Publishing House, New Delhi, 2000.

CME 3632

MANAGEMENT ACCOUNTING

6Hrs/6Cr

Objective:

The objective of this course is to enhance skills on analysing of financial statements and in decision making and to equip the students with the working knowledge of accounting practices in order in order to prepare for CA, CMA and ACS.

UNIT I

Introduction to Management accounting – Difference between management accounting and financial accounting. Analysis and interpretation of accounting statements: Trend analysis, Common size statements, and Comparative statements, accounting ratios: Important accounting ratios – Trading on equity capital gearing - Preparation of trading profit and loss account and balance sheet.

UNIT II

Fund flow statement – Schedule of Changes in Working Capital – Cash flow statement – Difference between Fund Flow Statement and Cash Flow statement.

UNIT III

Working Capital Management – meaning of working capital – Types of Working Capital – Factors Determining Working Capital, Break Even analysis - Break Even chart – Application of marginal costing in decision making – C.V.P analysis.

UNIT IV

Capitalization: Over Capitalization - Causes of over capitalization – Under capitalization – Causes of under Capitalization – consequences of over and under capitalization.

UNIT V

Concept of Capital Budgeting – Importance – Kinds of Capital investment proposals – Capital Budgeting Appraisal Methods – Capital Rationing.

Books for Reference:

1. Khan M & Jain Y, Cost and Management accounting, Tata McGraw Hill India Ltd, New Delhi, 2002.
2. Ramachandran & Srinivasan, Management Accounting, Sriram Publications, 2004.
3. Goyal, Manmohan, Management Accounting, Sahitya Bhawan, Agra, 2003.
4. Pandey, I.M, Management Accounting, Vikas Publishing House, 2004

CME 3634

INCOME TAX II

6Hrs/6Cr

Objective:

The objective of this course is to provide with the procedures of computation of income and tax liability of various assesses and to equip the students with the working knowledge of taxation practice in order to prepare for CA, CMA, and ACS.

UNIT I

Income tax authorities and their powers – Appointment – Powers – Duties of Tax authorities – Assessing Officer – Administrative Hierarchy of tax authorities.

UNIT II

Assessment of Individuals – various income included of and individual – Taxable Income – tax liability – Problems on computation of taxable income of an individual – clubbing of incomes – deemed income.- clubbing of income set off and carry forward of losses.

UNIT III

Assessment of Hindu undivided families – introduction – basic conditions of HUF – basis of computation of Taxable income – tax liability – problems on computation of taxable income of HUF.

UNIT IV

Assessment of firms (PFAS and AOP) – Scheme of Taxation – calculation of remuneration of Partners - tax liability – problems of computation of taxable income of Firm and Partners.

UNIT V

Assessment of Companies – Assessment of Companies – Kinds of companies and its definitions – Residential Status of a Company – Minimum Alternate Tax (MAT)

Procedures of assessment and collection and recovery of tax: Filing of Return and Due Dates - Forms of returns – assessment – Types of Assessment – Advance payment of Tax – Penalties and prosecutions – Refund of excess tax – Appeals and revisions – Permanent Account Number – Tax Planning – E-filing – Tax Holiday – Direct Taxes Code – concepts.

Books for Reference;

1. Dr. Vinod Singhania, Students guide to Income Tax, Taxman Publications, 2015.
2. Dinkar Pagare, Law and Practice of Income Tax, 26th edition, Sultan Chand & Sons, 2015.
3. Bhagawathi Prasad, Income tax Law and Practice, 29th edition, Vishwa Prakashan, 2015.
4. Dr. Vinod Singhania, Direct Taxes, Taxman Publications, 2015.

CME 3636

COST ACCOUNTING II

6Hrs/6Cr

Objective:

The objective of the course is to impart knowledge on the application of various costing techniques. This course launches upon the vital areas of "cost control". It covers marginal costing technique, budgetary control and standard costing, which are applied to managerial decision making.

UNIT I

Unit costing, Process costing, Joint product costing.

UNIT II

Operation costing, Service costing, Transport costing, Classification costs, Collection of costs, ascertainment of costs, service cost and management decisions, canteen costing, multiple operation costing

UNIT III

Process Costing: Application of process costing, comparison between job costing and process costing, elements of production and abnormal process loss, inter process profits, Meaning of equivalent production, calculation of equivalent production, joint products costing, non-cost or sales value method or cost methods, Reconciliation of cost and financial accounts, Need for reconciliation, Reason for disagreement in profit, preparation of reconciliation statements

UNIT IV

Budgetary Control, Meaning and need for budget, Budget organisation, Kinds of budgets, ZBB Merits and limitations of Budgetary control

UNIT V

Standard costing, Meaning, Merits and Demerits, Material, Labour, Overheads and Sales variance

Books for reference:

1. Arora M N Cost Accounting – Principles and Practice, Vikas Publishing House, Noida, 2004.
2. Maheswari S N, Principles of Cost Accounting, Sultan Chand & Sons, New Delhi, 2003.
3. Arora M N, A Text book of Cost Accountancy, Vikas Publishing House, New Delhi, 2004.
4. Iyengar, S P. Cost Accounting, Sultan Chand & Sons, New Delhi, 2005.

CME 3538

INVESTMENT MANAGEMENT

5Hrs/5Cr

Objective:

This paper envisions the fundamentals of investment, security markets and analysis for better investment planning.

UNIT I

Investment: Meaning of investment – definition of investment – nature of investment – need of investment – investment environment – scope of investment – speculation, gambling – investment principles – investment process.

UNIT II

Investment avenues: features of equity shares, preference shares and its types – bonds and its various types – features – innovative financial instruments – convertible debentures and warrants – characteristics – zero coupon – bonds – deep discount bond – secured premium notes – post office saving schemes – LIC policies – mutual funds.

UNIT III

Return: historical vs. expected risk – computation of historical & expected return of stock-current yield – investment risks: Systematic risk – market risk – interest rate risk – purchasing power risk – unsystematic risk – business risk – financial risk.

UNIT IV

Securities market: New issue market – Organisation structure of New Issue Market (NIM) – functions of NIM – Mechanics of floating new issue – Secondary Market – definition of Stock exchange – function of stock exchange market – Organisation of stock exchanges in India – mechanics of security trading in stock exchange – stock market indices – NSE index – BSE index.

UNIT V

Listing of securities: scope – objectives of listing – advantages of listing – disadvantages of listing – Security dealings and government: securities contracts (Regulation) Act 1956 – Securities and Exchange Board of India (SEBI)

Books for Reference:

1. Dr. Preethi Singh, Investment management – Himalaya Publishing House, New Delhi, 2003.
2. Fischer and Jordan, Security Analysis and Portfolio Management – Prentice Hall India Ltd., New Delhi, 2002.
3. Alexander and Bailey, Investments – Prentice Hall of India Ltd., New Delhi, 2004.
4. Avadani, Investment Management, Himalaya Publishing House, New Delhi, 2003.

DEPARTMENT OF COMMERCE
Programme for B.Com – Computer Applications (CMC)
Self – Financed Programme

2015 BATCH STUDENTS

Semester	Part	Course Code	Course Title	Hrs/Wk	Credit	Marks
I	I	CMC 1201	TAM/FRE/HIN/ வணிகக் கடிதத் தொடர்புகள் - I	3	2	30
	II	ENS 1201	Conversational Skills	3	2	30
	III-M	CMC 1431	Principles & Practices of Marketing	4	4	60
	III-M	CMC 1433	Business Communication	4	4	60
	III-M	CMC 1535	Financial Accounting I	5	5	75
	III-S	CMC 1437	Fundamentals of Computers (T+L)	5	4	60
	IV-LS	CMC 1207	Entrepreneurship	3	2	30
	IV-E	CMC1209	Salesmanship	3	2	30
			Total	30	25	375
II	I	CMC 1202	TAM/FRE/HIN/ வணிகக் கடிதத் தொடர்புகள் - II	3	2	30
	II	ENS 1202	Reading & Writing Skills	3	2	30
	III-M	CMC 1432	Business Economics	4	4	60
	III-M	CMC 1434	Banking Theory and Practices	4	4	60
	III-M	CMC 1536	Financial Accounting II	5	5	75
	III-S	CMC 1438	E Commerce	5	4	60
	III-S	CMC 1440/ BCA	Accounting for Managers	5	4	60
	IV-LS	CMC 1208	Principles of Investment	3	2	30
	IV-E	CMC1210	Logistics and Supply Chain Management	3	2	30
	V	XXX 0000	Extension activity: NSS/NCA/SLP	--	2	30
			Total	35	29	435
III	I	CMC 2201	TAM/FRE/HIN/ அறிவுலகமேலாண்மை	3	2	30
	II	ENS 2201	Study Skills	3	2	30
	III-M	CMC 2631	Partnership Accounting	6	6	90
	III-M	CMC 2533	Business Law	5	5	75
	III-M	CMC 2435	Relational Database Management (T+L)	4	4	60
	III-M	CMC 2437	Visual Basic (T+L)	4	4	60
	III-S	CMC 2439	Business Statistics	5	4	60
			Total	30	27	405
IV	I	CMC 2202	TAM/FRE/HIN/ கம்ப்யூட்டர்-கேள்பாடுகளும் நடைமுறைகளும்	3	2	30
	II		English	3	2	30
	III-M	CMC 2632	Corporate Accounting	6	6	90
	III-M	CMC 2534	Corporate Law	5	5	75
	III-M	CMC 2436	Programming in C (T+L)	4	4	60
	III-M	CMC 2438	Multimedia (T+L)	4	4	60
	III-S	CMC 2440	Business Mathematics	5	4	60
	V	XXX 0000	Extension Activity: NSS/NCA/SLP	--	2	30
			Total	30	27	405

Semester	Part	Course Code	Course Title	Hrs/ Wk	Credit	Marks
V	III- M	CMC 3631	Higher Accounting	6	6	90
	III- M	CMC 3633	Marketing Research	6	6	90
	III- M	CMC 3635	Web Technology (T+L)	6	6	90
	III – M	CMC 3537	Software Engineering (T+L)	5	5	75
	IV- LS	CMC 3209	Event Management	3	2	30
	IV- VAL	VAL	Value Education	4	2	30
			Total	30	27	405
VI	III- M	CMC 3632	Financial Management and Control	6	6	90
	III- M	CMC 3634	Income tax	6	6	90
	III- M	CMC 3636	. Net Programming (T+L)	6	6	90
	III – M	CMC 3538	Project Work	5	5	75
	IV- LS	CMC 3210	Export Promotion	3	2	30
	IV- EVS	CMC 3200	Environmental Studies	4	2	30
			Total	30	27	405

S-SUPPORTIVE

Semester	Part	Course Code	Course Title	Work load per week (in hours)	Credit	Marks
I	III – S	CMC1437	Fundamentals of Computers	5	4	60
II	III – S	CMC 1438	E Commerce	5	4	60
II	III – S	CMC 1440/BCA	Accounting for Managers	5	4	60
III	III – S	CMC 2439	Business Statistics	5	4	60
IV	III – S	CMC 2440	Business Mathematics	5	4	60

E-NON-MAJOR ELECTIVE

Semester	Part	Course Code	Course Title	Work load per week (in hours)	Credit	Marks
I	IV - E	CMC1209	Salesmanship	3	2	30
II	IV - E	CMC1210	Logistics and Supply Chain Management	3	2	30

LS-LIFE SKILL

Semester	Part	Course Code	Course Title	Work load per week (in hours)	Credit	Marks
I	IV- LS	CMC 1207	Entrepreneurship	3	2	30
II	IV- LS	CMC 1208	Principles of Investment	3	2	30
V	IV- LS	CMC 3209	Event Management	3	2	30
VI	IV- LS	CMC 3210	Export Promotion	3	2	30

தோக்கம்:

போட்டிகள் நிறைந்த தற்கால உலகத்தில் வணிகக் கடிதங்களின் முக்கியத்துவத்தையும் மற்றும் நடைமுறையில் எந்த பிழையும் இல்லாமல் எவ்வாறு அதனைப் பயன்படுத்துவது என்பதையும் விளக்குவது இப்பாடத்தின் தோக்கமாகும்.

அலகு:1

வணிகத் தொடர்பு - பொருள் - இலக்கணம் - முக்கியத்துவம் - அடிப்படைக்கருக்கள் - பணிகள் - வழிமுறை

அலகு:2

தேடி மற்றும் மறைமுக வணிகத் தொடர்பு - தடைகள் - மின்னணு அமைப்புச் சாதனங்கள்

அலகு:3

விசாரணைக் கடிதங்கள் - ஆணையறுக் கடிதங்கள் - பொருள் - முக்கியத்துவம் - வழிமுறைகள்

அலகு:4

விற்பனைக் கடிதங்கள் - பொருள் - வழிமுறைகள்

அலகு:5

பின்பற்றுக் கடிதங்கள் - வழிமுறைகள் - கடிதங்கள்

Books for Reference:

1. ராதா, வணிக கடிதங்கள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2005.
2. ராதா, வணிக கடித தொடர்புகள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2006.
3. Dr.K.அன்பழகன் S.இராமர், வணிகக் கடிதத் தொடர்பு - மெரிட் இந்தியா பப்ளிகேஷன்ஸ், மதுரை, 2008.
4. R.S.N. Pillai & Bhagavathi, Commercial Correspondence & Office Management S & Chand Publications, New Delhi, 2009.
5. Prasantha Ghosh, Secretarial Practice & Management, Sultan Chand Publications, New Delhi, 2010.
6. பாலை ஆசிரியர் குழு, வணிக மடவியலும் அலுவலக மேலாண்மையும் - பாலை பதிப்பகம் 2007.

CMC431 - PRINCIPLES & PRACTICES OF MARKETING - 4Hrs/4Cr**Objective:**

The object of the course is to inculcate knowledge on principles and practices of marketing and to create awareness on the issues of Marketing.

UNIT I

Origin - meaning - definition- evolution of Marketing, classification of Marketing - micro and macro Marketing, objectives of Marketing, factors influencing Marketing, merits of Marketing.

UNIT II

Marketing system - Marketing mix- meaning- definition – elements- problems. - Marketing process-Marketing functions

UNIT III

Marketing environment – introduction – scanning the environment – importance of environment analysis- concept of micro and macro environment- Company's suppliers- intermediaries- customers- competitors- public- demographic environment- political environment- physical environment- technological environment- economic environment- legal environment.

UNIT IV

Marketing segmentation Introduction – definition – bases – geographic – demographic - psychographic- socio- economic. Benefits of marketing segmentation.

UNIT V

Marketing strategy and planning- Introduction – meaning- definition-- features- marketing planning- importance- benefits- characteristics- planning process

Product mix- introduction- meaning- types. Product life cycle- stages- benefits. New product development- process- importance- technologies- advantages.-pricing- types- legal restrictions- place- factors- types of distributors- promotion – tools of promotion.

Reference books:

1. R.S.N. Pillai & Bagavathi, Modern Marketing, S.Chand, New Delhi, 4th edition, 2010.
2. Dr. Gupta, Marketing Management, Sultan Chand & sons, New Delhi, 15th edition, 2012.
3. Philip Kotler, Principles of Marketing, Prentice Hall of India, New Delhi, 2006
4. Rajan Nair, Marketing, Sultan Chand & Sons, New Delhi, 2004

CMC 133 BUSINESS COMMUNICATION 4hrs/4cr
--

Objective:

To develop the written and oral business communication skills particularly, interviews, group discussions, presentation skills, negotiating and bargaining. Modern communication methods, business letters, trade enquiries, Correspondence Procedures, Preparation of a resume, Public speech and so on, are taught.

UNIT I

Business Communication: Meaning, Importance of Effective Business Communication, Barriers to Communication, Modern Communication Methods, Business Letters, Need, Functions, Kinds, Essentials of Effective Business Letters, Layout of effective business letters.

UNIT II

Enquiries: Offer, Quotations, Trade Enquiries: Orders and their Execution, Extension of time for execution of orders, Declining orders. Credit and Status Enquiries: Complaints and Adjustments: Collection Letters: Statement of account, Reminders, Strong reminders and limiting date letters. Sales Letters and Circular Letters.

UNIT III

Business Correspondence: Banking Correspondence: Letters from banker and customer and letters from customers to bankers. Insurance Correspondence: Surrender, Revival and other enquiries related to insurance. Agency Correspondence Letters.

UNIT IV Letter, Interview:

Application Letters: Preparation of Resume with detailed types of preparing resumes. Interview: Meaning, Objectives and Techniques for facing various types of Interviews.

UNIT V Report and Public Speech:

Public Speech: Characteristics of a good Speech. Business Report Presentations: Methods of preparing business report for different domains.

Reference Books:

1. Rajendra Pal and Korlahally, 'Essentials of Business Communication', Sultan Chand & Sons, New Delhi, 2006.
2. Ramesh M.S. and Pattanshetti C.C., 'Business Communication', Sultan Chand & Sons, New Delhi, 2003.
3. Rodriquez M.V., 'Effective Business Communication Concept', Vikas Publishing Company, New Delhi, 2003.

CMC1635 FINANCIAL ACCOUNTING I 5Hrs/5Cr
Objective:

The objective of the course is to enable students understand the fundamentals of financial accounting system. This course develops skills on the application of the theoretical knowledge of financial accounting in business in the backdrop of Accounting Standards.

UNIT I

Accounting Principles, Concepts and Conventions: Accounting Standards – Meaning – Objectives – Significance – Advantages - Accounting Standards- International and Indian Standards - Functions of Accounting Standards Board - Procedure for formulating Accounting Standards – IAS 1,2,3,6,7 and10. Rectification of errors - Journal Entries – Suspense accounts - Rectification before and after the preparation of the Trial balance - after the preparation of the Final accounts.

UNIT II

Bank Reconciliation Statement - Reconciliation in case of favourable and unfavourable balances in cash book and passbook - Reconciliation after adjustment in cash book and passbook.

UNIT III

Bill of Exchange – Meaning – Types - Promissory Notes – Features - Accounting treatment in the bills of exchange holding the bill till due date – Discounting of a bill – Endorsing a bill – Dishonour of a bill – Insolvency - Renewal of a bill – Retiring a bill - Accommodation bill. Average due date and Account Current - where amount is lent in different instalments - where the amount is lent in a single instalment - Account current - Forward method; Interest Table Method - Product Method - Red Ink Interest - Daily Balance Method - Backward method.

UNIT IV

Depreciation - Methods of providing depreciation – Straight line method - Written down value method - Change in method of depreciation - Annuity method - Sinking fund method - Insurance policy method - Insurance claims - Loss of stock policy - Average clause - Loss of profit policy - Goods sent on sale or return - Method of recording sale or return transactions: when the transactions are very few and rare – when the transactions are frequent - When transactions are large in number

UNIT V

Consignment – Stock valuation - Accounting for losses – Cost price method - Invoice price method - Memorandum column method. Joint Venture - Separate set of books – Same set of books - Memorandum joint venture method.

Reference books:

1. Mukherjee A and Hanif M, Financial Accounting, TATA McgrawHills, New Delhi, 2003
2. Shukla M.C, Advanced Accounting, Sultan Chand and Sons, New Delhi, 2010
3. Gupta R.L and Radhaswamy, Advanced Accountancy, Sultan Chand and Sons, New Delhi, 2007
4. Jain S.P and Narang K.L, Advanced Accountancy, Kalyani Publishers, New Delhi 2007
5. Arulanandam M.A and Raman K.S, Advanced Accountancy, Himalaya Publishing House, Mumbai 2012

CMC1437 FUNDAMENTALS OF COMPUTERS (T+E) 5Hrs/4Cr

Objective:

To familiarize the students with the basic functioning of computer including hard ware and software.

UNIT I Introduction to computers:

Introduction – classification of computers – characteristics of computers –generations of computer – anatomy of computer – network of computer – types of network – LAN – Intranet and internet – WWW, E- Mail – search engines – multimedia applications.

UNIT II Input and output unit:

Input devices – functions – classification of input devices (keyboard, mouse, mouse pad, trackball, joystick etc...) - output devices –monitor- characteristics- classification of monitor – printer – classification – Plotter

UNIT III Computer Systems:

CPU – types of computers – memory – buses for I/O devices – text – graphics state of the art – I/O pointing devices – output devices – display screen – Printers.

UNIT IV Memory unit:

Introduction – types of memory (RAM, ROM, PROM, EPROM,EEPROM) – Flash memory – auxiliary storage devices – Magnetic tape, hard disk, floppy disk, Optical disk, CD-ROM,CDR drive, CD- RW Disks.

UNIT V Computer S/W and Microsoft Word:

Computer software- types of software- MS Word – entering a text- saving a document – editing a document – finding and replacing text – creating hyper text link – tables- mail merge – MS Excel- Entering formulas – working with workbook- MS PowerPoint – creating presentation with animations – open office and Star office

Reference books:

1. Alexis Leon and Mathews Leon "fundamentals of information technology " Tata Mc Graw hills pvt ltd New Delhi(2002)
2. SK Jain "Information technology "O:"level made simple" BPB publications (1999)
3. V Rajaram "Fundamentals of computer prentice hall India (1999)
4. E Balagurusamy, Fundamentals of computers, Tata Mc Graw hills pvt ltd New Delhi(2014)

CMC1207	ENTREPRENEURSHIP	3Hrs/2Cr
---------	------------------	----------

Objective:

The subject covers the scope for women entrepreneurs in India, problems faced by small scale industries, preparation of feasibility business plan, preventive and remedial measures for sick industries and to create a desire in the minds of the students to become a successful entrepreneur.

UNIT I Introduction:

Meaning and functions of an entrepreneur-Need and importance of entrepreneurship-Problem of unemployment-Self employment Vs Entrepreneurship-Women entrepreneur-Challenges of women entrepreneurship

UNIT II Business opportunity-Identification and Preliminary Project Report:

Opportunity search-Divergent thinking mode-Opportunity selection-Market survey-Preparation of Questionnaire-Concept of survey-Data collection-Analysis and interpretation-Preliminary Project Report

UNIT III Business Plan:

Meaning and importance—objectives-selection contents-Marketing and technical feasibility-Financial viability-Precautions to be taken by entrepreneur-Project appraisal –Break even analysis.

UNIT IV Institutional support:

District Industries Centre DIC, SIPCOT-National small Industries Corporation of India-SEZ

UNIT V Financial Assistance for Small Enterprises:

Bank Loans-Angel funding-Venture funding-Self Employment Schemes-Prime minister Employment Generation Programme

Reference books:

1. Desai Vasant, Management of Small Scale Industries, Himalaya Publishing House, New Delhi

2. Taneja Satish and Gupta S L, Entrepreneurship Development- New Venture Creations, Galgotia Publishing Company, New Delhi
3. Gupta C B and Srinivas, Entrepreneurial Development, Sultan D Chand & Sons, New Delhi
4. Chandra P, Project preparation, Appraisal and implementation, Tata McGraw Hill, New Delhi.

CMC 1209

SALESMANSHIP

3Hrs/2Cr

Objective:

The objective of the course is to provide an in-depth understanding on salesman ship as an art, science and profession.

UNIT I

Origin and development of salesmanship – salesmanship – important methods – duties of the sales manager and control of salesman.

UNIT II

Fundamentals of successful selling – sales personality – importance and nature of product knowledge- different types of customers – types of salesmanship.

UNIT III

Buying motives – customer psychology – important buying motives – rational versus emotional motives – selling points and buying motives – attitudes of salesman.

UNIT IV

Travelling salesmanship – sales process- prospecting – methods of prospecting – responsibility and problems – approaches – types of approach – retail salesman- duties, responsibilities and problems.

UNIT V

Advertising and publicity – salesmanship and advertising – purpose and importance of advertising – classifications of advertising – benefits to manufacturer, retailer and consumer- code of commercial against modern advertising – advertising in media.

Reference books:

1. Rustom S. Davar, salesmanship and publicity, 16th edition, Vikas Publication House Pvt Ltd.
2. Rajan Nair, Marketing Management, Sultan Chand & Sons, New Delhi, 2004
3. Santakki, C N, Salesmanship, kalyani Publishers, New Delhi, 2000
4. R.S.N. Pillai & Bagavathi, Modern Marketing, S.Chand, New Delhi, 4th edition, 2010.

நோக்கம்:

பல்வேறு வகையான கடிதங்கள், அலைவகளின் தன்மை, அமைப்புக் குறித்து வினாக்கூதல் இப்பாடல்தின் நோக்கமாகும்.

அலகு-1

புகள் மற்றும் சரிகட்டுதல் - வசூல் - வழிமுறைகள்.

அலகு-2

பொக்குவரத்து - வேலைப்பணிக்கான கடிதங்கள்.

அலகு-3

சய அறிமுகப் படிவம் - பணி நியமனக் கடிதங்கள்.

அலகு-4

அறிக்கை - பொருள், முக்கியத்துவம் - கூறுகள் - வகைகள்.

அலகு-5

பொருளடக்கம் - சட்டப்பூர்வ அறிக்கை - ஆண்டறிக்கை - சந்தை அறிக்கை - பொருள் - பணிகள் - பண்புகள்.

Books for Reference:

1. ராதா, வணிக கடிதங்கள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2005.
2. ராதா, வணிக கடித தொடர்புகள், பிரசன்னா பப்ளிசர்ஸ், சென்னை, 2006.
3. Dr.K.அன்பழகன் S.இராமர், வணிகக் கடிதத் தொடர்பு - மெரிட் இந்தியா பப்ளிகே'ன்ஸ், மதுரை, 2008.
4. R.S.N. Pillai & Bhagavathi, Commercial Correspondence & Office Management S & Chand Publications, New Delhi, 2009.
5. Prasantha Ghosh, Secretarial Practice & Management, Sultan Chand Publications, New Delhi, 2010.
6. பாவை ஆசிரியர் குழு, வணிக மடலியலும் அலுவலக மேலாண்மையும் - பாவை பதிப்பகம் 2007.

CMC1432 BUSINESS ECONOMICS 4Hrs/4Cr

Objective:

The objective is to familiarize the students with the basic concepts in Economics, study the role of economics in Business and to make the student to understand how the Business Organizations work by applying Economic principles in their Business Management.

UNIT I

Meaning of business economics - Characteristics - Scope - Objectives - Micro and Macro Economics - Objectives of firm. Cardinal approach - Law of Equi-Marginal utility - Ordinal approach - Indifference curve - Consumer's surplus (meaning, limitations)

UNIT II

Demand decision - Determinants of demand - Exemption - Elasticity of demand - Kinds and types - Business uses of elasticity - Demand forecasting - Qualitative and quantitative methods - For new product

UNIT III

Production decision - Production function - The law of variable proportion - Law of returns and returns to scale - Isoquant - Properties - Producer's equilibrium. Cost functions - Long run cost curve - Internal and external economies of scale - Concepts of revenue - Break even analysis.

UNIT IV

Pricing decision – Pricing under perfect competition – Monopoly – Degree of price discrimination – Monopolistic competition, Product differentiation – Selling cost – Oligopoly – Kinked demand curve model. Pricing method – Full cost pricing – Customary pricing.

UNIT V

Macroeconomics – National income based business decision – Trade cycle – Inflation – Causes and consequences – Measures to check inflation.

Reference books:

1. Maheshwari and Varshney , Business Economics, Sultan Chand Publications, New Delhi.2009
2. Shankaran S, Business Economics, Margham Publications, Chennai.2011
3. Mankar G, Business Economics, Vikas Publishing House, Mumbai. 2010
4. Sundaram KPM, Business Economics, Sultan Chand and Sons, New Delhi. 2010

CMC 1434 BANKING THEORY AND PRACTICES 4Hrs/4Cr

Objective:

To train students in the field of banking by teaching the relevant banking theories and practices. The subject deals with the various functions of modern banking systems in India and recent trends in banking such as Automated Teller Machines, Credit Cards, Debit Cards and various e-banking Viz., Internet Banking, Mobile Banking, ECS, RTGS, NEFT etc. The concept of measures against Money Laundering is dealt as well.

UNIT I

Banker and Customer: Introduction and definition of banking. General and special relationship between banker and customer, Banker's lien, Rights of banker especially right to maintain customer's account secrecy and circumstances of revealing. Special types of customers. Functions, features, advantages and disadvantages of Investment banking, Branch banking and Unit banking.

UNIT II

Banking system in India: Functions and role of Commercial banks, Cooperative banks, Regional Rural Banks, Land Development Banks, Lead bank scheme, NABARD, EXIM bank, Nationalisation of banks. RBI: Functions, credit creation, credit contraction and credit control measures (both qualitative and quantitative) and anti-money laundering.

UNIT III

Pass book: Legal significance, favourable and unfavourable entries and their effects. Investment Policies: Principles of sound lending, Bank loans and advances policy, Secured and unsecured advances.

UNIT IV

Cheques: Types of cheques, difference between cheque, bill of exchange and promissory notes. Crossing: General and Special crossing, Material alteration and Endorsement – Meaning and Types (Major types only).

UNIT V

Trends in Banking: Collecting banker: holder for value and holder in due course. Paying

banker: circumstances of dishonour and statutory protection to paying banker. Automated Teller Machines, Credit cards and debit cards: Payment process, differences and advantages and problems in using. E-banking: Internet banking, Mobile banking, SMS banking, ECS, RTGS, NEFT.

Reference Books:

1. Gordon K. And Natrarajan E. 'Banking theory, Law and practice', Himalaya Publishing House, New Delhi, 2011.
2. Davar, 'Banking Law and Practice', S.Chand & Sons, New Delhi, 2003.
3. Vasudevan S., 'Banking Theory, Law and Practice', S.Chand & Sons, New Delhi, 2004.
4. Vasanth Desai, 'Banking Theory, Law and Practice', Himalaya publishing House, New Delhi, 2002.
5. Bhaskaran R. 'Anti-money laundering and Know your customer', Indian Institute of Banking & Finance, Macmillan publishers India Ltd. Mumbai, 2014

CMC K36 FINANCIAL ACCOUNTING II 5Hrs/5Cr

Objective:

The objective of the course is to enable student to develop skill in preparation of accounts for various business organisations. This course deals with the basics of accounting for various organisations such as non-trading concerns, departments and branches.

UNIT I

Accounts of Non-trading Organisation - Receipts and Payments Accounts - Income and Expenditure Accounts - Balance Sheet.

UNIT II

Departmental Accounting - Allocation and Apportionment of Departmental expenses - Inter-departmental transfers at cost price and selling price - Preparation of Final Accounts

UNIT III

Branch Accounts - Dependent Branches - Stock and Debtor System - Final Account System - Independent Branch System - Incorporation of branch Trail balance in Head office books - Consolidated Final Accounts.

UNIT IV

Hire Purchase Accounts - Calculation of Interest - Default and Repossession - Method of Computation of Profit - Instalment Purchase System - Accounting treatment in the books of buyer and vendor.

UNIT V

Royalty Accounts - Minimum Rent - Short workings - Recoupment of short workings - Accounting treatment in the books of lessee and lessor - Effect of strike, lockout and accident - sub lease - Royalty Receivable and Payable - Accounting treatment in the book of lessee.

Reference books:

1. Mukherjee A and Hanif M, Financial Accounting, TATA McGrawHills, New Delhi, 2003
2. Reddy T.S and Murthy A , Advanced Accountancy, Margham Publications, Chennai, 2004
3. Gupta R.L and Radhaswamy , Advanced Accountancy, Sultan Chand and Sons, New Delhi, 2007
4. Jain S.P and Narang K.L, Advanced Accountancy, Kalyani Publishers, New Delhi 2007
5. Arulanandam M.A and Raman K.S, Advanced Accountancy, Himalaya Publishing House, Mumbai 2012 Edition.

CMC 1438

E-COMMERCE

5Hrs/4Cr

Objective:

The course enables the students to understand the basics of E-commerce which is gaining popular in all public and private establishments.

It highlights the features and benefits of E-commerce. Business models of E-commerce are subsequently explained. It also includes the topics like Electronic payment system and Electronic Data Interchange, legal and ethical issues.

UNIT-I

Introduction to electronic commerce:

What is E-commerce(Introduction and definition)- Main activities of E-Commerce-Goals of E-Commerce-Technical components of E-Commerce-Functions of E-Commerce, Adv/Dis-Adv of E-Commerce-Scope of E-Commerce, Electronic Commerce Applications- Electronic Commerce and Electronic Business.

UNIT-II

Internet and Extranet:

Definition of internet-advantages and disadvantages of the Internet-Component of a Internet Information technology structure-Development of a Internet Extranet and Internet Difference-Role of Internet in B2B Application.

UNIT-III

Electronic Data Interchange and Electronic Payment System:

Introduction-Concepts of EDI and Limitation-Application of EDI-Disadvantages of EDI-EDI model-Introduction of Electronic payment system-Types of Electronic Payment System-Payment types-Traditional payments-Value exchange system-Credit card system-Electronic funds transfer-paperless bill-Modern payment cash-Electronic cash.

UNIT-IV

Internet Marketing:

The PROS and CONS of online shopping-The PROS and CONS of online shopping-Justify an internet business-Internet marketing techniques-The E-cycle of internet marketing-Personalisation of E-Commerce.

UNIT-V

E-Governance for India:

E-Governance of India-Indian customer EDI system-Service Centre-Imports-Exports**Reference books:**

1. Turban, Efrain and David King, "Electronic Commerce: A managerial Perspective" Pearson Education Asia, New Delhi, 2003.
2. Rayport, Jeffrey, Jaworksi and J Bernard, "Introduction to E Commerce", Tata McGraw Hill India Ltd., New Delhi, 2002.
3. Rich and Jason, Starting an E Commerce Business, IDG Books, Delhi, 2004
4. Laudon, Kenneth and Traver, E Commerce Business Technology Society, Pearson Education, Delhi, 2004.

CMC 140/BCA ACCOUNTING FOR MANAGERS 5Hrs/4Cr**Objective:**

The objective of this course is to enhance skills on analyzing of financial statements and in decision making and to equip the students with the working knowledge of accounting practices.

UNIT I

Introduction to Management accounting - Difference between management accounting and financial accounting. Fund flow statement – Schedule of Changes in Working Capital – Cash flow statement – Difference between Fund Flow Statement and Cash Flow statement.

UNIT II

Analysis and interpretation of accounting statements: Trend analysis, Common size statements, and Comparative statements, accounting ratios: Important accounting ratios – Trading on equity Capital gearing - Preparation of trading profit and loss account and balance sheet.

UNIT III

Capitalization: Over Capitalization - Causes of over capitalization – Under capitalization – Causes of under Capitalization – consequences of over and under capitalization.

UNIT IV

Concept of Capital Budgeting – Importance – Kinds of Capital investment proposals – Capital Budgeting Appraisal Methods – Capital Rationing.

UNIT V

Working Capital Management – meaning of working capital – Types of Working Capital – Factors Determining Working Capital.

Reference Books:

1. Khan M & Jain Y, Cost and Management accounting, Tata McGraw Hill India Ltd., New Delhi, 2002.
2. Ramachandran & Srinivasan, Management Accounting, Sriram Publications, 2004.
3. Goyal, Manmohan, Management Accounting, Sahitya Bhawan, Agra, 2003.
4. Pandey, I.M, Management Accounting, Vikas Publishing House, 2004

CMC 13	PRINCIPLES OF INVESTMENT	3Hrs/2Cr
--------	--------------------------	----------

Objective:

The objective of the course is to gain comprehensive knowledge of security market. It includes the investment avenues, returns and risk and securities market. It also further includes the listing of securities and security dealings and government.

UNIT I

Investment: Meaning of investment – definition of investment – nature of investment – need of investment – investment environment – scope of investment – speculation, gambling – investment principles – investment process.

UNIT II

Investment avenues: features of equity shares, preference shares and its types – bonds and its various types – features – innovative financial instruments – convertible debentures and warrants – characteristics – zero coupon – bonds – deep discount bond – secured premium notes – post office saving schemes – LIC policies – mutual funds.

UNIT III

Securities market: New issue market – Organisation structure of New Issue Market (NIM) – functions of NIM – Mechanics of floating new issue – Secondary Market – definition of Stock exchange – function of stock exchange market – Organisation of stock exchanges in India.

UNIT IV

Mechanics of security trading in stock exchange – stock market indices – NSE index – BSE index

UNIT V

Listing of securities: scope – objectives of listing – advantages of listing – disadvantages of listing – Security dealings and government: securities contracts (Regulation) Act 1956 – Securities and Exchange Board of India (SEBI)

Reference Books:

1. Dr. Preethi Singh, Investment management, Himalaya Publishing House, New Delhi, 2003.
2. Fischer and Jordan, Security Analysis and Portfolio Management – Prentice Hall India Ltd., New Delhi, 2002.
3. Alexander and Bailey, Investments – Prentice Hall of India Ltd., New Delhi, 2004
4. Avadani, Investment Management, Himalaya Publishing House, 2003

CMC 14	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	3Hrs/2Cr
--------	---------------------------------------	----------

Objective:

To give students an understanding of the problems and issues within the field, required reasoning and analysis and learn the critical elements of the logistics and supply chain process.

UNIT I

Logistics management: Origin and Definition – Types of logistics - logistics management – warehouse management – automation & outsourcing – customer service and logistics management - physical distribution and inventory – concepts.

UNIT II

Types of inventory control – Demand forecasting – warehousing and stores management – routing – transportation management – commercial aspects in distribution management – codification – distribution channel management – Distribution Resource Planning (DRP).

UNIT III

Supply chain management: Introduction and development – Nature and concept – importance of supply chain – value chain – components of supply chain – global applications.

UNIT IV

Role of manager in supply chain – supply chain performance drivers – key enablers in supply chain improvement – systems and values of supply chain.

UNIT V

Aligning the supply chain with business strategies – SCOR model – outsourcing and 3 PLs – Fourth party logistics – Bull-whip effect and supply chain – supply chain relationships – conflicts, resolution strategies – certifications.

Reference Book:

1. G Raghuram & N Rangaraj, Logistics and Supply Chain Management - Cases and Concepts. Mac Millan.
2. Martin Christopher, Logistics & Supply Chain Management: Creating Value-Adding Networks, FT Press.
3. Janat Shah, Supply Chain Management: Text and Cases, 1st Edition, Pearson.
4. D K Agrawal, Textbook of Logistics and Supply Chain Management, MacMillan 2003, 1st edition

அனுவலக முறைகள்

செயல்பாடுகள்

நோக்கம்:

நவீன அனுவலகத்தின் அமைப்பு முறைகள், செயல்பாடுகள், அன்றாட நடவடிக்கைகளை விளக்குதல், அனுவலகத்தின் வளமைகளை முறைப்படிப் பயன்படுத்தி, அதிகாரப் பரிதலைச் சரியாகக் கையாளுதலின் மூலம் பணித்தளத்தை எங்ஙனம் எளிதாக்குதல் மற்றும் தகவல் தொடர்புச் சார்ந்த பதிவேடுகளை முறையாகக் கையாளுதல் போன்றவற்றை விளக்குவதே இப்பாடத்தின் நோக்கமாகும்.

அலகு-அ:

அனுவலக மேலாண்மை - இலக்கணம் - நவீன அனுவலகத்தின் அமைப்பு முறைகள் நவீன அனுவலகத்தின் இலக்கணம் செயல்பாடுகள் மற்றும் முக்கியத்துவம் மேலாண்மை மற்றும் அமைப்பு-அனுவலக முறை மற்றும் அன்றாட நடவடிக்கைகள்

அலகு-ஆ:

பணிபெற்று ஒப்படைப்புசெயல்முறைகள் - அதிகாரத்தை பரவலாக்குதல் - அனுவலக வளமை கைகள் - வளமைகளைத் தயாரித்தல் - பயன்படுத்துதல் மற்றும் மதிப்பீடுதல்

அலகு-இ

அலுவலக இடவசதி, அலுவலகமனைத் துணைப் பொருட்கள் மற்றும் அமைப்புத் திட்டம் - பணிக்கேற்றநூற்றிலை, பணியை எளிதாக்குதல்

அலகு-ச:

அஞ்சலகமுறை கடிதப் போக்குவரத்து மற்றும் பதிவேடுகளை பராமரித்தல், தபால்களை கையாளுதல் - அஞ்சல் துறையை அமைத்தல்- மையப்படுத்தப்பட்ட அஞ்சல் பணி உள்ளவரும் மற்றும் வெளித்தொடர்பு - வாய்மொழித் தகவல் தொடர்பு மற்றும் எழுத்து மூலம் தகவல் தொடர்புபதிவேடுகளை உருவாக்குதல் - எழுத்துப் பணிகள் - அலுவலக அறைகள் - படிவக் கட்டுப்பாடு-வடிவமைப்பு-தொடர்புஎழுதுபொருள்.

அலகு-உ

கோப்பிலிருந்து: நல்லகோப்பீட்டுமுறையின் முக்கிய அம்சங்கள் - வகைப்படுத்துதல் மற்றும் விசைப்படுத்துதல் - கோப்பீட்டுமுறைகள் - மையக் கோப்பீட்டுமுறைமற்றும் பரவலாக்கப்பட்டகோப்பீட்டுமுறைசட்டகராதியின் பல்வேறு வகைகள்.

Books for Reference:

1. அலுவலக முறைகள் - எஸ்.எம். சுந்தரம் ஸ்ரீமீனாட்சி பப்ளிகே'ன்ஸ், காரைக்குடி
2. Commercial Correspondence & Office Management - R.S.N Pillai & Bhagavathi, S & Chand Publications, New Delhi
3. Secretarial Practice & Management - Prasantha Ghosh - Sultan Chand Publications, New Delhi
4. வணிக மடலியலும் அலுவலக மேலாண்மையும் - பாவை ஆசிரியர் குழு பாவை பதிப்பகம்
5. அலுவலக முறைகள் - ஐ.ச.மு.அன்பழகன் ஐ.இராமர் மெரிட் இந்தியா பப்ளிகே'ன்ஸ், மதுரை-1.

CMC-2631	PARTNERSHIP ACCOUNTING	6Hrs/6Cr
----------	------------------------	----------

Objective:

To provide detailed insight in to specialized accounting and their applications to complex business situations and to gain comprehensive understanding of all aspects relating to partnership accounting

UNIT I

Partnership -Meaning-Features- Kinds of partners- Introduction to Limited Liability Partnership Act, 2008 -Partnership Deed- Capital Account: Fixed and Fluctuating Appropriation of Profit & Loss -Guarantee - Past Adjustments - Accounting Standard 10.

UNIT II

Admission of Partner-New Profit sharing ratio-Treatment and Valuation of Goodwill- Revaluation of Assets and liabilities- Memorandum revaluation -Capital adjustments

UNIT III

Retirement of a Partner-Loan account -Death of a Partner-Executors Accounts -Admission cum Retirement.

UNIT IV

Dissolution of Firms-Types - Normal Dissolution -Insolvency of Firm - Garner Vs Murray decision - Deficiency Account -Piece meal distribution.

UNIT V

Amalgamation of firms-Meaning - Accounting entries -Preparation of Balance sheet. Sale to a company-Meaning- Accounting entries - Balance Sheet – Accounting Standard 14.

Reference Books:

1. Jain&Narang, Advanced Accountancy, Kalyani Publications, Kolkatta, 2012
2. R.L. Gupta and M. Radhaswamy, "Advanced Accountancy", Revised 14th Edition, Sultan Chand & Sons, New Delhi, (2012).
3. Mukerjee and Hanif, Advanced Accountancy, Volume I &II, Tata McGraw Hills, New Delhi, 2009
4. Iyengar. S.P, Advanced Accounting, Sultan Chand &Sons, New Delhi.2009
5. Paul S Kr, Fundamentals of Accounting, Central Publishing House, Kolkatta, 2002
6. Shukla M C, Grewal T S, Gupta S C, Advanced Accounts, S. Chand and Company Ltd, New Delhi, 2003

CMC 2533	BUSINESS LAW	5HF/5C
----------	---------------------	--------

Objective:

To equip the students with the theoretical knowledge of Laws governing business

UNIT I

Evolution of mercantile law – contract – definition – kinds – essential elements – offer and acceptance – consideration – capacity – consent – mistake - Unlawful agreement and illegal agreement – agreements opposed to public policy – contingent contracts – performance of contracts – discharge of contracts – kinds – remedies for breach of contracts – quasi contracts.

UNIT II

Indemnity and Guarantee - Rights of Indemnity holder – Difference between Indemnity and Guarantee – Rights of Surety – Discharge of Surety.

UNIT III

Industrial disputes Act- settlement mechanisms- types of disputes- offences and penalties- health, safety and welfare measures of workers under Factories Act

UNIT IV

Information Technology Act, 2000- scope, nature, applications in business to business- business to customer

UNIT V

Right to Information Act-Information- concepts in relation to business world

Reference books:

1. Business Laws, N.D.Kapoor, Sultan Chand & Sons, New Delhi,2013
2. Indian Business Laws, Agarwal, Galgotra Publications,2006.
3. Economic Laws 2014, Taxmann Publications, New Delhi, 2014 Dr.Tuteja S.K, Business Law for managers, Sultan Chand & Sons, New Delhi, 2006.
4. KapoorG.K, Lectures on Business & Corporate Laws, Sultan Chand & Sons, New Delhi, 2005.
5. Kuchhal M C, Mercantile Law, Vikas Publishing House Pvt.Ltd., New Delhi, 2004.

6. Praveen, Suggested Answers in Mercantile Law, Sultan Chand & Sons, New Delhi, 2005.

CMC 2435 RELATIONAL DATABASE MANAGEMENT (T.T.E) 3Hrs/4Cr

Objective:

To enable students, to understand the concept of data base management and to handle relational aspects

UNIT I

The concept of data base management system; Data field, records and files, Sorting and indexing data; Searching records designing queries, and reports; Linking of data files; Understanding programming environment in DBMS; Developing menu driven applications in query language (MS-Access),

UNIT II

RDBMS – introduction – Organisation – Access Environment – SQL, Designing a Database – structuring a RDBMS – understanding table components – creating tables – changing table structures – manipulating data.

UNIT III

Querying the database – querying single table – ordering results – grouping results – sub queries – Multi Table - join – conjunction clauses – defining and using views – one table views – complex – manipulating – dropping views

UNIT IV

Introduction to SQL – database types and their usages – Data types – Scalar – Composite – LOB and user defined data types – exception – Cursor – Static, Explicit and Implicit cursor – cursor for loop

UNIT V

Sub Programs – procedures – functions – packages – the package specification – package body cursor in packages – database triggers – types of triggers – Built-in packages – DBMS STANDARD, DBMS OUTPUT, DBMS LOB.

Reference Books:

1. David M.Kroenke, Database Processing, SE, Galgotia Publication, New Delhi 1990.
2. Kevin Loney, George Koch, Oracle 8i The Complete Reference, Tata Mc-Graw Hills Pvt. Ltd, New Delhi 2000.
3. Henry F korth and Abraham SilberSchatz, Data base Management System, Tata Mcgraw Hill,2000
4. C.J.Date, Introduction database system, Narosha Publishing House, New Delhi, 2002.

CMC 2437 VISUAL BASIC (T.T.E) 3Hrs/4Cr

Objective:

The main aim of the course is to introduce the students, the basic of visual programming using Visual Basic. The course deals with GUI concepts, various Controls, Menus, Dialog boxes and creating of active X Controls in Visual Basic.

UNIT I

Introduction to Visual Basic:

Features of Visual Basic -The Visual Basic Philosophy -The integrated development environment -The anatomy of Form -Project Types

UNIT II

Dealing With Data:

Operators-Variables -Declaring Variables -Types of Variables -Data types -Constants

Arrays -Declaring Arrays -Specifying Arrays -Multidimensional Arrays -Dynamic Arrays - Arrays of Arrays

UNIT III

Writing Code:

Collections -Procedures -Subroutines -Functions -Calling Procedures -Object Browser - Creating Classes & Object -I/O Statements -Control Flow Statements -If—Then -If-then-else -Nested Control Statements -Select-Case Loop Statements -Do—Loop -For—Next -While-Wend -Exit Statement

UNIT IV

Creating an Application Using Controls:

What is on the toolbar -Textbox Control -Picture Box -Image Box -Label Box -Frame -List Box -Option Button -Combo Box -Command Button -Check Box -The Drive, Directory, File List Controls -The Line & Shape Control -Scroll Box -Data -Timer

UNIT V

Multiple Document Interface & Menus:

Why MDI Forms -Features of an MDI forms -Loading MDI forms & child forms -Creating an simple MDI forms -Accessing MDI forms -Creating MENUS -POP-UP MENUS - DATA Access Controls: JET database Engine -ADODC -DAO Data Control -ODBC Data Source Administrator -DATA REPORT

Reference Books:

1. Michael Halvorson, Microsoft Visual Basic 6.0 Profession Step by Step, Microsoft Press, II Edition 2006
2. Cornell G " Visual Basic 6.0 from the ground up", Tata Mc Graw Hill,2004
3. Koop, Prince, Anne, Marach, Joel, Visual Basic 6.0, BPB Publications, Reprint 2001
4. Peter Wrights, Beginning VB 6.0, Shroff Publishers and Distributors Pvt Ltd. 2001

CMC 2439

BUSINESS STATISTICS

5Hrs/4Cr

Objective:

The purpose of this paper is to introduce the students to the basic concepts of Statistics which are relevant for the students of commerce and analytical ability among the students.

UNIT I

Meaning, Scope, Importance and Limitations of Statistics, Statistically Investigation: Planning of statistical investigation, census and sampling methods Collection of Collection of

primary and secondary data, Statistical errors and approximation, classification and Tabulation of data, Frequency distribution.

UNIT II

Statistical Average: Arithmetic, geometric and Harmonic means, Mode Median, Qualities and percentiles, Simple and weighted averages. Uses and Limitations of different averages.

UNIT III

Dispersion and Skewness: Range, Quartile deviation, mean Deviation and their coefficients, standards deviation, coefficient of variation, Skewness and its coefficients.

UNIT IV

Correlation: Karl person's coefficient of correlation, Probable Error and interpretation of coefficient of correlation, Rank Difference Method and Concurrent Deviation method. Linear Regression.

UNIT V

Index Numbers: Utility of index numbers. Problems in the construction of index numbers, simple and weighted index number, Base shifting fishers ideal index number and tests of Reversibility.

Reference Books:

1. D.N. Elhance, Fundamentals of Statistics, New Century Book House, 2011
2. S.P. Gupta, Fundamentals of Statistics, Sultan Chand Publishers, New Delhi, 2007
3. S C Gupta, V K Kapoor, Mathematical Statistics, Sultan Chand & Sons, 2001
4. S P Gupta, Statistical methods, Sultan Chand & Sons, 2001
5. S Arumugam, & A Thangapandian Isaac, Statistics, New Gamma Publication House, 2004

கல்வியும் - கலைகளும் - கலைகளும் - கலைகளும் - கலைகளும்

நோக்கம்:

காப்பீட்டு இலக்கணம், வகைகள், கொள்கைகள் மற்றும் இடப்பாடுகள், இன்னல்கள் போன்றவற்றையும், காப்பீட்டின் முக்கிய அம்சங்களான முனைமம் கணக்கிடுதல், இழப்பீடு வழங்குதல் போன்றவற்றை விளக்குதல் இப்பாடத்தின் நோக்கமாகும்.

அலகு:1

காப்பீடு - தொடக்கப் பின்னணி - பொருள் - இலக்கணம் - கோட்பாடுகள் - முக்கிய வழி கூறுகள் - பணிகள் - காப்பீட்டின் முக்கியத்துவமும் பங்களிப்பும் - காப்பீட்டின் வகைகள் - இரட்டைக் காப்பீடு - மறு காப்பீடு.

அலகு:2

ஆயுள் காப்பீடு - பொருள் - கோட்பாடுகள் - ஆயுள் காப்பீடு பத்திர வகைகள் - ஆயுள் காப்பீடு செய்வதற்கான வழிமுறைகள் - முனைமம் செலுத்துதல் - சலுகை நாட்கள். பிரதி நியமனம் - ஒப்படைப்பு - தவறிய பத்திரம் - இழப்பு காப்பீட்டுத் தொகை வழங்குதல் - முகவர் அறிக்கை - பத்திரம் உரிமை இழப்பு - பத்திரம் உரிமை மீட்பு - சரண் மதிப்பு - காப்பீட்டுப் பத்திரத்தின் மூலம் கூன் பெறுதல். இந்திய ஆயுள் காப்பீட்டுக் கழகம் - தொடக்கம் - நோக்கங்கள்.

அலகு:3

கடல் காப்பீடு: பொருள் - பிரிவுகள் - கடல்சார் காப்பீட்டின் பத்திர வகைகள் - கடல்சார் தட்டத்தின் வகைகள் - இழப்பீட்டுத் தொகை வழங்குதல்.

அலகு:4

தீ காப்பீடு: பொருள் - பல வகையான காப்பீட்டுப் பத்திரங்கள் - ஒப்பந்தத்தின் நிபந்தனைகள் - இழப்பீட்டுத் தொகை வழங்குதல்.

அலகு:5

காப்பீட்டு முறைப்படுத்தல் மற்றும் வளர்ச்சிக்கான அதிகார சட்டம் 1999 அறிமுகம் - நோக்கங்கள் - ஐசுஐயு சட்டத்தின் சரத்துகள், அதிகாரங்கள் மற்றும் பணிகள். காப்பீடு தனியார் மயமாக்குதல் - ஆதரவும் எதிர்ப்பும் - தனியார் மயமாக்குதலின் தற்போதைய நிலை.

பரிந்துரைக்கப்படும் புத்தகங்கள்:

1. காப்பீடு கோட்பாடுகளும் நெறிமுறைகளும் - முனைவர் L.P.இராமலிங்கம், பேராசிரியர் T.S.ஜெயக்குமார், முனைவர் M.செல்வக்குமார், மெரிட் இந்தியா பப்ளிகேஷன்ஸ், மதுரை 2009.
2. Mishra M.N, Modern Concepts of Insurance, S.Chand and Co., Ltd., New Delhi, 2009.
3. Alka Singh, Insurance and Risk Management, Sultan Chand & Sons, New Delhi, 2010.
4. Mittal M.N, Insurance and Risk Management, Vikas Publishers, Mumbai, 2010.

CMC 2632 CORPORATE ACCOUNTING 6Hrs/6Cr

Objective:

The objective of this course is to give comprehensive understanding of all aspects relating to corporate accounting and to lay a theoretical foundation for the preparation and presentation of financial statements.

UNIT I

Types of companies – Share capital – Types of shares – Issues, Forfeiture and reissue of shares – Issue and Redemption of Debentures and Preference shares

UNIT II

Profits prior to Incorporation – Underwriting of Shares and rights issues – acquisition of Business by a Company

UNIT III

Final Accounts of Companies – Preparation and presentation of final accounts of companies – bonus and dividend to shareholders – managerial remuneration – acquisition of business – pre-incorporation profits/loss.

UNIT IV

Amalgamations, Absorption and External Reconstruction – purchase consideration – types of amalgamation – pooling of Interest method – purchase method – treatment of realisation expenses.

UNIT V

Internal Reconstruction – types of reconstruction – reduction of share capital – reduction of liabilities – reduction of assets and disposal of balance of reconstruction account – scheme of reconstruction. Liquidation – liquidator's final statement of accounts – Accounting standards – International Financial Reporting System – concepts

Reference Books:

1. Jain & Narang, Advanced Accountancy, Kalyani Publishers, New Delhi, 2004
2. Iyengar SP, Advanced Accounting, Sultan Chand & Sons, New Delhi, 2003.
3. Paul S Kr, Fundamentals of Accounting, Central Publishing House, Calcutta, 2002.
4. Mukerjee & Hanif, Advanced Accountancy, Tata McGraw Hills, New Delhi, 2003.

CORPORATE LAW**5Hrs/5Cr****Objective:**

This course gives orientation to the students in Companies Act 1956 and corporate proceedings with 2013 amendments.

UNIT I

Company – meaning- types of companies- nature- doctrine of incorporation & commencement of business- lifting of corporate veil- Memorandum of Association and its alteration – Doctrine of Ultra Vires – Articles of Association and its alteration – Doctrines of constructive notice and indoor management - Prospectus – Contents – Rules – Misstatements – liability

UNIT II

Membership in companies – Kinds – Rights and Liabilities – Shares – kinds – Application and allotment of shares - Transfer and Transmission of shares – Share certificate and Share Warrant.

UNIT III

Conduct of meetings- types- appointments-liquidation of companies- provisions as regards alteration of capital.

UNIT IV

Securitisation Act, 2002- NPA and disclosures- NPA management- in banks and insurance- Banking Regulation Act, 1949

UNIT V

Indian Patents Act, 1999- process of obtaining patents- patentable products- Offences- penalties.

Reference books:

1. Dr.Tuteja S.K, Business Law for managers, Sultan Chand & Sons, New Delhi, 2006.
2. KapoorG.K, Lectures on Business & Corporate Laws, Sultan Chand & Sons, New Delhi, 2005.
3. Kuchhal M C, Mercantile Law, Vikas Publishing House Pvt.Ltd., New Delhi, 2004.
4. Praveen, Suggested Answers in Mercantile Law, Sultan Chand & Sons, New Delhi, 2005.

Objective:

The objective of the course is to introduce the programming technique and enable the students to develop the programming skill using C. This course constructs, file handling, pointers command line arguments.

UNIT I Overview of C:

History of C – Importance of C – Basic structure of C – Programming style – Constants, variables and Data types – declaration of variables, storage class – defining symbolic constants – declaring a variable as constant, volatile – overflow and underflow of data. Operators and expressions: arithmetic, relational, logical, assignment operators – increment and decrement operators, conditional operators, bitwise operators, special operators – arithmetic expression – evaluation of expressions – precedence of arithmetic operators – type conversions in expression – operator precedence and associability – mathematical functions – managing I/O operations: reading and writing a character – formatted input, output.

UNIT II Decision making and branching:

if statement, if.... else statement – nesting of if else statement – Else if Ladder – Switch statement – the ?: operator – goto statement. -The While statement – do statement – The for statement – jumps in loops

UNIT III Arrays:

One dimensional array – declaration, initialisation – two dimensional array – multi dimensional array – dynamic arrays – initialisation. Strings: declaration, initialisation of string variables – reading and writing string – arithmetic operations on strings – putting strings together – comparison – string handling function – table of strings – features of string.

UNIT IV User defined functions:

Need – multi function program – elements of user defined function – definition – return values and their types – function calls, declaration, category – all types of arguments and return values – nesting of functions – recursion – passing arrays, strings to functions – scope visibility and life time of variables – multi file programs. Structures and unions: defining a structure – declaring structure variables – accessing structure members – initialisation – copying and comparing – operations on individual members – arrays of structures – arrays within structures – structures within structures – structures and functions – Unions – size of structures – bit fields.

UNIT V Pointers:

Accessing the address of a variable – declaring, initialisation of pointer variables – accessing a variable through its pointer – chain of pointers – pointer expressions – pointer increment and scale factors – pointers and arrays – pointers and character strings – array of pointers – pointers as function arguments – function returning pointers – pointers to functions – pointers and structures. Files: defining, opening, closing a file. I/O operations on files – error handling during I/O operations – random access to file – command line arguments.

Reference Books:

1. Programming with C (Schaum's Outline Series), Gottfried, Tata McGraw Hill, 2006.

2. E. Balagurusamy, "Programming in ANSI C", Edition 3, Tata McGraw Hill Publishing Company, 2005.
3. Pandiaraja P, Programming in C, Vijay Nicole imprints Pvt. Ltd. 2005
4. Gotterfied B S, Programming in C, Schaum's outline series, 2nd Edition, Tata McGraw Hill, 2006

CMC 2438

MULTIMEDIA (I+II)

3Hrs/4Cr

Objective:

The aim of the course is to explore how Multimedia components are represented handled effectively by various technologies and also to implements the Multimedia concepts through flash, MX and director Shock wave studio.

UNIT I Introduction to Multimedia:

Context and copyright-resources for multimedia developers -types of products – evaluation - computer architecture standards - operating systems and software-multimedia computer architecture. Elements of text-text data files-using text in multimedia applications - hypertext - graphics - elements of graphics-images and color-graphics file and applications formats-obtaining images for multimedia use-using graphics in multimedia applications.

UNIT II Digital audio:

Characteristics of sound and digital audio-digital audio systems - MIDI audio file formats-using audio in multimedia applications.

UNIT III Introduction to Photoshop:

Working with Photoshop – Processing the image using Photoshop techniques. Animation: Introduction - How flash works - Flash tool box – creating objects – drawing characters for cartooning editing objects – Colours and text- symbols and instances – bitmaps.

UNIT IV In flex:

Setting up the environment –Using Design mode and Source mode –Adding Interactivity – Using Data Binding –Layout –Creating Rich Forms.

UNIT V Adobe air:

Introduction – Applications, Windows, Menus –File System Integration – Using Local databases –HTML in AIR.

Reference Books

1. Rich Shupe and Zevan Rosser, "*Learning ActionScript 3.0: A Beginner's Guide*", Adobe Developer Library.
2. Halsal, fredl., -Multimedia communications-Pearson education pvt ltd-2003.
3. Chafic Kazoun and Joey Lott, "*Programming Flex 3*", Adobe Developer Library.
4. Alaric Cole, "*Learning Flex 3*", Adobe Developer Library
5. Paul Wilton and Jeremy McPeak, "*Beginning JavaScript, 3rd Edition*", Wrox Press Inc., 2007.
6. Mercer, Kent, Nowicki, Squier and Choi, "*Beginning PHP5*", John Wiley & Sons, Inc., 2004.
7. Michael Labriola, "*Breaking out of Web Browser With Adobe AIR*", Prentice Hall, Inc., 2009.

8. Joseph Lott, Kathryn Rotondo, Sam Ahn and Ashley Atkins, "Adobe AIR in Action", Manning Publications Co, 2009.

CMC-2440 BUSINESS MATHEMATICS 5Hrs/4Cr

Objective:

The aim of this course is to introduce the students to basic concepts of mathematics which are relevant for students of humanities and arts and to enable the students to formulate the physical problems using mathematical concepts and solving them by using set theory and probability.

UNIT I

Set theory – basic operations, universe of sets, functions, Venn diagrams

UNIT II

Index numbers - meaning, types & uses, methods of constructing price and quantity indices - Fishers Ideal Index Number, Tests of adequacy, Chain-base Index numbers, Base shifting, consumer price index

UNIT III

Analysis of Time series - Causes of variation, components of a time series, Decomposition - additive & multiplicative models, determination of trend - Moving averages, least squares (Linear, Parabolic & Exponential trend), Seasonal Indices - simple averages - ratio to trend, link relative methods

UNIT IV

Theory of Probability - concepts, addition & multiplication laws of probability, conditional probability, Baye's Theorem, Binomial expansion

UNIT V

Theoretical distribution - Binomial, Poisson and Normal Distributions, Test of significance - Chi-square test, T-tests, z- test, F-test & ANOVA

Reference books:

1. S C Gupta, V K Kapoor, Mathematical Statistics, Sultan Chand & Sons, 2001
2. Statistical methods, S P Gupta, Sultan Chand & Sons, 2001
3. S Arumugam, & A Thangapandian Isaac, Statistics, New Gamma Publication House, 2004
4. Sanchetti Kapoor, Business Mathematics, Sultan Chand & Sons, New Delhi 2009

CMC-3631 HIGHER ACCOUNTING 6Hrs/6Cr

Objective:

This course equips the students with various accounting procedures relevant to specific business establishments such as Insurance, Banking, Railways, Electricity and Hotels.

UNIT I

Accounting of banking companies:

Forms of Business in which Banking companies may engage – Slip system of posting – Final accounts of banking companies (as per Banking Regulation Act 1949)

UNIT II

Accounting of Insurance Companies:

Accounts of Life Insurance business- General Insurance business-Final accounts , Revenue accounts, Balance sheet(as per IRDA regulations 2000)

UNIT III

Accounting of Holding companies:

Definitions – consolidated balance sheet – Elimination of common transactions – Treatment of Fictitious assets – Unrealised profits, contingent liabilities – Dividend, debentures – Disposal or Additional acquisition of shares in subsidiary company – Revaluation of assets.

UNIT IV

Double Account system:

Meaning – Difference between double account system and single account system – Accounts of Railways – Accounts of Electricity supply companies.

UNIT V

Accounting for Service Sectors:

Revenue Recognition (AS-9)-Construction Companies (AS 7)-Project Accounting-Service sectors such as Software, ITES, Telecommunication, Entertainment, Hospital, Educational Institutions, Hotel

Reference Books:

1. Jain&Narang, Advanced Accountancy, Kalyani Publications, Kolkatta, 2012
2. R.L. Gupta and M. Radhaswamy, "Advanced Accountancy", Revised 14th Edition, Sultan Chand & Sons, New Delhi, (2012).
3. Mukerjee and Hanif, Advanced Accountancy, Volume I &II, Tata McGraw Hills, New Delhi, 2009
4. Iyengar. S.P, Advanced Accounting, Sultan Chand & Sons, New Delhi.2009
5. Shukla M C, Grewal T S, Gupta S C, Advanced Accounts, S. Chand and Company Ltd, New Delhi, 2003

CMC 3633 MARKETING RESEARCH 6HS/6CP

Objective:

The objective of this course is to impart fundamentals of marketing research and to equip the students to analyse various marketing problems and to take marketing decisions. This course deals with uses of marketing research, marketing research methods, process and preparation of report.

Unit I

Introduction - Scope – Importance – Uses and Limitations of Marketing Research – Marketing Research Agencies: Functions – Organisation Structure – Merits and Demerits of Marketing Research Agencies.

Unit II

Marketing Research Process - Development of marketing research - Marketing research methods: Exploratory – Descriptive – Experimental – Research Designs.

Unit III

Application of sampling methods – Basic methods of collecting data – Classification and tabulation – Data preparation and processing – Validation – Editing – Coding – Data Processing methods.

Unit IV

Data Analysis and interpretation – Nature and functions of Statistical analysis – inter-relationship between analysis and interpretation

Unit V

Research Presentation and research process – Report Writing – Marketing Information Systems - Ethical issues in marketing research.

Reference books:

1. Harper W Boyd, Ralph L Westfall and Stanley F Stasch, Marketing Research Text and Cases.
2. David J Luck, Ronald S Rubin, Marketing Research - Prentice Hall of India Pvt Ltd. New Delhi.
3. Sharma D D, Marketing Research Principles, Applications and cases – Sultan Chand and Sons, New Delhi.
4. Philip Kotler, Marketing Management - Prentice Hall of India Pvt Ltd. New Delhi.

CMC 3635	WEBTECHNOLOGY (T.E)	6Hrs/6Cr
----------	----------------------------	----------

Objective:

This course deals with web page designing. It contains HTML, JAVA scripts, Dream weaver, after completing this course the student will be able to design their web pages and place them in the web.

UNIT I

Introduction to HTML:

Basic formatting tags: heading, paragraph, underline, break, bold, italic, superscript, subscript, font and image – Different attributes like align, color, bgcolor, font face, border, size – Navigation Links using anchor tag – internal, external, mail and image links – Lists: ordered, unordered and definition – Table tag, HTML Form controls: form, text, password, text area, button, check box, radio button, select box, hidden controls, Frameset and frames.

UNIT II

JavaScript:

Introduction – Client side programming, script tag, comment, variables – Document methods: write and write in methods, alert – Operators: Arithmetic, Assignment, Relational, Logical, Javascript – Functions, conditional statements, Loops, break and continue. Events Familiarization: onLoad, onClick, onBlur, onSubmit, onChange.

UNIT III

Introduction to PHP:

Server side scripting – Role of web server software – Including files, comments – Variables and scope, echo and print. Operators: Logical - comparison and conditional operators – Branching statements, Loops, break and continue, PHP functions.

UNIT IV

Working with PHP:

Passing information between pages – HTTP GET and POST method – String functions: strlen, strpos, strstr, strcmp, substr, str_replace, string case, Array constructs: array (), list (), and foreach ().

UNIT V

PHP advanced functions:

Header, Session, Cookie Object Oriented Programming using PHP – Class, object, constructor, destructor and inheritance – PHP & MySQL commands.

Reference Books

1. "Macromedia Dream waver Web Development", New Rider Publishing, New Delhi, 2003.
2. Microsoft MS Front Page Manuel, 2003.
3. "Macromedia Dream waver – The complete reference" Tata McGraw Hill New Delhi, 2004.
4. C.Rates "Web programming building internet applications" Wiley Dread Tech, Mumbai, I edition, 2002.

CMC353	SOFTWARE ENGINEERING	5Hrs/5Cr
--------	----------------------	----------

Objective:

The aim of the course is to train the students to analyze, estimate and design new software with quality standards. In this paper, basic concepts in Software engineering, software processes, various software engineering paradigms, Requirements Engineering various analysis and design strategies are incorporated, Software testing methods and quality maintenance strategies are included.

UNIT-I

Software Characteristics – Introduction to Software Engineering – Factors Influencing quality and productivity – Software Process – CMM – PSP – TSP – Software Engineering Models – Cost Estimation – Feasibility Analysis – Software Project Management

UNIT-II

System Engineering – Requirement Engineering – Requirements Documentation – Requirement Elicitation – Requirement Analysis and Negotiation – Requirement validation – Requirement Management

UNIT-III

System Analysis – Information Flow Analysis – DSSD – OOA – Use Case Modelling – Class Modelling – Design Engineering – Creating Architectural Design – Modelling Component level design – User Interface design – Transform and Transaction Analysis – OOD

UNIT-IV

Introduction - UML - Goals - Types of UML diagrams – Object Class diagram - Object diagram - Use case diagram - Sequence diagram - Collaboration diagram - Activity diagram - State chart diagram - Deployment diagram - Component diagram.

UNIT-V

Testing principles- Testing strategies – Unit testing – Integration testing – White Box Test - Black Box Testing – OOTM – Domain Testing – Implementation – Software Maintenance – Issues in Maintenance – Software Quality and Quality Assurance .

References:

1. Roger S. Pressmen, "Software Engineering A Practioners Approach" McGraw – Hill, 2005
2. Ian SommerVile, "Requirements Engineering", JohnWiley, 1998.
3. Stephen. R. Schach, "Object Oriented and classical software Engineering" TMH.2003
4. Watts S. Humphrey, "A Discipline for Software Engineering", Pearson Education, 2001
5. Boriz Beizer, "Software Testing Techniques", Dream Tech, 2000
6. Jason, "UML-A Beginners Guide", Tata McGraw Hill,2003.

CMC@3209	EVENT MANAGEMENT	3Hrs/2Cr.
----------	-------------------------	-----------

Objective:

The essential of the subject is to understand the market, Preparing for event, Promotion of events and to give an in depth knowledge in organising an event.

UNIT-I

Event management: Definition - meaning - understand event - types of event, reason and need for events, role of event Management Company. Introduction to planning - Meaning & Definition planning - Characteristics of Good planner - SWOT Analysis - Five w's

UNIT-II

Event Process -Meaning, Need, and Benefits of a process - steps for creating process, planning an event - Determining the purpose of an event - Types of events for a business, Goals of an event - Understanding event's audience.

UNIT-III

Event for amping up marketing and sales- events to start or enhance awareness - Events to increase productivity - crossover events - identifying the scope and size of the event - social versus business aspects – outlining the need - setting up of an event vision - assessment of information - designing objectives for events.

UNIT-IV

Event planning process - creation of concept - brain storming for concept, creativity, budgeting of event - the budget's purpose - budget line items and other costs to consider - angling for income - drafting a budget - activating a budget - keeping a budget on track - The master plan - creation of blue print, event calendar, creation of check list, event flow, time frames and deadlines.

UNIT-V

Staffing and vendors - logistic and staging - Sponsorship - breaking down the event, outsourcing strategies - working with vendors - negotiating - accountability and responsibility.

Reference books:

1. Cindy lemaire, Mardi foster and walker, Start and run and business, self-counsel press, 2004,
2. Cherly Kimball, Start your own event planning business 3/E: your step-by-step guide to success, Entrepreneur press publication , 2011
3. Event Planning Ethics and Etiquette-Publisher: john wiley & son, publication

CMC-3632	FINANCIAL MANAGEMENT AND CONTROL	6Hrs/6Cr
----------	---	----------

Objective:

To understand the objective of financing and enable the students to equip themselves in taking managerial decisions based on the principles of financing.

UNIT I

Introduction- goals of firms- traditional and modern approach- functions of finance manager-

UNIT II

Cost of Capital- components- types- computation of cost of debt, equity, preference shares, retained earnings

UNIT III

Capital structure- theories and importance of theories- application of theoretical concepts

UNIT IV

Dividend decisions - relevance and irrelevance approaches

UNIT V

Cash management, receivables management and inventory management

Reference books:

1. Financial Management, S.N. Maheswari, Sultan Chand & Sons, New Delhi, 2009
2. Financial Management, Khan and Jain, Tata Mc Graw Hill Publications, New Delhi, 2008
3. Financial Management, Vohra, Prentice Hall Publications, New Delhi, 2010
4. Financial Management, Prasanna Chandra, Tata Mc Graw Hill Publications, New Delhi, 2009.

CMC-3634	INCOME TAX	6Hrs/6Cr
----------	-------------------	----------

Objective:

The objective of this course is to provide knowledge on the basic concepts of income and taxability under Income Tax Act, 1961. To equip the students with the working knowledge of accounting practices in order in order to prepare for CA, CMA, and ACS.

UNIT I

Introduction – Various terms Income Tax Act, 1961 – Finance Bill – Definition of person, Assessee: Previous year, assessment year – Concept of income – Exempted income – Residential status & Incidence of Tax: Gross total income & total Income.

UNIT II

Computation of income from salaries – definition – Forms of salary – Perquisites - Gratuity – Pension – Lease Enhancement – Provident Fund – Deduction – Profit in lieu of salary.

UNIT III

Computation of income from house property – Definitions – Meaning of various terms – Gross Annual Value – Net Annual Value – Partly let out and partly self – occupied house – Part on the year let out and part of the year self-occupied – unrealized rent-Rules in relation to calculation of business income, capital gains and income from other sources.

UNIT IV

Assessment of Individuals – various income included of and individual – Taxable Income – tax liability – Problems on computation of taxable income of an individual – clubbing of incomes – deemed income.- clubbing of income set off and carry forward of losses.

UNIT V

Deductions from Gross Total Income – Tax Deducted at other Source - advance payment of tax.

Reference Books:

1. Dr. Vinod Singhania, Students guide to Income Tax, Taxman Publications, 2015.
2. Dinkar Pagare, Law and Practice of Income Tax, 26th edition, Sultan Chand & Sons, 2015.
3. Bhagwati Prasad, Income Tax & Practice 29th Edition, Vishwa Prakashan, 2015.
4. Dr. Vinod Singhania, Direct Taxes, Taxman Publications, 2015.

CMC 3636 **NET PROGRAMMING (T+E)** 6Hrs/6Cr

Objective:

This paper provides a functional approach to computer programming and envisages students with recent trends in computer programming.

UNIT I

Basic .NET Programming using C#

Introduction to .NET technologies-Structure of a C# Program-Data Types-Basic Control Structures (topic for self-study)-Introduction to classes and objects-Arrays-Introduction to Visual Studio .NET IDE-Compilation options - /doc, /target, /out, /bugreport (topic for self-study)-FxCOP Tool Demo-Introduction to debugging-Classes and Objects-this keyword-Static-Properties and Indexer-Inheritance Overloading (Compile Time Polymorphism)-Overriding and Runtime Polymorphism-Abstract-Interface-Namespaces-Structures (topic for self-study)-System. Object-Boxing and Unboxing-Typecasting-Memory Management-Exception Handling-Collection-Basic Windows Controls-Delegates-Events and Event-Handling-Assembly-Attributes-File Handling-Serialization-NUnit tool Demo.

UNIT II

Programming with VB.NET

Variables-Comments-Constants-Keywords-Data Types-Control Statements-Conditional Statements-If Statement-Select Case Statement-Loops-The For Loop-The while Loop-The do...Loop-The For Each Loop-Arrays-Option Explicit-Option Strict-Exception handling in C#/ VB.NET.

Object Oriented Programming (OOP)-Class-Object-Encapsulation-Inheritance-Polymorphism-Abstract Class and Function-Interface-Constructors-Important Class-Windows Forms-Windows Application.

UNIT III

Intro to ADO.NET

Brief introduction of ADO.NET solution architecture-Data Access Models-Dissecting ADO.NET-Working with ADO.NET in Connected Mode-Working with ADO.NET in Disconnected Mode-Data Centric Application Architecture-Data Binding-XML Integration in ADO.NET-Transactions in ADO.NET-DBConcurrency Exception – Disconnected Mode-ADO.NET Technology – The Complete Picture-Recommendations for Data Access Strategies with Specific Types of Applications.

UNIT IV

Adv .NET programming using C#

Multithreading-Reflection-.NET Remoting-Garbage Collection-Windows Services-XML Parsing-COM Interoperability-Application Deployment

UNIT V

ASP.NET and Web Services

Introduction to Web Applications-Introduction to ASP.NET-ASP.NET Web Forms-ASP.NET Controls-User Controls and Custom Controls-Error Handling and Tracing-Data Binding-ASP.NET Built in Objects-ASP.NET State Management-ASP.NET Configuration Caching-Security-Introduction to Web Services WCF, WF & WPF-WCF security-Data Access (ADO Dot Net), Basics SQL-.NET and SQL Server-Application Blocks-Code Review Tools-Silverlight-WF, WPF-Card Space

Reference books:

1. Nitini pandey yesh singhal, mridula parihar- visual studio .net programming-wiley-Dream tech India (p) Ltd 2002.
2. Nikhil Kothari, vandana datye- developing Microsoft ASP.NET Server Controls and components – Tata Mcgraw Hill publishing company limited-2002.
3. Steven holzner- visual basic.netblack book-coriolis group book
4. David sceppa- Microsoft ADO.net(core reference)-Microsoft press-2002

This course would create interest in the minds of students to undergo the research in Commerce / Computer Application. The aim of the course is to sharpen the analytical skill of the students in the Field of Research

Objectives:

After the successful completion of the course the student would realize the importance of research.

1. Commerce / Computer Application Based Projects are permitted.
2. Individual Project under a Supervisor / Guide.
3. Student has to carry out the project during VI semester.
4. Viva-voce will be conducted at the end of the VI semester.
5. The Project Report Evaluation and Viva- Voce Examination will carried out Jointly by internal examiner (Supervisor / Guide) and external examiner

Distribution of Marks:

Continuous Assessment: 100 Marks

External Examination:

Project Report Evaluation	:	75 Marks
Viva-Voce Examination	:	<u>25 Marks</u>
Total	:	<u>100 Marks</u>

CMC 3210	EXPORT PROMOTION	3Hrs/2Cr.
-----------------	-------------------------	------------------

Objective:

The objective of this module is to provide the participants with a good knowledge on Export trade, types of trades, formalities for trade, legalities of export trade and the documentation process of it.

UNIT I

Exporting Preliminary Consideration -Generation of Foreign enquiries, obtaining local quotation & offering to overseas buyers scrutinizing export order, opening L/C by buyers- Export Controls and Licenses -Patent, Trade Mark, Copy Right Registrations - Confidentiality and NDA

UNIT II

Export Sales - Selling and Purchasing- Consignment - Leases - Marine and Air Causality Insurances - Export Finance - Forex - Major currencies, Exchange rates, relations & impact - Export costing and pricing & Inco terms - Export Licence - Import Licence

UNIT III

Export Packaging - Preparation of pre shipment documentation - Methods of Transportation - Country of Origin Marking- Inspection of Export consignment - Export by Post, Road, Air & Sea - Claiming for Export benefits and Duty drawbacks

UNIT IV

Shipment & Shipping documents - Complicated problems in shipments & negotiation of shipping documentations - Corporate marketing strategies - 100% EOU & Free trade zone - Deemed Export -Isolated Sales Transactions

UNIT V

Acts for export/import - Commencement - Customs Formalities - Export Documentation - Export of Services - Export of Excisable Goods - Import Documentation - Clearance - 100% export oriented units - customs house agents - import of different products - import/export incentives - import licenses etc.

Reference Books:

1. Shri C Rama Gopal, Chartered Accountant, Export Import Procedures- Documentation and Logistics, New Age International Publications.
2. Francis Cherunilam, International Marketing, Himalaya Publishing House, New Delhi.
3. Bhattacharya, International Trade, S Chand & Sons, New Delhi.

CMC 3200	ENVIRONMENTAL STUDIES	4Hrs/2Cr
-----------------	------------------------------	-----------------

Objective:

This course facilitates the students to get adequate knowledge on environmental problems and to develop an attitude towards the betterment of environment.

UNIT I

Multidisciplinary nature of environmental studies: Definition, scope and importance & Need for public awareness, Natural Resources: Renewable and non-renewable resources - Natural resources and associated problems - Forest resources: Use and over-exploitation, deforestation, case studies - Timber extraction, mining, dams and their effects on forest and tribal people - water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies - Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies - Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification - Role of an individual in conservation of natural resources - Equitable use of resources for sustainable lifestyles. [10 Hours]

UNIT II

Ecosystems: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers - Energy flow in the ecosystem - Ecological succession - Food chains, food webs and ecological pyramids - Introduction, types, characteristic features, structure and function of the Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries), Biodiversity and its conservation - Introduction - Definition: genetic, species and ecosystem diversity, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels, India as a mega-diversity nation, Hot-spots of biodiversity - Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India - Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity. [15 Hours]

UNIT III

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste Management: Causes, effects and control measures of urban and industrial wastes - Role of an individual in prevention of pollution - Pollution case studies - Disaster management: floods, earthquake, cyclone and landslides
[10 Hours]

UNIT IV

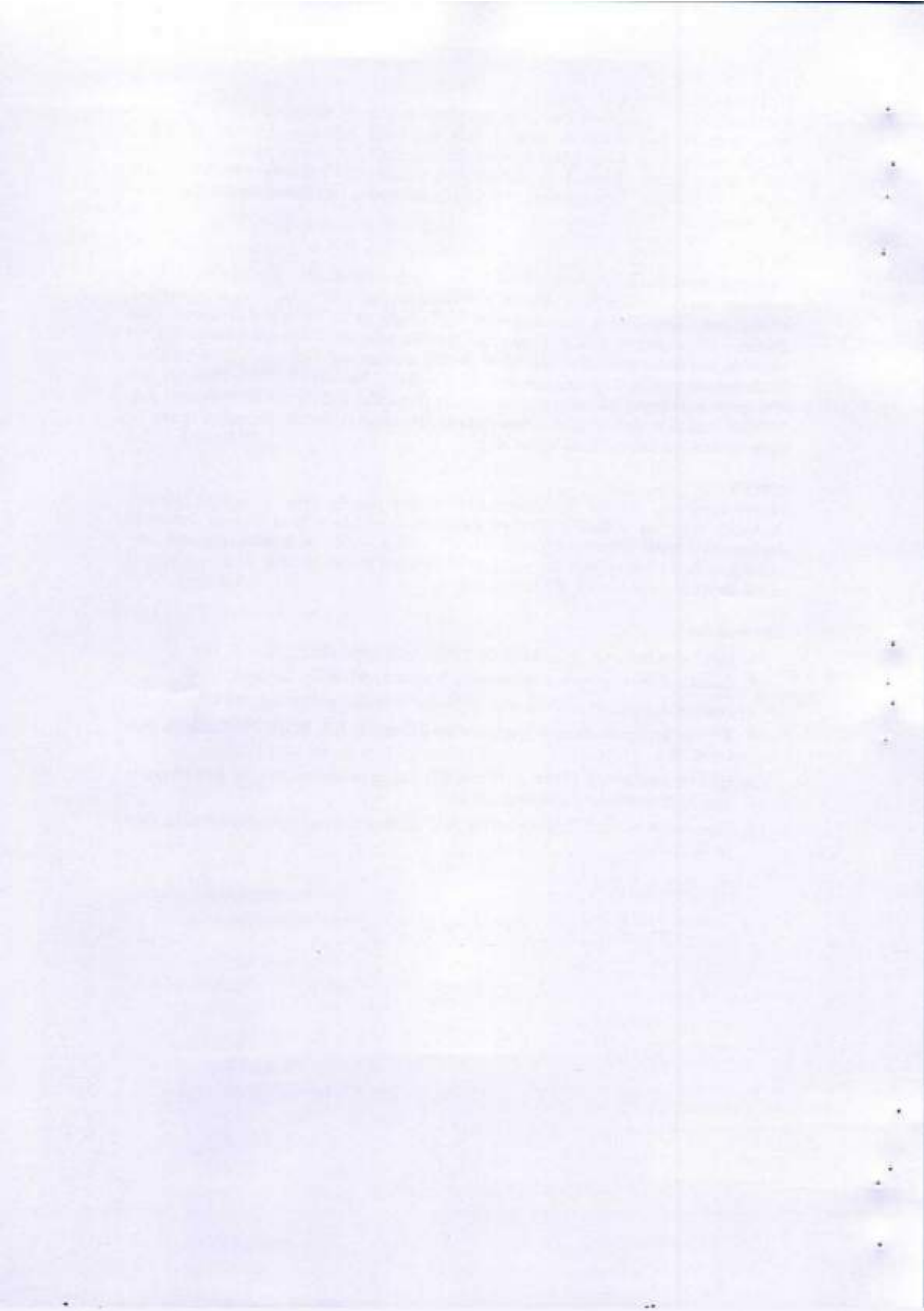
Social Issues and the Environment - From Unsustainable to Sustainable development - Urban problems related to energy - Water conservation, rain water harvesting, watershed management - Resettlement and rehabilitation of people; its problems and concerns. Case Studies - Environmental ethics: Issues and possible solutions - Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies - Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness.
[10 Hours]

UNIT V

Human Population and the Environment: Population growth, variation among nations, Population explosion – Family Welfare Programme, Visit to a local area to document environmental assets river/forest/grassland/hill/mountain - Visit to a local polluted site-Urban/Rural/Industrial/Agricultural - Study of common plants, insects, birds - Study of simple ecosystems-pond, river, hill slopes, etc.
[15 Hours]

Reference books:

1. http://collegesat.du.ac.in/UG/Envinromental%20Studies_ebook.pdf
2. Sankaran s., Environmental Economics, Margham publication, Chennai, 1998.
3. Francies cherunellum "Business environment" Himalaya publishing, 2004.
4. S.P. Gupta, "Environmental Issues for the 21st century led., Mittal Publications. New Delhi. 2003
5. E.El. Hinnawi& A.K Piswas, "Renewable sources of Energy and the Environment, Tycooly international publishing co., 1981
6. Subramanian N.S and Sambamoorthy A.V "Ecology", Narosa Publishing House, New Delhi, 2000.



THE AMERICAN COLLEGE
Department of Commerce (Information Technology)
COURSE STRUCTURE – B.Com (IT) 2015-16 onwards

Semester	Course	Subject Code	Subject Title	Hours	Credit	Marks
1	Part-I	CIT 1201	വായനക കഴിവുകൾ - I	3	2	30
	Part-II	ENS 1201	Conversational Skills	3	2	30
	Major	CIT 1503	Financial Accounting	5	5	75
	Major	CIT 1405	Business Communication	4	4	60
	Major	CIT 1407	Principles & Practices of Marketing	4	4	60
	Supportive	CIT 1509	Information Technology	5	4	30
	NME	CIT 1211	Small Business Management	3	2	30
	LS	CIT 1213	Web Designing TcL	3	2	60
TOTAL				30	25	375
2	Part-I	CIT 1202	വായനക കഴിവുകൾ - II	3	2	30
	Part-II	ENS 1202	Reading & Writing Skills	3	2	30
	Major	CIT1504	Financial Accounting II	5	5	75
	Major	CIT 1406	Banking Practices	4	4	60
	Major	CIT 1408	Business Economics	4	4	60
	Supportive	CIT 1510	E Commerce	5	4	60
	NME	CIT 1212	Business Planning	3	2	30
	LS	CIT 1214	Mechanised Accounting * TcL	3	2	30
TOTAL				30	25	375
3	Part-I	CIT 2201	ഘടനാസംഗ്രഹം	3	2	30
	Part-II	ENS 2201	Study Skills	3	2	30
	Major	CIT 2503	Partnership Accounting	5	5	75
	Major	CIT 2605	Business Law	6	6	90
	Major	CIT 2407	Business Intelligence System	4	4	60
	Major	CIT 2409	Programming with VB TcL	4	4	60
	Supportive	CIT 2411	Business Statistics	5	4	60
TOTAL				30	27	405
4	Part-I	CIT 2202	കമ്പ്യൂട്ടർ-ഭാഗ്യവശമുള്ള നേർ പ്രവർത്തനങ്ങൾ	3	2	30
	Part-II	ENS 2202	Career Skills	3	2	30
	Major	CIT 2504	Corporate Accounting	5	5	75
	Major	CIT 2606	Corporate Laws	6	6	90
	Major	CIT2408	Computer Networking	4	4	60
	Major	CIT 2410	Programming with C TcL	4	4	60
	Supportive	CIT 2412	Business Mathematics	5	4	60
TOTAL				30	27	405

Semester	Course	Subject Code	Subject Title	Hours	Credit	Marks
5	Major	CIT 3601	Cost & Management Accounting	6	6	90
	Major	CIT 3603	Assessment of Income tax	6	6	90
	Major	CIT 3605	Business Data Processing TcL	6	6	90
	Major	CIT 3507	Marketing Research	5	5	75
	LS	CIT 3209	Tourism and Hospitality Management	3	2	30
	VAL			4	2	30
TOTAL				30	27	405
6	Major	CIT 3602	Financial Management and Control	6	6	90
	Major	CIT 3604	Investment Management	6	6	90
	Major	CIT 3606	.NET Programming TcL	6	6	90
	Major	CIT 3508	Project Work	5	5	75
	LS	CIT 3210	International Marketing	3	2	30
	VAL	CIT 3200	Environmental Studies	4	2	30
TOTAL				30	27	405

SUPPORTIVE PAPERS

Semester	Subject Code	Subject Title	Hours	Credit	Marks
1	CIT 1509	Information Technology	5	4	60
2	CIT 1510	E Commerce	5	4	60
3	CIT 2411	Business Statistics	5	4	60
4	CIT 2412	Business Mathematics	5	4	60

NON-MAJOR ELECTIVES

Semester	Subject Code	Subject Title	Hours	Credit	Marks
1	CIT 1211	Small Business Management	3	2	30
2	CIT 1212	Business Planning	3	2	30

LIFE SKILL COURSES

Semester	Subject Code	Subject Title	Hours	Credit	Marks
1	CIT 1213	Web Designing TcL	3	2	30
2	CIT 1214	Mechanised Accounting * TcL	3	2	30
5	CIT 3209	Tourism & Hospitality Management	3	2	30
6	CIT 3210	International Marketing	3	2	30

* Pre requisite for non-commerce students: Fundamentals of Accountancy in I semester
TcL – Theory cum Lab

B. COM (IT) SYLLABUS 2015-16 ONWARDS

SEMESTER I

PART -I

CIT 1201

வணிகக் கடிதங்கள் - 1

3Hrs/2Cr

நோக்கம்: போட்டிகள் நிறைந்ததற்கால உலகத்தில் வணிகக் கடிதங்களின் முக்கியத்துவத்தையும் மற்றும் நடைமுறையில் எந்தபிழையும் இல்லாமல் எவ்வாறு அதனைப் பயன்படுத்துவது என்பதையும் விளக்குவது இப்பாடத்தின் நோக்கமாகும்.

அலகு:1

வணிகக் கடிதங்கள் - தேவைமற்றும் முக்கியத்துவம் - நோக்கங்கள்.

அலகு:2

வணிகக் கடிதங்களின் அடிப்படைக் கூறுகள் - வணிகக் கடிதங்கள் பொது அமைப்பு மற்றும் படிவங்கள் - சிறப்புக் கூறுகள் - கடித வகைகள்

அலகு:3

வியாபாரக் கடிதங்கள் முனைவுகடிதங்கள் மற்றும் விசாரணைகள் விலைப்புள்ளிகள்.

அலகு:4

ஆணையறுக்கள் - "ஆணையறுபிறவேற்றுதல்" சரக்குபெற்றுக்கொண்டதை உறுதிசெய்தல்.

அலகு:5

வணிக விசாரணைகடிதங்கள் - வியாபாரவிசாரணைமற்றும் வங்கிவிசாரணைகாரர்களும் சரிக்கட்டலும்

Reference:

1. வணிகக் கடிதத் தொடர்-Dr.K.அன்பழகன் S.இராமர் மெரிட் இந்தியாப் பிளிகேஷன்ஸ் மதுரை - 1
2. Commercial Correspondence & Office Management – R.S.N Pillai & Bhagavathi, S & Chand Publications, New Delhi
3. Secretarial Practice & Management – Prasantha Ghosh – Sultaa Chand Publications, New Delhi
4. வணிகக் கடிதத்தொடர்-Dr.N.பிரேமாவதி
5. வணிகக் கடிதத் தொடர்-S. முத்தையா
6. வணிகமடவியலும் அலுவலகமேலாண்மையும் - பாவைஆசிரியர் குழு பாவையதிப்பகம்

MAJOR COURSES**CIT 1503****FINANCIAL ACCOUNTING – I****5Hrs/5Cr****Objective**

The objective of the course is to enable students understand the fundamental of financial accounting system and to take up higher studies like CA, CMA and ACS with ease and confidence.

UNIT I

Accounting Principles, Concepts and Conventions: Accounting Standards – Meaning – Objectives – Significance – Advantages - Accounting Standards at International level - Accounting Standards at National level - Accounting Standards issued by ICAI - Functions of Accounting Standards Board - Procedure for formulating Accounting Standards – IAS 1, 2,3,6,7 and10. Rectification of errors - Journal Entries – Suspense accounts - Rectification before and after the preparation of the Trial balance - after the preparation of the Final accounts.

UNIT II

Bank Reconciliation Statement - Reconciliation in case of favourable and unfavourable balances in cash book and passbook - Reconciliation after adjustment in cash book and passbook.

UNIT III

Bill of Exchange – Meaning – Types - Promissory Notes – Features - Accounting treatment in the bills of exchange holding the bill till due date – Discounting of a bill – Endorsing a bill – Dishonour of a bill –Insolvency - Renewal of a bill – Retiring a bill-Accommodation bill. Average due date and Account Current - where amount is lent in different instalments - where the amount is lent in a single instalment - Account current -Forward method; Interest Table Method - Product Method - Red Ink Interest - Daily Balance Method - Backward method.

UNIT IV

Depreciation - Methods of providing depreciation – Straight line method - Written down value method - Change in method of depreciation - Annuity method - Sinking fund method - Insurance policy method - Insurance claims - Loss of stock policy - Average clause - Loss of profit policy - Goods sent on sale or return - Method of recording sale or return transactions: when the transactions are very few and rare – when the transactions are frequent - When transactions are large in number

UNIT V

Consignment – Stock valuation - Accounting for losses – Cost price method - Invoice price method - Memorandum column method. Joint Venture - Separate set of books – Same set of books - Memorandum joint venture method.

Reference:

1. Mukherjee A and Hanif M, Financial Accounting, TATA McgrawHills, New Delhi, 2003
2. Shukla M.C, Advanced Accounting, Sultan Chand and Sons, New Delhi, 2010
3. Gupta R.L and Radhaswamy, Advanced Accountancy, Sultan Chand and Sons, New Delhi, 2007
4. Jain S.P and Narang K.L, Advanced Accountancy, Kalyani Publishers, New Delhi 2007
5. Arulanandam M.A and Raman K.S, Advanced Accountancy, Himalaya Publishing House, Mumbai 2012

CIT 1405**BUSINESS COMMUNICATION****4Hrs/4Cr**

Objective: To develop the written and oral business communication skills particularly required for interviews, group discussions and presentations.

UNIT I

Business Communication: Meaning, Importance of Effective Business Communication, Barriers to Communication, Modern Communication Methods, Business Letters, Need, Functions, Kinds, Essentials of Effective Business Letters, Layout of effective business letters.

UNIT II

Enquiries: Offer, Quotations, Trade Enquiries: Orders and their Execution, Extension of time for execution of orders, Declining orders. Credit and Status Enquiries: Complaints and Adjustments: Collection Letters: Statement of account, Reminders, Strong reminders and limiting date letters. Sales Letters and Circular Letters.

UNIT III

Business Correspondence: Banking Correspondence: Letters from banker and customer and letters from customers to bankers. Insurance Correspondence: Surrender, Revival and other enquiries related to insurance. Agency Correspondence Letters, Company Secretarial Correspondence (Includes Agenda, Minutes and Report Writing)

UNIT IV

Letter, Interview: Application Letters: Preparation of Resume with detailed types of preparing resumes. Interview: Meaning, Objectives and Techniques for facing various types of Interviews.

UNIT V

Report and Public Speech: Report - Business Report Presentations - Methods of preparing business report for different domains. Public Speech - Characteristics of a good Speech

Reference:

1. Rajendra Pal and Korlahally, 'Essentials of Business Communication', Sultan Chand & Sons, New Delhi, 2006.
2. Ramesh M.S. and Pattanshetti C.C., 'Business Communication', Sultan Chand & Sons, New Delhi, 2003.
3. Rodriquez M.V., 'Effective Business Communication Concept', Vikas Publishing Company, New Delhi, 2003.

CIT 1407**PRINCIPLES & PRACTICES OF MARKETING****4Hrs/4Cr**

Objective: To give basic knowledge about the concept of Marketing. To create awareness on the issues, practices and principles of Marketing

UNIT I

Origin – meaning – definition- evolution of Marketing, classification of Marketing - micro and macro Marketing, objectives of Marketing, factors influencing Marketing, merits of Marketing.

UNIT II

Marketing system- Marketing mix- meaning- definition – elements- problems. Marketing system- meaning- Marketing process, marketing functions- functions of exchange- function of physical exchange- function of facilitating function. Functions of buying, assembling and selling.

UNIT III

Marketing environment – introduction – scanning the environment – importance of environment analysis- concept of micro and macro environment- Company's suppliers- intermediaries- customers- competitors- public- demographic environment- political environment- physical environment- technological environment- economic environment- legal environment.

UNIT IV

Marketing segmentation Introduction- definition- bases- geographic- demographic- psychographic- socio- economic. Benefits of marketing segmentation. Product mix- introduction- meaning- types. Product life cycle- stages- benefits.

UNIT V

Marketing strategy and planning- Introduction – planning meaning- definition-- features- marketing planning meaning- importance- benefits- characteristics- planning process. New product development- process- importance- technologies- advantages.

Reference:

1. R.S.N. Pillai & Bagavathi, Modern Marketing, S.Chand, New Delhi, 4th edition, 2010.
2. Dr. Gupta, Marketing Management, Sutan Chand & sons, New Delhi, 15th edition, 2012.
3. Philip Kotler, Principles of Marketing, Prentice Hall of India, New Delhi, 2006
4. Rajan Nair, Marketing, Sultan Chand & Sons, New Delhi, 2004

SUPPORTIVE COURSE**CIT 1509****INFORMATION TECHNOLOGY****5Hrs/4Cr**

Objective: The Objective of the course is to familiarize the students with the innovations in information technology and how it affects business.

UNIT I

Fundamentals of Computers: Computer Processing System: Definition of Computer, Hardware/software concepts; Generation of computers; Types of computers; Elements of digital computer; CPU and its functions; Various computer systems - Information Revolution and Information Technology (IT): Deployment of IT in Business; Basic features of IT; Impact of IT on business environment and social fabric; Invention of writing; Written books; Printing press and movable type - Gutenberg's invention; Radio, telephone, wireless and satellite communication; Computing and dissemination of information and knowledge and convergence of technologies (Internet with Wireless- WAP).

UNIT II

I/O devices: Basic concepts of I/O devices Keyboard, mouse, MICR, OCR microphones. Various output devices: VDU, Printer, plotter, spooling, LS. Storage Devices: Primary and secondary memory; Types of memories; Memory capacity and its enhancement; Memory devices and their comparisons: Auxiliary storage; tapes, disks (magnetic and optical); various devices and their comparison.

UNIT III

System Software- Role of Software, Different System Software: O.S., Utilities, element of O.S. -its types and variations; DOS and windows.

UNIT IV

Computer and Networks: Need of communication; Data transmission; Baud; Bandwidth; Communication channel; Multiplexing; Basic network concepts; O.S.I. model; Types of topologies; LAN, WAN; Client server concept.

UNIT V

Computer-based Business Applications - Word Processing: Meaning and role of word processing in creating of documents, editing, formatting, and printing documents, using tools such as spelling check thesaurus, etc. in word processors (MS-Word).

Reference:

1. Application Protocol; Macmillan India, New Delhi
2. Kanter: Managing with Information; Prentice Hall New Delhi.
3. Goyal: Management Information System; Macmillan India, New Delhi.
4. Timothy J O'Leary: Microsoft Office 2000; Tata McGraw Hill, New Delhi.

NON-MAJOR ELECTIVE COURSE**CIT 1211****SMALL BUSINESS MANAGEMENT****3Hrs/2Cr**

Objective: This course envisions the basis of entrepreneurship and initiate the students to start up and run their own business.

UNIT I

The entrepreneur- definition, types, essential qualities of an entrepreneur – analysis of entrepreneurial growth – history of successful entrepreneurs- Challenges of women entrepreneurship

UNIT II

Planning for small business- Project planning – starting a new venture – location and site, finance – sources of finance – private bank and other institutional finance

UNIT III

District Industries Centre DIC- monetary and non-monetary incentives, SIPCOT-National small Industries Corporation of India-SEZ

UNIT IV

Industrial estates – training programmes – SISI, crisis areas for small business – success and failure factors – industrial sickness

UNIT V

Profit planning – growth strategies and diversification, advertising and promotions- working capital management personnel management – marketing of small scale industrial products

Reference:

1. Jose Paul, N. Ajith Kumar, Paul.T. Mampilly, Entrepreneurial Development, Himalaya Publishing House, 2009.
2. T.R. Banga, Project Planning and Entrepreneurial Development, Himalaya Publishing House, 2009.
3. K.K. Menon, Hand book for Small Industries Management, Sultan Chand &Co, 2010

LIFE SKILL COURSE

CIT 1213

WEB DESIGNING

3Hrs/2Cr

Objective: This course facilitates the students to understand the fundamentals of e-commerce and web designing that will be helpful to do online trade.

UNIT I

Basics of Internet – File Transfer – Web Server, Web objects and sites – Web browsers – Data Security and Fire walls – Various Devices used for Internet Connectivity – Elements of website – operations on web pages – down loading and sending mails – static and dynamic web pages.

UNIT II

Hyper Text – HTML Document features – Documents structuring tags in HTML – Lining your way around the Web – Publishing hour HTML document – Understanding the HTML document life cycle – Site design and Navigation – Planning and Designing Your Web Pages – Dividing a Window with Frames – Lay out Technology – Adding Graphics – Presenting Information Tables – Web Typography – Optimizing Your Pages for Internet Explorer and Netscape Navigation – Including Multimedia – Using Style Sheets – Developing HTML Forms – DHTML – Exploring and Navigation Dynamic HTML – Sample Web Page Creation with all possible tags.

UNIT III

Web Publishing: Basic HTML Concepts -HTML: Structured Language -Overview of HTML -Web Browser -WWW -Web Server - HTML -HEAD -TITLE -BODY -Paragraphs -Lists -Formatted and Unformatted Text -Extended Quotations -Address -Horizontal Rules -Hyperlink -Font (Size, Colour) -Image (Add, Alignments) -Table -Cell Spacing / Cell Padding -Frame Set -Form

UNIT IV

Designing Web Pages: Working with text -Inserting Images -Web Graphic Format GIF, JPEG, PNG -Inline Images -Background images, Banner Ads -Rollover Images -Establishing Web Links -Understanding URLs -Adding an E-Mail Link -Navigating with Anchors Working with Divs and Layers -Placing <div> tags -Creating Layers -Modifying a Layer -Creating Lists -Unordered Lists -Ordered Lists -Definition Lists -Nested Lists

UNIT V

Tables, Frames and Framesets: HTML Table Fundamentals - Creating form lists and Menus -Activating forms with buttons - Using Hidden fields and File fields - Frames and Framesets Basics -Creating a Framesets and Frames -Adding more frames -Modifying a frame -Targeting Frame Contents.

Reference:

1. Raj Kamal, Internet and Web Technologies, TalaMc-Graw Hill India Ltd., New Delhi, 2002
2. Powel A.T.HTML Complete Reference Tata McGraw Hill Publications, 3rd Edition (2000).
3. Monica D' Souza & Jude D' Souza, Web Publishing, McGraw-Hill Publishing, 2001
4. Monica D'Souza, Jude D'Souza, World Wide Web, Tata McGraw-Hill Publishing, 2001
5. Thomas Powell, HTML & XHTML: The Complete Reference (Osborne Complete Reference Series) Paperback- August 19, 2003
6. Thomas Powell, HTML & CSS: The Complete Reference, Fifth Edition (Complete Reference Series) Paperback, McGraw-Hill Publishing 2010

SEMESTER II**CIT 1202****வணிகக் கடிதங்கள் - II****3Hrs/2Cr**

நோக்கம்: பல்வேறுவகையான கடிதங்கள், அவைகளின் குறித்து விளக்குதல் இப்பாடத்தின் நோக்கமாகும். தனிமை, அமைப்புக்

அலகு: 1

நிலுவைத் தொகை - நினைவுறுத்தல் வசூல் செய்தல் - கணக்கை நேர் செய்தல்

அலகு: 2

கற்றுக் கடிதங்கள் - விற்பனைக் கடிதங்கள்

அலகு: 3

அரசுத்துறை மற்றும் பொதுச்சேவை அமைப்புச் சார்ந்த கடிதங்கள்

அலகு: 4

வங்கிக் கடிதங்கள் - காப்பீட்டுக் கடிதங்கள்

அலகு: 5

வேலைவிண்ணப்பக் கடிதம் - பத்திரிக்கை ஆசிரியருக்கு கடிதங்கள்

Reference:

1. வணிகக் கடிதத் தொடர்பு-Dr.K. அன்பழகன் S. இராமர் மெரிட் இந்தியாப் பப்ளிகேஷன்ஸ் மதுரை
2. R.S.N Pillai & Bhagavathi, Commercial Correspondence & Office Management S & Chand Publications, New Delhi, 2010.
3. Prasantha Ghosh, Secretarial Practice & Management, Sultan Chand Publications, New Delhi, 2010.
4. வணிகக் கடித தொடர்பு-Dr.N. பிரேமாவதி
5. வணிகக் கடிதத் தொடர்பு-S. முத்தையா
6. வணிகமடலியலும் அலுவலகமேலாண்மையும் - பாவை ஆசிரியர் குழு பாவைபதிப்பகம்

MAJOR COURSES

CIT 1504

FINANCIAL ACCOUNTING II**5Hrs/5Cr**

Objective: This course is being offered to enable student to develop skill in preparation of accounts for various business organisations.

UNIT I

Accounts of Non-trading Organisation - Receipts and Payments Accounts - Income and Expenditure Accounts - Balance Sheet.

UNIT II

Departmental Accounting - Allocation and Apportionment of Departmental expenses - Inter-departmental transfers at cost price and selling price - Preparation of Final Accounts

UNIT III

Branch Accounts - Dependent Branches - Stock and Debtor System - Final Account System - Independent Branch System - Incorporation of branch Trail balance in Head office books - Consolidated Final Accounts.

UNIT IV

Hire Purchase Accounts - Calculation of Interest - Default and Repossession - Method of Computation of Profit - Instalment Purchase System - Accounting treatment in the books of buyer and vendor.

UNIT V

Royalty Accounts - Minimum Rent - Short workings - Recoupment of short workings - Accounting treatment in the books of lessee and lessor - Effect of strike, lockout and accident - sub lease - Royalty Receivable and Payable - Accounting treatment in the book lessee.

Reference:

1. Mukherjee A and Hanif M, Financial Accounting, TataMcgrawHills, New Delhi, 2003
2. Reddy T.S and Murthy A , Advanced Accountancy, Margham Publications, Chennai, 2004
3. Gupta R.L and Radhaswamy , Advanced Accountancy, Sultan Chand and Sons, New Delhi, 2007
4. Jain S.P and Narang K.L, Advanced Accountancy, Kalyani Publishers, New Delhi 2007
5. Arulanandam M.A and Raman K.S, Advanced Accountancy, Himalaya Publishing House, Mumbai 2012

CIT 1406

BANKING PRACTICES

4Hrs/4Cr

Objective: To train students in the field of modern banking through the relevant banking theories and practices.

UNIT I

Introduction and definition of banking. Banker and Customer - General and special relationship between banker and customer, Banker's lien, Rights of banker especially right to maintain customer's account secrecy and circumstances of revealing, Special types of customers. Functions, features, advantages and disadvantages of Investment banking, Branch banking and Unit banking.

UNIT II

Banking system in India - Functions and role of Commercial banks, Cooperative banks, Regional Rural Banks, Land Development Banks, Lead bank scheme, NABARD, EXIM bank, and Nationalisation of banks.

UNIT III

RBI: Functions, credit creation, credit contraction and credit control measures (both qualitative and quantitative) and anti-money laundering.

UNIT IV

Pass book - Legal significance, favourable and unfavourable entries and their effects. Investment Policies: Principles of sound lending, Bank loans and advances policy, Secured and unsecured advances. Cheques: Types of cheques, difference between cheque, bill of exchange and promissory notes.

UNIT V

Trends in Banking - Collecting banker: holder for value and holder in due course. Paying banker: circumstances of dishonour and statutory protection to paying banker. Automated Teller Machines, Credit cards and debit cards: Payment process, differences and advantages and problems in using. E-banking: Internet banking, Mobile banking, SMS banking, ECS, RTGS, NEFT.

Reference:

1. Gordon K. And Natrarajan E. 'Banking theory, Law and practice', Himalay Publishing House, New Delhi, 2011.
2. Davar, 'Banking Law and Practice', S.Chand& Sons, New Delhi, 2003.
3. Vasudevan S., 'Banking Theory, Law and Practice', S.Chand& Sons, New Delhi, 2004.
4. Vasanth Desai, 'Banking Theory, Law and Practice', Himalaya publishing House, New Delhi, 2002.
5. Bhaskaran R. 'Anti-money laundering and know your customer', Indian Institute of Banking and Finance, Macmillan Publishers India Ltd, New Delhi, 2014.

CIT 1408 BUSINESS ECONOMICS**4Hrs/4Cr**

Objective: The main objective of this course is to familiarize the students with the basic concepts in Business Economics to apply in their Business.

UNIT I

Meaning of business economics – Characteristics – Scope – Objectives – Micro and Macro Economics - Objectives of firm. Cardinal approach - Law of Equi-Marginal utility – Ordinal approach – Indifference curve - Consumer's surplus (meaning, limitations)

UNIT II

Demand decision – Determinants of demand – Exemption – Elasticity of demand – Kinds and types – Business uses of elasticity - Demand forecasting_ Qualitative and quantitative methods – For new product

UNIT III

Production decision – Production function – The law of variable proportion – Law of returns and returns to scale – Isoquant – Properties – Producer's equilibrium. Cost functions – Long run cost curve – Internal and external economies of scale – Concepts of revenue - Break even analysis.

UNIT IV

Pricing decision – Pricing under perfect competition – Monopoly – Degree of price discrimination – Monopolistic competition, Product differentiation – Selling cost – Oligopoly – Kinked demand curve model. Pricing method – Full cost pricing – Customary pricing.

UNIT V

Macroeconomics – National income based business decision – Trade cycle – Inflation – Causes and consequences – Measures to check inflation.

Reference:

1. Mithani D. M, Business Economics,
2. Dr. P. N. Reddy & H. R. Appanaiah: Essentials of Business Economics,
3. Shankaran S, Business Economics,
4. Maheshwari and Varshney , Business Economics, Sultan Chand Publications, New Delhi.

SUPPORTIVE COURSE**CIT 1510****E- COMMERCE****5 Hrs. / 5 cr**

Objective: This course is being offered to make a student familiar with the mechanism of conducting business transactions through electronic media, understand the methodology of online business dealings using e-commerce infrastructure.

UNIT I

Introduction to E-Commerce, features, and functions of e-commerce, e-commerce practices viz. traditional practices, scope and limitations of e-commerce, e-commerce security, Benefits, Impact of E-Commerce, State of e-commerce in India, problems and opportunities in e-commerce in India, legal issues, future of e-commerce.

UNIT II

Classification of E-Commerce, of E-Commerce Technology, Business Models, Framework of E-Commerce., Business to Business, Business to Customer, Customer to Customer, service provider, e-distributor, procurement and just-in-time delivery

Unit III

Internet and its role in e-commerce, procedure of registering Internet domain, establishing connectivity to Internet, tools and services of Internet, procedure of opening e-mail accounts on internet.

UNIT IV

Transactions through Internet, requirements of e-payment systems, functioning of debit and credit cards, pre and post payment services, Marketing on the web, marketing strategies, creating web presence, advertising, customer service and support, web branding strategies, web selling models, Online booking systems, online booking procedure of railways, airlines, tourist and religious places, hotels and entertainment industry

UNIT V

Setting up Internet security, maintaining secure information, encryption, digital signature and their security measures, authenticity, privacy, integrity, non-repudiation, encryption, secret key cryptography, public key cryptography, SET, SSL, digital signatures, firewalls

Reference:

1. Bharat Bhasker, Electronic Commerce -Framework, technologies and Applications, Tata McGraw Hill, 2002
2. Daniel Amor, E Business R (Evolution), Prentice Hall, 2nd Edition, 2001
3. Sandeep Krishnamurthy, E-Commerce Management, Vikas Publishing House, New Delhi, 2003
4. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill, 2009
5. P. T. Joseph, E-Commerce: A managerial Perspectives, Prentice Hall India, 2002

NON-MAJOR ELECTIVE COURSE**CIT 1212 BUSINESS PLANNING****3 Hrs./ 2 Credits**

Objective: To sharpen critical thinking skills and independent problem-solving techniques relevant to the analysis of business problems and the generation of feasible strategic solutions.

UNIT I

The Business Plan: An Overview

UNIT II

Opportunity and Market Analysis

UNIT III

The Entrepreneurial Solution and Concept, the Marketing and Sales Plan

UNIT IV

The Product Development Process and Operations - The Management Team and Organizational Structure - Critical Risks and Problems

UNIT V

Financial Planning, Financing sources and Finishing Touches

Reference:

1. Macmillan, I.C., Siegel, R., Narsimha, P.N. (1985) Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing*, 1(1)
2. Dorf, R.C., (2007). *Technology Ventures: From Idea to Enterprise with Student DVD*. 2ndEdn., McGraw-Hill Higher Education.
3. O'Donnell, M., (1998). *The Business Plan: Step by Step*. 3rd Edition. UND Center for Innovation.

Free condensed copy found in:

[http://www.startupbiz.com/Tools/Business_Plan_Workbook_CONDENSE]**LIFE SKILL COURSE****CIT 1214****MECHANISED ACCOUNTING*****3Hrs/2Cr**

[* Pre requisite for this course is a basic knowledge in fundamentals of accounting]

Objective: To develop skills in preparation of accounts for various business organizations in integrated business accounting software.

UNIT I

Introduction to accounting software, Advantages and disadvantages of Mechanized Accounting, Introduction to Tally, Features of Tally, Creation of company, Gateway of Tally-menu and buttons, Features and configuration

UNIT II

Creation of accounts master, Accounting vouchers, Creation of inventory master, Inventory vouchers

UNIT III

Invoicing, Advanced Accounting- Bill-wise details, Cost centres and cost categories, multiple currencies, Cheque printing, Bank reconciliation, Budgets and controls, accounting reports

UNIT IV

Advanced inventory- Order processing, re-order level, tracking numbers, Bill of materials, Stock valuation methods, zero valued entries

UNIT V

VAT, TDS, TCS, FBT, Excise duty, printing options in Tally

Reference:

1. K. Nadhani and K.K. Nadhani, Implementing Tally 9, BPB Publications, New Delhi, 2012
2. Dr. Namrate Agarwal and Shri. Sanjay Kumar, Tally 9, Dreamtech press, 2008
3. NellaiKannan, Tally 9(VAT&TDS), Enabled Nets Publications, 2008
4. Self-learning guide and work book, Volume I &II, Tally solutions Private Ltd, 2006

SEMESTER III**PART – I****COM 2201****அலுவலகமேலாண்மை****3Hrs/2Cr****நோக்கம்:**

நவீன அலுவலகத்தின்

அமைப்புமுறைகள், செயல்பாடுகள், அன்றாட நடவடிக்கைகளை விளக்குதல், அலுவலகத்தின் வளமைகளை முறைப்படிப் பயன்படுத்தி, அதிகாரப் பரிசீலனைச் சரியாகக் கையாளுதலின் மூலம் பணித்தளத்தை எவ்வாறு எளிதாக்குதல் மற்றும் தகவல் தொடர்புச் சார்ந்த பதிவேடுகளை முறையாகக் கையாளுதல் போன்றவற்றை விளக்குவதே இப்பாடத்தின் நோக்கமாகும்.

ஆலகு - 1

அலுவலகமேலாண்மை - இலக்கணம் - நவீன அலுவலகத்தின் அமைப்புமுறைகள் நவீன அலுவலகத்தின் இலக்கணம் செயல்பாடுகள் மற்றும் முக்கியத்துவம் மேலாண்மை மற்றும் அமைப்பு-அலுவலகமுறை மற்றும் அன்றாட நடவடிக்கைகள்

ஆலகு - 2

பணிபொக்கு ஒப்படைப்பு செயல்முறைகள் - அதிகாரத்தையே பரவலாக்குதல் - அலுவலகவளமை வகைகள் - வளமைகளைத் தயாரித்தல் - பயன்படுத்துதல் மற்றும் மதிப்பீடுதல்

அலகு - 3

அலுவலக இடவசதி, அலுவலகமனைத் துணைப் பொருட்கள் மற்றும் அமைப்புத் திட்டம் - பணிக்கேற்றகுழிநிலை, பணியளவிதாக்குதல்

அலகு - 4

அஞ்சலகமுறைகடிதப்

பதிவேடுகளைபராமரித்தல், தபால்களையகையாளுதல் - அஞ்சல் துறையை அமைத்தல் - மையப்படுத்தப்பட்ட அஞ்சல் பணிகள் மற்றும் வெளித்தொடர்பு - வாய்மொழித் தகவல் தொடர்பு மற்றும் எழுத்து மூலம் தகவல் தொடர்புபதிவேடுகளை உருவாக்குதல் - எழுத்துப் பணிகள் - அலுவலக அறைகள் - படிவக் கட்டுப்பாடு - வாடிக்கைப் பதிவு - தொட்புளமுதுபொருள்.

அலகு - 5

கோப்பிலிடுதல்: நல்லகோப்பீடுமுறையின் முக்கிய அம்சங்கள் - வகைப்படுத்துதல் மற்றும் வரிசைப்படுத்துதல் - கோப்பீடுமுறைகள் - மையக் கோப்பீடுமுறை மற்றும் பரவலாக்கப்பட்ட கோப்பீடுமுறை சட்டகராதியின் பல்வேறு வகைகள்.

Reference:

1. அலுவலகமுறைகள் - எஸ்.எம். சுந்தரம் ஸ்ரீமீனாட்சிபப்ளிகேஷன்ஸ், காரைக்குடி
2. Commercial Correspondence & Office Management – R.S.N Pillai & Bhagavathi, S & Chand Publications, New Delhi
3. Secretarial Practice & Management – Prasantha Ghosh – Sultan Chand Publications, New Delhi
4. வணிகமடலியலும் அலுவலகமேலாண்மையும் - பாவை, ஆசிரியர் குழு பாவைபதிப்பகம்
5. அலுவலகமுறைகள் - Dr.K. அன்பழகன் S. இராமர் மெரிட் இந்தியாப்ளிகேஷன்ஸ், மதுரை-1.

MAJOR COURSES

CIT 2503 PARTNERSHIP ACCOUNTING

5 Hrs. / 5 Cr

Objective: This accounting course enables the students to get thorough knowledge in business accounting and also to get them trained for CA and ICWA examinations.

UNIT I

Partnership: Meaning – Features – Kinds – Partnership Deed – Appropriation of Profit & Loss Account – LLP – Accounting procedures.

UNIT II

Admission of a Partner – Profit sharing ratio – Goodwill – Revaluation of Assets and liabilities – Retained earnings and Accumulated Losses – book values are not to be altered (Memorandum revaluation method).

UNIT III

Retirement of a partner – ascertainment of amount due to retiring partner – simultaneous retirement and admission – Death of a Partner – Profit Sharing ratio – Joint Life Policy.

UNIT IV

Amalgamation of firms – meaning – accounting procedure – assets and liabilities not taken over.

UNIT V

Dissolution of Partnership – Dissolution of firm – Dissolution by the court – settlement of accounts – Dissolution Accounts – Gradual realization of Assets and Piecemeal Distribution – Insolvency of a partner – Insolvency of more partners than one - Insolvency of all partners. Sale of Partnership Business to Company – Accounting Entries

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi, 2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi, 2009
3. S.P.Iyengar, Advanced Accounting Vol I, S.Chand & Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Voll, Central Publishing Company, Kolkatta, 2006

CIT 2605**BUSINESS LAW****6 Hrs./6 Cr**

Objective: To equip the students with the working knowledge of legal practices in order to prepare for professional examinations

UNIT I

Sources of mercantile law – contract – definition – kinds – essential elements – offer and acceptance – consideration – capacity – consent – mistake - Unlawful agreement and illegal agreement – agreements opposed to public policy – wagering agreements and contingent contracts – performance of contracts – discharge of contracts – kinds – remedies for breach of contracts – quasi contracts.

UNIT II

Indemnity and Guarantee - Rights of Indemnity holder – Difference between Indemnity and Guarantee – Rights of Surety – Discharge of Surety.

UNIT III

Industrial disputes Act- settlement mechanisms- types of disputes- offences and penalties- health, safety and welfare measures of workers under Factories Act

UNIT IV

Information Technology Act, 2000- scope, nature, applications in business to business- business to customer

UNIT V

Right to Information Act-Information- concepts in relation to business world

Reference:

1. Business Laws, N.D.Kapoor, Sultan Chand & Sons, New Delhi,2013
2. Indian Business Laws, Agarwal, Galgothra Publications,2006.
3. Economic Laws 2014, Taxmann Publications, New Delhi, 2014 Dr.Tuteja S.K, Business Law for managers, Sultan Chand & Sons, New Delhi, 2006.
4. Kapoor G.K, Lectures on Business & Corporate Laws, Sultan Chand & Sons, New Delhi, 2005.
5. Kuchhal M C, Mercantile Law, Vikas Publishing House Pvt.Ltd., New Delhi, 2004.
6. Praveen, Suggested Answers in Mercantile Law, Sultan Chand & Sons, New Delhi, 2005.

CIT 2407 BUSINESS INTELLIGENCE SYSTEM 4 Hrs. / 4 Cr

Objective: This course enables the students to understand the business intelligence system and to apply in business

UNIT I

Understanding Business Intelligence: The challenge of decision making - What is business intelligence? - The business intelligence value proposition - The combination of business and technology

UNIT II

Business Intelligence Technology Counterparts - Data warehousing - Data marts and analytical data - Organization of the data warehouse, Enterprise Resource Planning - Distributing the enterprise - First ERP, then business intelligence - The current state of affairs, Customer Relationship Management - CRM, ERP and Business intelligence - Customer decisions

UNIT III

Business intelligence and financial information, The Spectrum of Business Intelligence - Enterprise and departmental business intelligence - Strategic and tactical business intelligence

UNIT IV

Business Intelligence User Interfaces - Querying and reporting, Reporting and querying toolkits, Basic approaches - Building ad-hoc queries, Building on-demand self-service reports, Enhancing and modifying - Data access - Pull-oriented data access - Push oriented data access, Dashboards - EIS is the engine - Metric system and KPIs - Business intelligence dashboards

UNIT V

On-Line Analytical Processing (OLAP), OLAP and OLTP - Operational Data Stores - Variations in data and approach, Multi-dimensions - Thinking in more than two dimensions, OLAP architecture - Cubism, Tools, ROLAP, MOLAP, HOLAP - Data mining

Reference:

1. Decision Support and Business Intelligence Systems, 8th Edition by Efraim Turban, Jay E. Aronson, Ying-Peng Liang, and Ramesh Sharda. Pearson Prentice Hall, Inc. 2007.
2. Performance Dashboards; Measuring, Monitoring, and Managing Your Business by Wayne W. Eckerson. John Wiley & Sons, Inc. 2006.
3. The Microsoft Data Warehouse Toolkit by Joy Mundy and Warren Thornthwaite, Wiley publishing, Inc. 2006.

CIT 2409**VISUAL BASIC****4 Hrs. / 4 Credits**

Objective: This course is being offered to IT students, as most of the decision support systems require programming knowledge in Visual Basic.

UNIT I

Introduction to Visual Basic: Features of Visual Basic -The Visual Basic Philosophy -The integrated development environment -The anatomy of Form -Project Types

UNIT II

Dealing With Data: Operators-Variables -Declaring Variables -Types of Variables -Data types -Constants Arrays -Declaring Arrays -Specifying Arrays -Multidimensional Arrays -Dynamic Arrays -Arrays of Arrays

UNIT III

Writing Code: Collections -Procedures -Subroutines -Functions -Calling Procedures -Object Browser -Creating Classes & Object -I/O Statements -Control Flow Statements -If—Then -If-then-else -Nested Control Statements -Select-Case Loop Statements -Do—Loop -For—Next -While-Wend -Exit Statement

UNIT IV

Creating an Application Using Controls: What is on the toolbar -Textbox Control -Picture Box -Image Box -Label Box -Frame -List Box -Option Button -Combo Box -Command Button -Check Box -The Drive, Directory, File List Controls -The Line & Shape Control -Scroll Box -Data -Timer

UNIT V

Multiple Document Interface & Menus: Why MDI Forms - Features of an MDI forms - Loading MDI forms & child forms - Creating a simple MDI forms - Accessing MDI forms - Creating MENUS - POP-UP MENUS - DATA Access Controls: JET database Engine - ADODC -DAO Data Control -ODBC Data Source Administrator -DATA REPORT

Reference Books:

1. Mohammed Azam, Programming with VB 6.0
2. Evangelos Petroustos, Mastering VB 6.0, Wiley India, 2006
3. Peter Wrights, Beginning VB 6.0
4. Steve Brown, Visual Basic 6 Complete, Wiley India, 1999

SUPPORTIVE COURSE**CIT 2411****BUSINESS STATISTICS****5Hrs/4Cr**

Objective: The purpose of this paper is to include and analytical ability among the students.

UNIT I

Meaning, Scope, Importance and Limitations of Statistics, Statistically Investigation: Planning of statistical investigation, census and sampling methods Collection of primary and secondary data, Statistical errors and approximation, classification and Tabulation of data, Frequency distribution.

UNIT II

Statistical Average: Arithmetic, geometric and Harmonic means, Mode Median, Qualities and percentiles, Simple and weighted averages. Uses and Limitations of different averages.

UNIT III

Dispersion and Skewness: Range, Quartile deviation, mean Deviation and their coefficients, standards deviation, coefficient of variation, Skewness and its coefficients.

UNIT IV

CORRELATION: Karl person's coefficient of correlation, Probable Error and interpretation of coefficient of correlation, Rank Difference Method and Concurrent Deviation method. Linear Regression.

UNIT V

Index Numbers: Utility of index numbers. Problems in the construction of index numbers, simple and weighted index number, Base shifting fishers ideal index number and tests of Reversibility.

Reference:

1. D.N. Elhance, Fundamentals of Statistics, New Century Book House, 2011
2. S.P. Gupta, Fundamentals of Statistics, Sultan Chand Publishers, New Delhi, 2007
3. S C Gupta, V K Kapoor, Mathematical Statistics, Sultan Chand & Sons, 2001
4. Statistical methods, S P Gupta, Sultan Chand & Sons, 2001
5. S Arumugam, & A Thangapandian Isaac, Statistics, New Gamma Publication House, 2004

SEMESTER IV**PART - I****COM 2202**

காப்பீடு-கோட்பாடுகளும் நடைமுறைகளும்

3Hrs/2Cr

நோக்கம்: காப்பீட்டின் இலக்கணம், வகைகள்,கொள்கைகள் மற்றும் இட்பாடுகள், இன்னல்கள் போன்றவற்றையும்,காப்பீட்டின் முக்கிய அம்சங்களானமுனைமம் கணக்கிடுதல், இழப்பீடுவழங்குதல் போன்றவற்றைவிளக்குதல் இப்பாடத்தின் நோக்கமாகும்.

அலகு 1

காப்பீடு - இலக்கணம் - இட்பாடு - இன்னல்கள் - இடையூறு-காப்பீட்டின் முக்கியத்துவம் - காப்பீட்டின் கூறுகள் - காப்பீட்டுஒப்பந்தம் - காப்பீட்டுஒப்பந்தத்தின் வகைகள் - காப்பீட்டின் அடிப்படைக் கொள்கைகள் - இரட்டைக் காப்பீடு- மறு காப்பீடு-காப்பீட்டின் பணிகளும், இன்றியமையாமையும்

அலகு 2

ஆயுள் காப்பீடு-பொருள் - ஆயுள் காப்பீட்டுஒப்பந்தத்தின் அடிப்படைக் கூறுகள் - பத்திரங்களின் வகைகள் - முழு ஆயுள் மற்றும் குறித்தகாலக்காப்பீடு-பணம் மீட்டுப் பத்திரம் - காப்பீறுதல்த் தொகைமீட்சியின் அடிப்படையில் பத்திரம் - ஒருவருக்குமேற்பட்டநபர்களுக்குகாப்பீட்டுப் பத்திரம் - இலாபம் இணைந்தபத்திரம் - இலாபம் இணையாபத்திரம் - காப்பீட்டின் பிற வகைகள் - ஆண்டுத் தொகை-பொருள் - ஆண்டுத் தொகைஒப்பந்தம்.

அலகு 3

முனைமம் கணக்கிடுதல் - வகைகள் - இறப்புவிதம் - மதிப்பீடு-நிதிமுதலீடு-முக்கியத்துவம் - முக்கியத்துவம் - முதலீட்டின் கோட்பாடுகள் - ஷூகம் பணம் - மற்றும் அதனைப் பிரித்துக் கொடுத்தல் - ஆயுள் காப்பீடுசெய்யும் முறை-நிபந்தனைகள் - வயதுக்கானஅத்தாட்சி-முனைமம் செலுத்துதல் - சலுகைநாட்கள் - பத்திரம் உரிமை இழத்தல் - பத்திரம் உரிமைமீட்டி-சரண் மதிப்பு

ஆலகு 4

ஆயுள் பத்திரம் எடுப்பதற்குரியசெயல்முறை-முன்மொழிப் பத்திரம் - நடைமுறைஅறிவு-முகவரின் இரகசியஅறிக்கை-மருத்துவப் பரிசோதனை - இந்திய ஆயுள் காப்பீட்டுக் கழகம் - குறிக்கோள்கள் - இந்திய ஆயுள் காப்பீட்டக் கழகத்தின் பங்கு-தனியார் மயமாக்கல் - ஆதரவும்,எதிர்ப்பும் - தற்போதையநிலை

ஆலகு 5

கடல் காப்பீடு - இலக்கணம் - தீகாப்பீட்டின் இயல்புகள் - பலவகை-காப்பீட்டுப் பத்திரங்கள் - காப்பீட்டுஒப்பந்தத்தின் நிபந்தனைகள்

Reference:

1. Mishra M.N, Modern Concepts of Insurance, S.Chand and Co., Ltd., New Delhi, 2009.
2. Alka Singh, Insurance and Risk Management, Sultan Chand & Sons, New Delhi, 2010.

MAJOR COURSES**COM 2504****CORPORATE ACCOUNTING****5 Hrs. / 5 Cr**

Objective: To equip the students with the working knowledge of accounting practices in order in order to prepare for CA, ICWA, and ACS.

UNIT I

Types of companies – Share capital – Types of shares – Issues, Forfeiture and reissue of shares – Issue and Redemption of Debentures and Preference shares.

UNIT II

Profits prior to Incorporation – Underwriting of Shares and rights issues – acquisition of Business by a Company.

UNIT III

Final Accounts of Companies – Preparation and presentation of final accounts of companies – bonus and dividend to shareholders – managerial remuneration – acquisition of business – pre-incorporation profits/loss.

UNIT IV

Amalgamations, Absorption and External Reconstruction – purchase consideration – types of amalgamation – pooling of Interest method – purchase method – treatment of realisation expenses, Internal Reconstruction – types of reconstruction – reduction of share capital – reduction of liabilities – reduction of assets and disposal of balance of reconstruction account – scheme of reconstruction.

UNIT V

Liquidation – Liquidator's final statement of accounts – Accounting standards 14 - 26 – International Financial Reporting System – concepts.

Books for Reference:

1. M.C.Shukla, Advanced Accounting I, Sultan Chand & Sons., New Delhi,2009
2. Mukerjee and Hanif, Advanced Accounting Vol I, Tata McGraw Hill Company Limited, New Delhi,2009
3. S.P.lyengar,Advanced Accounting Vol I, S.Chand& Sons, New Delhi, 2009
4. S.Kr.Paul, Advanced Accountancy Voll,Central Publishing Company, Kolkatta, 2006

CIT 2606

CORPORATE LAWS

6 Hrs. /5Cr

Objective: This course gives orientation to the students in Company Act 1956 and corporate proceedings with 2013 amendments

UNIT I

Company – meaning- types of companies- nature- doctrine of incorporation & commencement of business- lifting of corporate veil- Memorandum of Association and its alteration – Doctrine of Ultra Vires – Articles of Association and its alteration – Doctrines of constructive notice and indoor management - Prospectus – Contents – Rules – Misstatements – liability

UNIT II

Membership in companies – Kinds – Rights and Liabilities – Shares – kinds – Application and allotment of shares - Transfer and Transmission of shares – Share certificate and Share Warrant.

UNIT III

Conduct of meetings- types- appointments-liquidation of companies- provisions as regards alteration of capital.

UNIT IV

Securitisation Act, 2002- NPA and disclosures- NPA management- in banks and insurance- Banking Regulation Act, 1949

UNIT V

Indian Patents Act, 1999- process of obtaining patents- patentable products- Offences- penalties.

Reference:

1. Dr.Tuteja S.K, Business Law for managers, Sultan Chand & Sons, New Delhi, 2006.
2. Kapoor G.K, Lectures on Business & Corporate Laws, Sultan Chand & Sons, New Delhi, 2005.
3. Kuchhal MC, Mercantile Law, Vikas Publishing House Pvt.Ltd., New Delhi, 2004.
4. Praveen, Suggested Answers in Mercantile Law, Sultan Chand & Sons, New Delhi, 2005.

CIT 2408 COMPUTER NETWORKING 4 Hrs. / 4Cr

Objective: To understand the networking concepts and basic communication model, network architectures and components required for data communication.

UNIT I

Network fundamentals: Uses of network- categories of networks- communication model – data transmission concepts and terminology- protocol architecture – protocols – OSI – TCP/IP LAN topology – transmission media.

UNIT II

Data link Layer: Data link control – flow control – error detection and error correction – MAC – Ethernet, token ring wireless LAN MAC- Bluetooth – bridges

UNIT III

Network layer: Network layer – switching concepts – circuit switching- packet switching – IP Data grams – IP addresses – IPV6 – ICMP – routing protocols – distance vector – link state – BGP.

UNIT IV

Transport layer: Transport layer – service – connection establishment –flow control – transmission control protocol – congestion control and avoidance – user data gram protocol – transport for real time applications (RTP)

UNIT V

Applications: Applications – DNS – SMTP – WWW –SNMP- security –threats and services – DES - RSA –web security – SSL

Reference:

1. Larry L Pearson & Bruce S. Davive, "computer Networks"- A Systems Approach", Fourth edition , Harcourt Asia/Morgan Kaufmann, 2007
2. Andrew S. Tannenbaum David J. wetherall, "Computer Networks" Fifth edition , Pearson Education 2011
3. James F. Kurose, Keith W. Ross, " Computer Networking: A Top- down Approach, Pearson Education Ltd, Sixth Edition , 2012

CIT 2410 PROGRAMMING WITH C**4 Hrs. / 4 Credits**

Objective: The objective of this course is to orient students to write programs with C

UNIT I

Overview of C: History of C – Importance of C – Basic structure of C – Programming style – Constants, variables and Data types – declaration of variables, storage class – defining symbolic constants – declaring a variable as constant, volatile – overflow and underflow of data. Operators and expressions: arithmetic, relational, logical, assignment operators – increment and decrement operators, conditional operators, bitwise operators, special operators – arithmetic expression – evaluation of expressions – precedence of arithmetic operators – type conversions in expression – operator precedence and associability – mathematical functions – managing I/O operations: reading and writing a character – formatted input, output.

UNIT II

Decision making and branching: if statement, if... else statement – nesting of if else statement – Else if Ladder – Switch statement – the ?: operator – goto statement. -The While statement – do statement – The for statement – jumps in loops

UNIT III

Arrays: One dimensional array – declaration, initialisation – two dimensional array – multi dimensional array – dynamic arrays – initialisation. Strings: declaration, initialisation of string variables – reading and writing string – arithmetic operations on strings – putting strings together – comparison – string handling function – table of strings – features of string.

UNIT IV

User defined functions: Need – multi function program – elements of user defined function – definition – return values and their types – function calls, declaration, category – all types of arguments and return values – nesting of functions – recursion – passing arrays, strings to functions – scope visibility and life time of variables – multi file programs. Structures and unions: defining a structure – declaring structure variables – accessing structure members – initialisation – copying and comparing – operations on individual members – arrays of structures – arrays within structures – structures within structures – structures and functions – Unions – size of structures – bit fields.

UNIT V

Pointers: Accessing the address of a variable – declaring, initialisation of pointer variables – accessing a variable through its pointer – chain of pointers – pointer expressions – pointer increment and scale factors – pointers and arrays – pointers and character strings – array of pointers – pointers as function arguments – function returning pointers – pointers to functions – pointers and structures. Files: defining, opening, closing a file. I/O operations on files – error handling during I/O operations – random access to file – command line arguments.

Reference:

1. Programming with C (Schaum's Outline Series), Gottfried, Tata McGraw Hill, 2006.
2. E. Balagurusamy, "Programming in ANSI C", Edition 3, Tata McGraw Hill Publishing Company, 2005.

SUPPORTIVE COURSE**CIT 2412****BUSINESS MATHEMATICS****5Hrs/4Cr**

Objective: This course is designed to make aware of commerce students the concepts in business mathematics

UNIT I

Set theory – basic operations, universe of sets, functions, Venn diagrams

UNIT II

Index numbers - meaning, types & uses, methods of constructing price and quantity indices - Fishers Ideal Index Number, Tests of adequacy, Chain-base Index numbers, Base shifting, consumer price index

UNIT III

Analysis of Time series - Causes of variation, components of a time series, Decomposition - additive & multiplicative models, determination of trend - Moving averages, least squares (Linear, Parabolic & Exponential trend), Seasonal Indices - simple averages - ratio to trend, link relative methods

UNIT IV

Theory of Probability - concepts, addition & multiplication laws of probability, conditional probability, Baye's Theorem, Binomial expansion

UNIT V

Theoretical distribution - Binomial, Poisson and Normal Distributions, Test of significance - Chi-square test, T-tests, z- test, F-test & ANOVA

Reference:

1. S C Gupta, V K Kapoor, Mathematical Statistics, Sultan Chand & Sons, 2001
2. Statistical methods, S P Gupta, Sultan Chand & Sons, 2001
3. S Arumugam, & A Thangapandian Isaac, Statistics, New Gamma Publication House, 2004
4. Sanchetti Kapoor, Business Mathematics, Sultan Chand & Sons, New Delhi 2009

**SEMESTER V
MAJOR COURSES**

CIT 3601 COST & MANAGEMENT ACCOUNTING 6Hrs. /6Cr

Objective: The course on Cost Accounting aims at imparting the basic knowledge on cost computation.

UNIT I

Introduction – meaning and scope – objectives and advantages – financial accounting vs. cost accounting – methods of costing – types of costing – elements of cost – expenses excluded from cost – cost sheet – treatment of stock – cost concept – cost classification – Reconciliation of cost and financial accounts.

UNIT II

Materials management: purchase procedure – purchase control – functions of stores department – EOQ – Stock levels – ABC analysis - VED analysis – methods of pricing of material issues - treatment of wastage, scrape, defective and spoilage. Labour management: labour cost – control over labour cost - systems of wage payment - time wage system – piece rate system – premium and bonus plan – group bonus schemes – wage rate – idle time – overtime treatment of wages – computation of earnings.

UNIT III

Overhead – overhead classification – apportionment, basis of apportionment and reapportionment – overhead absorption – absorption rates, Marginal costing: meaning – difference between marginal costing and absorption costing – Break Even analysis - Break Even chart – Application of marginal costing in decision making – C.V.P.analysis.

UNIT IV

Job Costing – batch costing – process costing – services costing – transport costing – contract costing.

UNIT V

Standard costing: meaning – merits and demerits – variance analysis – material, Labour and Overhead variances.

Reference:

1. Arora M N Cost Accounting – Principles and Practice, Vikas Publishing House, Noida, 2004.
2. Maheswari S N, Principles of Cost Accounting, Sultan Chand & Sons, New Delhi, 2003.
3. Arora M N, A Text book of Cost Accountancy, Vikas Publishing House, New Delhi, 2004.
4. Iyengar, S P. Cost Accounting, Sultan Chand & Sons, New Delhi, 2005.

CIT 3603

ASSESSMENT OF INCOME TAX

6Hrs/6Cr

Objective: The course is designed to enable students have a basic understanding of computation of income tax and payment procedures particularly for individuals.

UNIT I

Introduction – definitions- types of persons- residential status.

UNIT II

Computation of income from salaries, house property, income from other sources (important provisions only)

UNIT III

Income tax authorities- their powers and responsibilities

UNIT IV

Procedures of assessment and collection and recovery of tax: Filing of Return and Due Dates
- Forms of returns – assessment – Types of Assessment

UNIT V

Advance payment of Tax – Tax Deducted at Source – Penalties and prosecutions – Refund of excess tax – Appeals and revisions – Permanent Account Number – Tax Planning – E-filing
– Tax Holiday – Direct Taxes Code – concepts.

Reference:

1. Dr. VinodSinghania, Students guide to Income Tax, Taxman Publications, 2006.
2. DinkarPagare, Law and Practice of Income Tax, 26th edition, Sultan Chand & Sons, 2006.
3. Bhagawathi Prasad, Income tax Law and Practice, 29th edition, VishwaPrakashan, 2006.
4. Dr. VinodSinghania, Direct Taxes, Taxman Publications, 2006.

CIT 3605 **Business Data Processing System**

6 Hrs. / 6 Cr

Objective: To expose the students to the concepts of business data processing by using oracle under windows 95/98. Office Automation Tools - MS Word Documenting tools and MS - Excel spreadsheets.

UNIT I

Meaning and purpose of Data processing - Source documents data input data Manipulation - Output of information - data storage -Files and Records - file creation - File access - File manipulation and maintenance - File generation - sequential and Direct file organisation.

UNIT II

Meaning and purpose of windows - menus - Dialog Boxes - File Management under Windows, features of word processing under Windows - Microsoft Word - File Menu - Using Letter wizard for producing business letters - Entering, selecting, inserting, viewing text - Normal view - Page view - Point view - Zooming the view - character and paragraph formatting - Printing a document.

UNIT III

Introduction to spreadsheet - spreadsheet overview - formatting worksheet Data - Relative and absolute Referencing - working with Formula working with Functions - Creating and using Macros - Data Management through worksheets - analysis through charts/graphs - Setting print Styles - Printing worksheets and charts/Graphs.

UNIT IV

Introduction to database - concepts of relational Database Management Applications - Types of Database Models - Network Model Hierarchical Model - RDBMS - ORDBMS.

UNIT V

Introduction to SQL - Parts of SQL-- DML, DDL, DCL and Query Language creating and manipulating tables - Inserting data into tables Restricting and validating Data Entry with Constraints - creating simple reports using oracle Plus Report Manager - Maintaining users and Database Administration - user creation - Roles and Privileges concepts of Front -end Applications - Need for data entry screens - D2k as a front -and tool. Working with D2K forms Designer - forms, Menus, Tool Bars, D2K reports for better Reporting of Data - Master detail reports.

References:

John Shelly and Roger Hunt, Computer Studies : A first course, PHI

1. Guy Hart-Davis, The ABCs of Microsoft office, BPB
2. IvonByross - Developing Commercial Applications using Developer 2000 version 2 (Forms 5 and Reports 3).

CIT 3507

MARKETING RESEARCH

5Hrs. /5Cr

Objective: This course is designed to equip the commerce students to perform a systematic market analysis before the commencement of their business

UNIT I

Introduction - Scope - Importance - Uses and Limitations of Marketing Research - Marketing Research Agencies: Functions - Organisation Structure - Merits and Demerits of Marketing Research Agencies.

UNIT II

Marketing Research Process - Development of marketing research - Marketing research methods: Exploratory - Descriptive - Experimental - Research Designs.

UNIT III

Application of sampling methods - Basic methods of collecting data - Classification and tabulation - Data preparation and processing - Validation - Editing - Coding - Data Processing methods.

UNIT IV

Data Analysis and interpretation - Nature and functions of Statistical analysis - inter-relationship between analysis and interpretation

UNIT V

Research Presentation and research process - Report Writing - Marketing Information Systems - Ethical issues in marketing research.

Reference:

1. Harper W Boyd, Ralph L Westfall and Stanley F Stasch, Marketing Research Text and Cases.
2. David J Luck, Ronald S Rubin, Marketing Research - Prentice Hall of India Pvt Ltd. New Delhi.
3. Sharma D D, Marketing Research Principles, Applications and cases - Sultan Chand and Sons, New Delhi.
4. Philip Kotler, Marketing Management - Prentice Hall of India Pvt Ltd. New Delhi.

LIFE SKILL COURSE

CIT 3209 TOURISM & HOSPITALITY MANAGEMENT 3Hrs. /2Cr

Objective: This course is aimed to motivate the students to start their career with hotel, catering and tourism industries

UNIT I

Introduction to Hotel industry: Hotel industry - introduction and evolution - classification of hotels - types of accommodation - intermediary accommodation, grouping of accommodation, Features: Characteristics of hotels - activities of hotels - accommodation management - front office - housekeeping - bar and restaurant - supporting service - working of hotels - maintenance of equipment - maintenance of Account - Tariffs: Room occupancy rate management - estimation of demand, seasonal pattern of Guest Company - factors affecting the determinations of room rate during seasonal off-season

UNIT II

Functions: Marketing functions at its relevance to Hotel Industry - sales - purchasing - storage system - industry levels - ordering levels - costing - recipe costing - menu pricing - hotel security.

UNIT III

Housekeeping: An overview of the position of H/K in the Hospitality Industry, List of functions of the H/K Dept. - Organisation of the Hotel, Staff Hierarchy, lines of Authority & areas of responsibility - Vertical & horizontal coordination within & outside the Dept. - Areas of responsibility of the H/K Dept. - Essential qualities in H/K staff, Effective communications skills, interpersonal skills & good grooming standards - Duties of staff at the managerial level, Duties of staff at the Operational level - Duties of staff at the supervisory level

UNIT IV

Tourism: Concepts: Definitions and Historical development of tourism, Distinction between Tourist-Traveller-Visitor-Excursionist. Types and Forms of Tourism; Tourism system: Nature, characteristic - Components of tourism and its characteristics, Domestic tourism - features, pattern of growth, profile, International tourism - Generating and Destination regions, Pattern of growth and Profile

UNIT V

Tourism Demand and Supply - Introduction to Tourism Demand; Determinants of tourism demands, Motivation and tourism demand; Measuring the tourism demand. Tourism Statistics (National and International), Emerging Trends and new thrust areas of Indian tourism - Tourism Impacts: Impacts: Positive and Negative Impacts of Tourism; Socio-Cultural, Economic, Environmental and Political - Status of Tourism in India, Tourist Attractions, Transport, Accommodation, Shopping, Entertainment, Hospitality, Airlines, Travel agencies, Tourism declared as an Industry in India, consequences of Industry status

Reference:

1. Andrews, Sudhir, Hotel Front Office Training Manual, The Tata M'cGraw Hill, New Delhi, 1995
2. Andrews, Sudhir, Front Office Management & Operations, The Tata M'cGraw Hill, New Delhi, 2007
3. Aggarwal Ravi, Hotel front Office, Sublime Publications, Jaipur, 2002
4. TewariJatashankar R., (2009), Hotel Front Office Operations & Management, Oxford University Press, New Delhi.
5. Mill and Morrison, The Tourism system an Introductory Text, Prentice Hall, 1992
6. P.C. Sinha, Tourism Evolution Scope Nature & Organization, Anmol Publication 2003
7. A.K .Bhatia, Tourism and Development, Sterling Publishers, New Delhi, 2007

SEMESTER VI**MAJOR COURSES**

CIT 3602 FINANCIAL MANAGEMENT & CONTROL 6Hrs. /6Cr

Objective: This course envisions the students to understand the business performance appraisal in terms of finance.

UNIT I

Introduction- goals of firms- traditional and modern approach- functions of finance manager-

UNIT II

Cost of Capital- components- types- computation of cost of debt, equity, preference shares, retained earnings

UNIT III

Capital structure- theories and importance of theories- application of theoretical concepts

UNIT IV

Dividend decisions – relevance and irrelevance approaches

UNIT V

Cash management, receivables management and inventory management

Reference:

1. Financial Management, S.N. Maheswari, Sultan Chand & Sons, New Delhi, 2009
2. Financial Management, Khan and Jain, Tata McGraw Hill Publications, New Delhi, 2008
3. Financial Management, Vohra, Prentice Hall Publications, New Delhi, 2010
4. Financial Management, Prasanna Chandra, Tata McGraw Hill Publications, New Delhi, 2009.

CIT 3604 INVESTMENT MANAGEMENT 6 Hrs. / 6 Credits

Objective: This course is framed to provide better understanding of investments and to gain comprehensive knowledge of security markets.

UNIT I

Investment: Meaning of investment-definition of investment-nature of investment-need of investment-investment environment-scope of investment-speculation, gambling-investment principles-investment process,

UNIT II

Investment avenues: features of equity shares, preference shares and its types-bonds and its various types-features-innovative financial instruments-convertible debentures and warrants-characteristics-zero coupon bonds-deep discount bonds-secured premium notes-post office saving schemes-LIC policies-mutual funds.

UNIT III

Return: historical vs. expected risk-computation of historical & expected return of stock-current yield, Investment risks: Systematic risk-market risk-interest rate risk-purchasing power risk-unsystematic risk-business risk-financial risk

UNIT IV

Securities market: New issue market-Organisation structure of NIM 36- functions of NIM-Mechanics of floating new issue-secondary stock market-definition of stock exchange-function of stock exchange market-Organisation of stock exchanges in India-mechanics of security trading in stock exchange-stock market indices-NSE index,BSE index

UNIT V

Listing of securities: scope-objectives of listing-advantages of listing-disadvantages of listing, Security dealings and government: securities contracts (Regulation) Act 1956- Securities and exchange board of India (SEBI).

Reference:

1. Dr. Mrs. PunithavathyPandian, Security analysis and portfolio management, Vikas Publishers, New Delhi, 2003
2. Dr. Preethisingh, Investment management-Himalaya Publishing House, New Delhi, 2003
3. Fischer and Jordan, Security Analysis and Portfolio Management-Prentice Hall India Ltd, New Delhi, 2002
4. Alexander and Bailey, Investments-prentice hall of India Ltd, New Delhi, 2004
5. Avadani, Himalaya Publishing House-Investment Management, 2003.
6. Kevin, Security Analysis and Portfolio Management, Prentice Hall of India Pvt Ltd, 2006.

CIT 3606**DOT NET PROGRAMMING****6 Hrs. / 6 cr**

Objective: This course is being offered to make the students to understand the goals and objectives of the .NET Framework and to improve the programming skill.

UNIT I

Introduction to .NET framework - Managed Code and the CLR- Intermediate Language, Metadata and JIT Compilation - Automatic Memory Management, Language Concepts and the CLR - Visual Studio .NET - Using the .NET Framework, The Framework Class Library - .NET objects - ASP .NET - .NET web services - Windows Forms

UNIT II

Elements - Variables and constants - data types - declaration. Operators - types - precedence. Expressions. Program flow - Decision statements - if ..then, if..then..else, select..case- Loop statements - while..end while, do..loop, for..next, for..each..next, Types - Value data types - Structures, Enumerations. Reference data types- Single-dimensional - Multi-dimensional arrays - jagged arrays - dynamic arrays, Windows programming - Creating windows Forms - windows controls - Button, Check box, Combo box, Label, List box, Radio Button, Text box. Events - Click, close, Deactivate, Load, Mouse move, Mouse down, Mouse Up, Menus and Dialog Boxes - Creating menus - menu items - context menu - Using dialog boxes - show Dialog() method

UNIT - III

Features of ADO.NET - Architecture of ADO.NET - ADO.NET providers - Connection - Command - Data Adapter - Dataset, **Accessing Data with ADO.NET** - Connecting to Data Source, Accessing Data with Data set and Data Reader - Create an ADO.NET application - Using Stored Procedures.

UNIT IV

ASP.NET Features - Change the Home Directory in IIS - Add a Virtual Directory in IIS- Set a Default Document for IIS - Change Log File Properties for IIS - Stop, Start, or Pause a Web Site, Creating Web Controls - Web Controls - HTML Controls, Using Intrinsic Controls, Using Input Validation Controls, Selecting Controls for Applications - Adding web controls to a Page, Creating Web Forms - Server Controls - Types of Server Controls - Adding ASP.NET Code to a Page.

UNIT V

Overview of XML - XML Serialization in the .NET Framework -SOAP Fundamentals-Using SOAP with the .NET Framework, **Introduction to web services** - Web Services protocol and standards - WSDL Documents - Overview of UDDI - Calling a Web Service from a Browser - Calling a Web Service by Using a Proxy - Creating a simple web service - Creating and Calling a Web Service by Using Visual Studio .NET.

Reference:

1. Introduction to Visual basic.NET - NIIT Prentice Hall of India,2005
2. Introducing Microsoft .NET- David S. Platt Microsoft Press", Saarc Edition, 2001
3. Introduction to Microsoft® ASP.NET Work Book - Microsoft- Microsoft Press
4. Developing XML Web Services Using Microsoft® ASP.NET -Microsoft- Microsoft Press
5. Designing Microsoft ASP.NET Applications-Douglas J. Reilly-Microsoft Press
6. ASP.NET-Danny Ryan and Tommy Ryan-Hungry Minds Maran Graphics

CIT 3508

PROJECT WORK

5 Credits

Objective: This course would create interest in the minds of students to undergo the research in Commerce with mobile or computer application.

Conduct of Project: After the successful completion of the course the student would realize the importance of research.

1. Commerce /Mobile / Computer Application Based Projects are permitted.
2. Individual Project under a Supervisor / Guide.
3. Student has to carry out the project during VI semester.
4. Viva-voce will be conducted at the end of the VI semester.
5. The Project Report Evaluation and Viva- Voce Examination will carried out Jointly by internal examiner (Supervisor / Guide) and external examiner

Distribution of Marks:

Continuous Evaluation by the guide	:	100 Marks
<u>Project Report Evaluation</u>		
Joint by internal (Guide) & External Examiner	:	60 Marks
Viva-Voce Examination	:	<u>40 Marks</u>
Total	:	<u>200 Marks</u>
Final Marks to be averaged to 100		

CIT 3210 INTERNATIONAL MARKETING

3 Hrs. / 2 Cr

Objective: The paper aims at making the student understand the concept and techniques of international marketing and train them to develop and implement plans and marketing strategies for entering into international markets and managing overseas operations.

UNIT I

International Marketing Scope and Significance of International Marketing, the strategic importance of international marketing, Differences between international and domestic marketing. Need for international trade, trends in foreign trade.

UNIT II

International market environment: International environment, International Social & culture Environment, the political legal environment and regulatory environment of international marketing. Technological Environment, Business Customs in International Market, international market segmentation, Foreign Direct Investment

UNIT III

International product management: International product positioning, International product life cycle, New products in Intentional Marketing, Product and culture, brands in International Market, International Marketing Channels: Factors effecting Choice of

Channels, Selecting Foreign Country Market intermediaries. The management of physical distribution of goods.

UNIT IV

Pricing and Promotion for international Markets: Environmental influences on Pricing Decisions, Grey Market goods, Transfer pricing, Global Pricing - Policy Alternatives. Global Advertising and brandy, selecting an advertising agency. Personal selling, Sales Promotion, Public Relations and Publicity, Sponsorship Promotion.

UNIT V

Export Marketing: Introduction to Export Marketing, Export Policy Decisions of a firm, EXIM policy of India. Export costing and pricing, Export procedures and export documentation. Export assistance and incentives in India.

Reference

1. Philip R. Cateora, John L. Graham, International Marketing 11/e, Tata McGraw-Hill Co. Ltd., 2002.
2. SakOnkvisit, John J. Shaw, International Marketing Analysis and Strategy, 3/e, Prentice-Hall of India Pvt. Ltd., 2000.
3. Bhattacharya, B., Export Marketing Strategies for Success, Global Business Press, New Delhi, 1991
4. Fair Weather, John International Marketing, Prentice Hall of India Private Ltd., New Delhi.
5. Isobel Doole and Robin Lowe, International Marketing Strategy, 2/e, Thomson Learning, 2003.
6. Subhash C. Jain, International Marketing, 6/e, South-Western, 2001.
7. Vern Terpstra, Ravi Sarathy, International Marketing, 8/e, Harcourt Asia Pvt. Ltd., 2001.
8. Keegan: Global marketing Management 7/e Pearson Education, Delhi, 2003.

COM 3200 ENVIRONMENTAL STUDIES

4 Hrs. /2 Credits

Objective: This course facilitates the students to get adequate knowledge on environmental problems and to develop an attitude towards the betterment of environment.

UNIT I

Multidisciplinary nature of environmental studies: Definition, scope and importance & Need for public awareness, Natural Resources: Renewable and non-renewable resources - Natural resources and associated problems - Forest resources: Use and over-exploitation, deforestation, case studies - Timber extraction, mining, dams and their effects on forest and tribal people - water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies -

Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies - Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies - Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification - Role of an individual in conservation of natural resources - Equitable use of resources for sustainable lifestyles.

UNIT II

Ecosystems: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers - Energy flow in the ecosystem - Ecological succession - Food chains, food webs and ecological pyramids - Introduction, types, characteristic features, structure and function of the Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries), Biodiversity and its conservation - Introduction - Definition: genetic, species and ecosystem diversity, Biogeographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels, India as a mega-diversity nation, Hot-spots of biodiversity - Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India - Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

UNIT III

Environmental Pollution: Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards, Solid waste Management: Causes, effects and control measures of urban and industrial wastes - Role of an individual in prevention of pollution - Pollution case studies - Disaster management: floods, earthquake, cyclone and landslides

UNIT IV

Social Issues and the Environment - From Unsustainable to Sustainable development - Urban problems related to energy - Water conservation, rain water harvesting, watershed management - Resettlement and rehabilitation of people; its problems and concerns. Case Studies - Environmental ethics: Issues and possible solutions - Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies - Wasteland reclamation, Consumerism and waste products, Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness.

UNIT V

Human Population and the Environment: Population growth, variation among nations, Population explosion - Family Welfare Programme, Visit to a local area to document environmental assets river/forest/grassland/hill/mountain - Visit to a local polluted site-

Urban/Rural/Industrial/Agricultural - Study of common plants, insects, birds - Study of simple ecosystems-pond, river, hill slopes, etc.

Reference:

1. http://collegesat.du.ac.in/UG/Envinromental%20Studies_ebook.pdf
2. Sankaran s., Environmental Economics, Margham publication, Chennai, 1998.
3. Franciescherunellum "Business environment" Himalaya publishing, 2004.
4. S.P. Gupta, "Environmental Issues for the 21st century led., Mittal Publications. New Delhi. 2003
5. E.El. Hinnawi& A.K Piswas, "Renewable sources of Energy and the Environment, Tycooly international publishing co., 1981
6. Subramanian N.S and Sambamoorthy A.V "Ecology", Narosa Publishing House, New Delhi, 2000.



THE AMERICAN COLLEGE
Department of Business Administration
COURSE STRUCTURE – 2015-16 onwards

Semester	Part	Course Code	Course Title	Hours	Credit
I	I	TAM/FRE/HIN	Tamil/ French/ Hindi	3	2
	II	ENS 1201	Conversational Skills	3	2
	IIIC	BBA1431	Principles of Management	4	4
	IIIC	BBA1425	Financial Accounting - I	4	4
	IIIC	BBA1525	Corporate Communication	5	5
	LS1	BBA1221	Personality Development	3	2
	NME	BBA1229	Banking Law and Practice	3	2
	SUPPO	BBA1447	Business Statistics	5	4
II	I	TAM/FRE/HIN	Tamil/ French/ Hindi	3	2
	II	ENS 1202	Reading & Writing Skills	3	2
	IIIC	BBA1430	Financial Accounting - II	4	4
	IIIC	BBA1432	Business Environment	4	4
	IIIC	BBA1544	Marketing Management	5	5
	LS2	BBA1226	Entrepreneurial Skills	3	2
	NME	BBA1224	Foundations of Management	3	2
	SUPPO	BBA1426	Advertising and Salesmanship	5	4
	V	XXXxxxx	Ext. Activity NSS/PED/SLP		1
III	I	TAM/FRE/HIN	Tamil/ French/ Hindi	3	2
	II	ENS 2201	Study Skills	3	2
	IIIC	BBA2437	Organizational Behaviour	4	4
	IIIC	BBA2543	Human Resource Management	5	5
	IIIC	BBA2545	Quantitative Techniques	5	5
	IIIC	BBA2527	Portfolio Management	5	5
	SUPPO	BBA2441	Business Law	5	4
	V	XXXxxxx	Ext. Activity NSS/PED/SLP		1
IV	I	TAM/FRE/HIN	Tamil/ French/ Hindi	3	2
	II	ENS 2202	Career Skills	3	2
	IIIC	BBA2428	Production Management	4	4
	IIIC	BBA2542	Industrial Relations	5	5
	IIIC	BBA2554	Entrepreneurial Development	5	5
	IIIC	BBA2556	Financial Services	5	5
	SUPPO	BBA2420	Total Quality Management	5	4
	V	XXXxxxx	Ext. Activity NSS/PED/SLP		1
V	LS3	BBA3223	Business Organisation	3	2
	VAL	VALxxxx	Value Education	4	2
	IIIC	BBA3625	Management Information System	6	6
	IIIC	BBA3627	Cost Accounting	6	6
	IIIC	BBA3631	Marketing Research	6	6
	IIIC	BBA3525	International Marketing	5	5
VI	LS4	BBA3260	Organisational Leadership	3	2
	EVS	BBA3200	Environmental Studies	4	2
	IIIC	BBA3650	Strategic Management	6	6
	IIIC	BBA3644	Management Accounting	6	6
	IIIC	BBA3628	Logistics Management	6	6
	IIIC	BBA3550	Retail Management	5	5

PRINCIPLES OF MANAGEMENT**BBA 1431****4Hrs / 4 Cr**

Objective: To make the students to have a clear understanding of the managerial functions like Planning, Organizing, Staffing, Directing and Controlling. Students will also gain some basic knowledge on functioning aspect of management.

UNIT – I

Management: Meaning - Definition- Features – Importance - Functions of Management - Administration Vs Management; Management: Art- Science - Profession – Role of Manager - Contributions of F.W Taylor - Henry Fayol - Elton Mayo and Peter. F. Drucker.

UNIT - II

Planning: Definition - Characteristics – Objectives – Importance - Planning Process; Types of Plans – Advantages of Planning – Concept of MBO. Business Forecasting: Definition and Methods of Forecasting; Decision Making: Nature - Importance and Steps in Decision Making– Types of Decisions.

UNIT - III

Organisation: Meaning – Definition – Functions – Importance - Principles of Organisation – Classification of Organisation – Delegation of Authority and Decentralisation– Responsibility – Departmentation. Span of Management: Meaning – Factors Affecting Span of Management.

UNIT – IV

Staffing: Definition – Elements – Functions - Process of Staffing – Recruitment – Selection - Training and Development; Directing: Definition -Principles of Directing;Motivation: Meaning -Nature -Importance – Types of Motivation; Leadership:Definition– Importance – Functions of a Leader.

UNIT – V

Controlling: Definition- Control Process – Requisites of Effective Control System; Controlling Techniques: Advantages and Limitations of Controlling;Co-ordination:Definition - Need and Importance – Types – Problems of Coordination.

Text Book:

T. Ramasamy, Principles of Management, Himalaya Publishing House, New Delhi 2013.

Reference Books:

1. J. Jeyasankar, Principles of Management, Margham Publications, Chennai, 2011.
2. Deepak Kumar Battacharya, Principles of Management – Text and Cases, Pearson, New Delhi, 2012.
3. L. M. Prasad, Principles and Practice of Management, Sultan Chand and Sons, New Delhi, 2013.
4. JAF Stomer, Freeman R. E and Daniel R Gilbert, Management, Pearson Education, 2009.

FINANCIAL ACCOUNTING - I

BBA 1425

4 Hrs / 4 Cr

Objective: This course is designed to impart the knowledge on accounting information system to students and to analyze future performance of companies and making financial decision.

UNIT - I

Introduction to Accounting – Definitions - Nature and Scope of Accounting – Objectives of Accounting – Functions of Accounting – Book Keeping – Advantages – Limitations – Basis of Accounting.

UNIT - II

Accounting Principles – Accounting Concepts – Conventions – Accounting Policies – Accounting Cycles – Capital and Revenue Receipts – Concepts and Classifications of Assets and Liabilities – Accounting Equations – Double Entry System Vs Single Entry System.

UNIT - III

Journal – Golden Rules of Accounting - Journalizing the Transactions – Trade Discounts – Cash Discounts – Source Documents.

UNIT - IV

Preparation of Journal Book. Ledger – Posting of Ledgers – Balancing – Balancing the Accounts – Difference between Journal and Ledger.

UNIT - V

Trial Balance Objectives – Limitations – Practical System of Accounting – Cash Book – Single, Double and Triple Column Cash Book – Subsidiary Books – Account Current – Bills of Exchange.

Text Book:

Jain and Narang , Financial Accounting , Volume I, Kalyani Publishers, New Delhi, 2013.

Reference Books:

1. Bretner and Antony , Core Concepts of Accounting, Pearson Publishers, New Delhi-110 017, 2012.
2. Mukerjee and Hanif , Financial Accounting, Tata Mc Garaw Hill Publishing Company, New Delhi, 2013.
3. T.S. Agarwal, Financial Accounting, S. Chand Publishers, New Delhi – 110 055, 2013.
4. S.P. Iyengar, Financial Accounting, Kalyani Publishers, New Delhi, 2013.

CORPORATE COMMUNICATION

BBA 1525

5 Hrs / 5 Cr

Objective: The prime objective of this course is to provide an exposure to the corporate / business communication networks, ethics and practices for the students.

UNIT - I

Nature and Scope of Communication: Functions – Basics – Network - Types; Verbal and Non-Verbal Communication – Barriers of Communication; Listening: Feedback; Conversations: Types – Essential – Management of Conversations – Non-Verbal Cues in Conversation.

UNIT - II

Business Writing: Written Communication – The Seven C's of Business Letter Writing – Basic Principles – Components of Business Letters – Strategies for Writing the Body of a Letter – Kinds of Letters – Memos.

UNIT - III

Report Writing: Significance – Purpose – Steps in Writing a Business Report – Parts of a Report – Corporate Reports; Proposals: Business Proposals – Formats – Layout and Design – Key Elements of writing Business Proposals.

UNIT - IV

Group Discussions and Team Presentations: Methodology – Guidelines - Functions and Team Presentations; Meetings and Conferences: Introduction - Planning a Meeting – Conference – Proceedings - Minutes and Evaluation.

UNIT - V

Presentation Skills: Use of Aids - Public Speaking - Practice Presentation - Communication; Ethics in Business Communication: Ethics - Values - Professionalism in Communication - Corporate Ethics - Computer Ethics - Ethics in Internet and Advertising.

Text book

Raman, M & Singh, P - Business Communication, Oxford University Press, 2010.

Reference Books

1. Kaul, Asha - Effective Business Communication, Prentice Hall, 2010
2. Rizvi, M. Ashraf - Effective Technical Communication, Tata McGraw Hill, 2011
3. Taylor, Shirley - Communication for Business, Pearson Education, 2010
4. Blundell J. A & Middle N. M. G.: Career – English for the Business and Commercial World, Oxford University Press, 2009

PERSONALITY DEVELOPMENT

BBA 1221

3Hrs / 2 Cr

Objective: The objective of this course is to provide an exposure to the students regarding the skills required for the corporate world that would enhance one's employability.

UNIT - I

Individual Behaviour: Factors - Characteristics and Models; Personality: Definition - Dimensions - Theories - Types and Determinants of Personality; Perception: Nature - Importance - Process - Factors and Barriers Towards Perception.

UNIT - II

Attitude: Nature - Components - Functions - Barriers and Types of Attitude; Values: Characteristics - Sources - Importance and Types of Values;

UNIT - III

Goal Setting: Meaning - Importance - Stages - Types of Goals; Leadership: Definition-Functions - Characteristics - Styles and Theories of Leadership.

UNIT - IV

Learning and Behaviour Modification: Nature and Theories of Learning - Shaping and Reinforcement of Behaviour;

UNIT - V

Team Development: Introduction - Definition - Difference between Work Group and Work Team - Characteristics of Effective Team - Team Objective - Importance - Role of Team Leader.

Text book:

K. Aswathappa, Organisational Behaviour, Himalaya Publishing House, New Delhi, 2012.

Reference Books:

1. Machakkalai, Saraswathi, Personality Development - a Need, Mangai Publishers, 2010.
2. Alex, Soft Skills, Sultan Chand & Sons, New Delhi, 2012.
3. N.M. Khandelwal, Executive Excellence, Himalaya Publishing House, New Delhi, 2008.
4. Rathan Reddy, Knowledge Management, Himalaya Publishing House, New Delhi, 2011.

BANKING LAW AND PRACTICE

BBA 1229

3Hrs / 2 Cr

Objective: To acquaint the students with the theoretical and legal concepts of banking services operations, innovations and recent developments of various banking systems in India.

UNIT - I

Banker and Customer: Origin of Banking – Banker – Customer – Relationship between Banker and Customer: General Relationship and Special Relationship.

UNIT - II

Classification of Banks – Banking System and its Advantages and Disadvantages, Special Types of Customers. Banker as a Holder for Value – Banker as an Agent;

UNIT - III

Pass Book: Entry Favourable to the Customer – Entry Favourable to the Banker; Deposits: General Precautions for Opening an Account – Current Deposit Account – Fixed Deposit Account – Savings Deposit Account – Insurance Linked Savings Bank Account – Recurring Deposit.

UNIT - IV

Cheque: Definition, Salient features of Cheque – Proper Printed Form – Special Printed Forms – Cheque vs Draft – Drawing up of a Cheque – Banker's Cheque – Crossing of Cheques. Precautions before Honouring a Cheque – Circumstances Under which a Cheque can be dishonoured. Duties of a Collecting Banker.

UNIT – V

E-Banking: Traditional Banking Vs. E-Banking– Electronic Delivery Channels – Merits of E-Banking Transactions – Security Measures.

Text Book:

E.Gordon and Natarajan, "Banking Theory, Law and Practice", Himalaya Publishing House, Mumbai, 2013.

Reference Books:

1. Dr.P.K.Srivastava, "Banking Theory & Practice", Himalaya Publishing House, Mumbai, 2013
2. Dr.S.Gurusamy, "Banking Theory, Law and Practice", Vijay Nicole Imprints Private Limited, Chennai, 2010.
3. P.N.Varshney, S.L.Gupta and T.D.Malhotra, "Principles of Banking", Sultan Chand & Sons, New Delhi, 2010.
4. Subbarao & Kanna, Principles and Practice of Bank Management, Himalaya Publishing House, Mumbai, 2010.

BUSINESS STATISTICS

BBA 1447

5 Hrs/4 Cr

Objective: This course is designed to acquire a feel for the statistical way of thinking and to provide the students with the basic concepts and methods of statistical analysis for managerial decision making. This course also helps the students in statistical thinking which is embedded in management thinking for decision making under uncertainties.

UNIT - I

Business Statistics: Introduction – Definition - Nature And Scope – Objectives – Importance – Functions Of Statistics – Limitations – Uses of Statistics in Various Fields.

UNIT -II

Statistical Survey – Execution of Survey – Collection of Data – Sampling Design – Classification of Data – Tabulation – Diagrammatic Presentation – Graphical Presentation. Measures Of Central Tendency – Arithmetic Mean – Median – Mode – Geometric Mean – Harmonic Mean – Percentile – Combined Mean – Weighted Mean.

UNIT - III

Measures Of Dispersion – Range – Quartile Deviation – Mean Deviation – Standard Deviation - Variance- Coefficient Of Variation – Combined Standard Deviation.

UNIT - IV

Skewness – Correlation Analysis – Types of Correlation – Karl Pearson's Coefficient of Correlation – Spearman's Rank Correlation – Concurrent Deviation – Coefficient of Determination.

UNIT - V

Regression Analysis – Business Applications Of Regression Analysis – Index Numbers – Uses – Methods of Calculation of Index Numbers – Analysis of Time Series.

Text Book:

R.S.N. Pillai & V. Bhavathi, Business Statistics, S. Chand Publishers, New Delhi – 110 055, 2012.

Reference Books:

1. Dr. Agarwal, Business Statistics, Virinda Publications P Limited, New Delhi – 110 051, 2012.
2. Richard Lewis and David Rubin, Statistics for Management, Prentice hall of India, New Delhi – 110 002, 2012.
3. S.C. Gupta and V.K. Kapoor, Foundations of mathematical Statistics, S. Chand Publishers, New Delhi – 110 055, 2012.
4. S.P. Gupta, Statistical Methods, Sulthan Chand Publications, New Delhi – 110 002, 2012.

FINANCIAL ACCOUNTING - II

BBA 1430

4 Hrs / 4 Cr

Objective: The goal of teaching this course to students is to apply critical thinking skills on various elements of accounting issues, analyze the information on the accounting problems using appropriate frame work and derive relevant conclusions on accounting problems.

UNIT - I

Final Statements of Accounts – Preparation of Final Accounts – Trading Account – Profit and Loss Account – Balance Sheet – Final Accounts with Adjustments – Final Accounts of Partnership Firm.

UNIT - II

Depreciation Accounting – Provisions and Reserves – Causes of Depreciation – Methods of Depreciation – Types of Provision and Nature of Reserve.

UNIT - III

Accounting for Consignment – Entries for Consignment – Accounting for Joint Ventures; Accounting from Incomplete Records –

UNIT – IV

Single Entry System – Classifications – Ascertainment of Profit or Loss – Limitations.

UNIT - V

Self Balancing Ledger – General Ledgers and Special Ledgers – Sectional Balancing System – Advantages – Transfer between Subsidiary Ledgers.

Text Book:

Jain and Narang, Financial Accounting, Volume I and Volume II, Kalyani Publishers, New Delhi –2013.

Reference Books:

1. Mukerjee and Hanifm, Financial Accounting, Tata McGaraw Hill Publishing Company, New Delhi 2013.
2. T.S.Grewal, Introduction to Accounting S. Chand Publishers, New Delhi – 110 055, 2013.
3. S. P. Iyengar, Financial Accounting, Kalyani Publishers, New Delhi – 2013.
4. Gabriel and Marcus, Financial Accounting, Tata McGaraw Hill Publishing Company, New Delhi 2013

BUSINESS ENVIRONMENT

BBA 1432

4 Hrs / 4Cr

Objective: This course is framed to give the students an exposure to the dynamics of business environment and enable them to analyze business priorities in the changing environmental conditions.

UNIT - I

Business Environment: Types of Environment - Internal and External Environment; Competitive Structure of Industries; Competitor Analysis – Nature, Scope and objectives of Business; Environmental analysis and forecasting.

UNIT - II

Economic Environment: Nature of the Economy - Structure of the Economy - Economic Policies -Economic Conditions; Monetary and Fiscal Policies. Political Environment; Government and Legal Environment; Natural and Technological Environments; Demographic Environment;

UNIT - III

Societal Environment of Business: Objectives and Importance of Business – Professionalization - Business Ethics - Business and Culture – Culture and Organizational Behavior; Social Responsibilities: classical and contemporary views- Factors Affecting Social Orientation.

UNIT – IV

Social Audit; Consumerism and Business: Consumer rights- exploitation- Consumerism-consumer protection- consumerism in India- consumer Protection Act; Global Environment: GATT/WTO and Global Liberalisation

UNIT - V

Globalisation: Meaning and Dimensions - Features of Current Globalisation - Globalisation Stages - Essential Conditions for Globalisation - Globalisation of Indian Business; Regulations of Foreign Trade; Foreign Exchange Management Act.

Text Book:

Francis Cherunilam, Business Environment, Himalaya Publications, 12th Edition New Delhi, 2013.

Reference Books:

1. Adhikari M, Economic Environment of Business, S Chand Publications, 2010.
2. Ghosh, Economic Environment of Business, Vikas Publishers, 2009
3. K. Aswathappa, Essentials of Business Environment, Himalaya Publications, New Delhi, 2010.
4. Mukesh Trehan, Business Environment, FK Publications, New Delhi 2008.

MARKETING MANAGEMENT**BBA 1544****5 Hrs / 5 Cr**

Objective: To help students to understand the concept of marketing and its applications and to expose the students to the latest trends in marketing.

UNIT - I

Market: Introduction – Evolution-Meaning -Definition-Classifications- Marketing: Features - Object - Importance -Marketing and Merchandising-Marketing and Selling-Marketing and Distribution-Marketing and Business -Modern Marketing-Role of Marketing in Economic Development.

UNIT - II

Product: Meaning-Features - Classification - Policies- Planning and Development-Product Line-Product Mix-Expansion of Product Mix-Contraction of Product Mix-Alteration of Existing Products-Positioning the Product- Product Differentiation and Market Segmentation-Innovation; New Product: Life Cycle- Planning –Product Diversification-Product Elimination-Product Modification-Product Failure.

UNIT - III

Pricing: Meaning-Importance - Objectives-Factors Affecting Pricing Decisions-Procedure for Price Determination-Kinds of Pricing-Price Differentials-Price Leader-Factors Affecting Price-Resale Price maintenance.

UNIT - IV

Branding: Brand – Branding-Reasons for Branding- Brand Name-Conditions Favorable to Branding-Brand Mark – Functions – Features-Types of Brand-Advantages to Producer-Advantages to Consumer-Trade Mark; Packaging: Definition – Growth – Features – Characteristics – Types – Decisions – Labeling – Types – Functions – Advantages – Disadvantages; Channels of Distribution: Definition – Importance -Types - Integrated Channel- Marketing Considerations.

UNIT - V

E-Business: Introduction – Telemarketing - Automatic Vending - E-Business - E-Commerce -Electronic Data Interchange -E-Mail – Internet - E-Auctioning - E-Marketing - E-Trading; Green Marketing; Mega Marketing; Multi Level Marketing.

Text Book:

R. S. N. Pillai and Bagavathi, Modern Marketing, S. Chand Ltd, New Delhi, 2010.

Reference Books:

1. Philip Kotler, "Marketing Management: Analysis, Planning, Implementations and Control", Pearson Education, New Delhi, 2010.
2. Stanton William J., "Fundamentals of Marketing", McGraw Hill, New Delhi 10th Edition, 2010.
3. V. S. Ramaswamy and S. Namakumari, Marketing Management, MacMillan Publication, New Delhi, 4th Edition, 2009.
4. S. A. Sherlekar and K.Nirmala Prasad, Principles of Marketing, Himalaya Publication House, New Delhi, 2011.

ENTREPRENEURIAL SKILLS

BBA 1226

3 Hrs / 2 Cr

Objective: The basic objective of this course is to provide fundamental knowledge about Entrepreneurship development among students.

UNIT - I

Entrepreneur: Concept - Distinction between entrepreneur and manager - entrepreneurial competencies or traits - functions - types; women entrepreneurs.

UNIT - II

Entrepreneurship: concept - nature and characteristics; Role of entrepreneurship in economic development.

UNIT - III

Establishing Entrepreneurial Systems: Business Idea - Idea Processing - selection of idea - input requirements - Personnel - Finance - Information and Intelligence - rewards and motivation.

UNIT - IV

Establishing Small Enterprise: Start-up Process - Project Identification and classification - Project Formulation.

UNIT - V

Project Feasibility and Preparation of Project report; Risk Analysis - Selection - Legal Considerations and Problems

Text Books:

1. Dr. C.B Gupta & Dr. S.S Khanaka, Entrepreneurship and Small Business Management, Sultan Chand & Sons, New Delhi-2010
2. Dr. C.B Gupta & Dr. N.P. Srinivasan, Entrepreneurship Development in India, Sultan Chand & Sons, New Delhi-2010

Reference Books:

1. Holt, Entrepreneurship: New Venture Creation, Prentice-Hall, 2008.
2. R. V Badi & A. V Badi, Entrepreneurship, Vrinda Publication (p) Ltd, New Delhi 2010.
3. K. Ramachandran, Entrepreneurship Development, Tata McGraw Hill, New Delhi, 2008.
4. S. Anil Kumar, Entrepreneurship Development, New Age International, New Delhi, 2009.
5. Dr. Radha, Entrepreneurial Development, Prasanna and Co, Chennai. 2009

FOUNDATIONS OF MANAGEMENT

BBA 1224

3Hrs / 2 Cr

Objective: To make the students gain some basic knowledge on functioning aspect of management and to have a clear understanding of the managerial functions like Planning, Organizing, Staffing, Directing and Controlling.

UNIT – I

Management: Meaning - Definition- Features – Importance - Functions of Management; Planning: Definition - Characteristics – Objectives - Importance.

UNIT – II

Planning Process – Types of Plans – Advantages of Planning; Organisation: Meaning – Definition – Functions – Importance - Principles of Organisation – Classification of Organization.

UNIT – III

Staffing: Definition – Elements – Functions – Staffing Process – Recruitment-Selection - Training and Development. Directing: Definition - Principles of Directing.

UNIT – IV

Motivation: Meaning -Nature -Importance – Types of Motivation; Leadership: Definition-Importance – Functions of a Leader.

UNIT – V

Controlling: Definition- Control Process – Requisites of Effective Control System; Advantages and Limitations of Controlling; Co-ordination: Definition - Need and Importance – Types – Problems of Co-ordination.

Text Book:

T. Ramasamy, Principles of Management, Himalaya Publishing House, New Delhi, 2013.

Reference Books:

1. J.Jeyasankar, Principles of Management, Margham Publications, Chennai, 2011.
2. Deepak Kumar Battacharya, Principles of Management – Text and Cases, Pearson, New Delhi, 2012.
3. L.M.Prasad, Principles and Practice of Management, Sultan Chand and Sons, New Delhi, 2013.
4. JAF Stomer, Freeman R. E and Daniel R Gilbert, Management, Pearson Education, 2007.

ADVERTISING AND SALESMANSHIP

BBA 1426

5 Hrs / 4 Cr

Objective: This course aims to familiarize the students with the basic principles of advertising and salesmanship and also focuses the importance of media.

UNIT - I

Advertising: Evolution – Definition – Basic features – Advertising and advertisement – Advertising and Publicity – Advertising and Salesmanship – Advertising and Sales promotion.

UNIT- II

Objectives – Functions – Importance – PLC and Advertising – Advantages of Advertising to manufacturers, salesmen, wholesalers, retailers, customers and community.

UNIT- III

Types of advertisement – Classification of advertisement copy – Qualities of a good copy – Elements of an advertising copy – Reasons for failure of advertisement – Advertising Media: Kinds – Selection.

UNIT- IV

Salesmanship: Definition – Objectives – Importance – Duties – Qualities of a successful salesman – Sales personality – Types of Salesman – Theories of Personal Selling.

UNIT- V

Sales Organisation: Need – Importance – Functions – Structure; Sales Management: Functions; Sales manager: Qualities – Duties and responsibilities – Types of Sales manager.

Text Book:

R.S.N.Pillai and Bagavathi, "Marketing Management", S.Chand& Company, New Delhi, 2010.

Reference Books:

1. Rajeev Batra, John G.Myers and David D.Aaker, "Advertising Management", Pearson, New Delhi, 2009.
2. Chunawalla, Kumar, Sethia, Suchak, "Advertising Theory and Practice", Himalaya Publishing House Private Limited, Mumbai. 2012.
3. Monle Lee, Carla Johnson, "Principles of Advertising", Viva Books Private Limited, New Delhi, 2007.
4. Manendra Mohan, "Advertising Management", Tata McGraw Hill Publishing Company Ltd, New Delhi, 2008.

ORGANISATIONAL BEHAVIOUR

BBA 2437

4Hrs / 4Cr

Objective: The main goal of Organisational Behaviour is to revitalize organizational theory and develop a better conceptualization of organizational life among students.

UNIT - I

Overview: Organizations and their Existence - Meaning of OB - Importance of OB - Foundation of OB - Contributing Disciplines - Applications in Industry; Organisation Theory: Historical Evolution; Classical Theories: Industrial Revolution - Scientific Management - Human Relations Movement - Hawthorne Studies; Modern Theories: Systems Approach - Contingency Approach - Quantitative Approach - Behavioural Approach.

UNIT - II

Personality and Individual Differences: Meaning of Personality - Determinants of Personality - Theories of Personality - Shaping of Personality - Personality Structure; Perception and Attribution: Meaning and Definition - Perceptual Process - Process of Interpretation - Checking and Reacting - Attribution theory - Managing Perception - Social Perception.

UNIT - III

Learning: Meaning - Concepts and Principles - Theories of Learning; Attitudes and Values: Sources and Components of Attitudes - Types - Cognitive Dissonance Theory - Value Theory - Models and Measurement of Job satisfaction;

UNIT - IV

Work Motivation: Nature - Importance of Motivation - Theories of Motivation - Maslow's Hierarchy of Need Theory - Alderfer's ERG Theory - Herzberg's Motivation Hygiene Theory - McClelland's Achievement - McGregor's Theory X & Y - Vroom's Expectancy Theory - Goal Setting Theory.

UNIT - V

Group Dynamics: Nature and Types of Groups - Determinants of Group Behaviour - Group Structuring; Team Dynamics: Nature - Benefits and Types of Teams - Team Vs Group - Team Issues; Power and Political Behaviour: Dynamics - Sources and Effective use of Power - Essence - Types and Ethics of Politics; Leadership: Nature - Importance - Theories - Skills and Styles of Leadership.

Text Book:

K. Aswathappa, Organisational Behaviour, Himalaya Publishing House, Mumbai, 2012.

Reference Books:

1. S.S. Khanka, Organisational Behaviour, S. Chand & Company Pvt. Ltd, 2010.
2. Luthans, Fred, Organisational Behaviour, McGraw-Hill, 2009.
3. Pareek, Udai, Understanding Organisational Behaviour, OUP, 2008.
4. Robbins, S.P., TA Judge & S. Sanghi :Organisational Behaviour, Pearson, 2007.

HUMAN RESOURCE MANAGEMENT

BBA 2543

5 Hrs / 5 Cr

Objective: To make students understand the process of managing and maintaining people and the workforce in a business or organisation.

UNIT – I

Evolution and Development of Human Resource Management; HRM: Definition and Meaning - Objectives - Scope - Functions and Importance; Difference between Human Resource Management and Personnel Management; Role of HR Manager.

UNIT – II

Job Analysis: Need - Process; Job Description: Contents - Steps; Job Specification; Uses of Job Analysis; Human Resource Planning: Definition and Meaning – Objectives – Benefits – Human Resource Planning Process – Factors Affecting Human Resource Planning - Problems in Human Resource Planning.

UNIT – III

Recruitment: Definition - Objectives – Sources – Factors Influencing Recruitment; Selection: Meaning and Definition - Selection Procedure – Placement and Induction; Employee Training: Meaning – Benefits of Training – Need for Training - Objectives – Training Methods – Training Procedure – Evaluation; Executive Development: Meaning – Objectives - Need – Difference Between Training and Development.

UNIT – IV

Performance Appraisal: Meaning – Need and Purpose - Methods of Performance Appraisal; Promotion - Transfer – Demotion; Wage and Salary Administration: Definition and Concepts – Objectives – Factors Affecting Wage and Salary Levels; Social Security Measures: Meaning – Objectives – Types.

UNIT – V

International Human Resource management: Introduction - Global recruitment - Global Selection approach – Expatriate and international Adjustment- Cross Culture training; E-Human Resource Management: Introduction – Aspects of E- HRM – E- Recruitment - E- Selection – E- Performance Management – E- Training and development – E-HR Records – E- HR information.

Text Book:

P.Subba Rao, Personnel and Human Resource Management, Himalaya Publishing House, New Delhi 2013.

Reference Books:

1. Aswathappa. K, Human Resource and Personnel Management, Tata McGraw - Hill Publishing Company Ltd, New Delhi, 2008.
2. C.B. Mamoria and V.S.P.Rao, Personnel Management, Himalaya Publishing House, New Delhi, 2012.
3. David A. DeCenzo & Stephen P. Robbins - Personnel / Human Resource Management, Prentice Hall of India Ltd, 2010.
4. Gar Dessler, Human Resource Management, Prentice Hall of India, New Delhi, 2009

QUANTITATIVE TECHNIQUES

BBA 2545

5Hrs / 5 Cr

Objective: The main goal of this course is to make the students confounded in the basic mathematical and operational techniques that would enhance the perceptual knowledge in handling business as a manager and entrepreneur.

UNIT - I

Basic Concepts of Matrix Algebra: Solving Equations – Linear Equations and In-Equations; Probability: Theory of Probability; Operations Research as a Quantitative Aid to Decision Making.

UNIT - II

Concept of Linear Programming: Problem Formulation – Terminologies – Assumptions – Applications and Limitations; LPP Solution Methods – Graphical Method – Simplex Method.

UNIT - III

Transportation Problem: Mathematical Formulation – Initial Basic Feasible Solution Methods – Northwest Corner Rule – Least Cost Method – Vogel's Approximation Method – Optimality Checking – Stepping Stone Method.

UNIT - IV

Assignment Problem: Introduction - Mathematical Formulation – Hungarian Assignment Algorithm – Variations of the Assignment Problem.

UNIT - V

Game Theory: Introduction – Basic Terminologies – Two-Person Zero-Sum Game – Games with Saddle Point – Games without Saddle Point Mixed Strategies – Dominance Property of Reducing the Size of the Game – Solution Methods. Queuing Theory: Characteristics of Queuing Models – Kendall's Notation for Representing Queuing Models.

Text Book:

Natarajan, Balasubramani, Tamilarasi, Operations Research, Pearson Education, 2007.

Reference Books:

1. Ramnath, Rohitashwa, Quantitative Techniques for Managers, Himalaya Publications, 2010.
2. Panneerselvam, Operations Research, Prentice Hall, 2007.
3. KanthiSwaroop and Manmohan, Operations Research (Problems and Solutions), Sultan Chand & Sons, New Delhi, 2011.
4. Kothari, Introduction to Operation Research, Vikas Publishing House, New Delhi, 2010.

PORTFOLIO MANAGEMENT

BBA 2527

5 Hrs / 5 Cr

Objective

This course aims at providing the students a comprehensive introduction to the areas of security analysis and portfolio management and equipping them with advanced tools and techniques for making profitable investment decisions.

UNIT - I

Introduction to Securities: Meaning of Investment, Security and Portfolio – Investment and Speculation – Security Analysis Definition – Investment Activity – Features of Investment Avenues – Risk and Return Relationship – Classes of Investments – Non-Corporate Investments and Corporate Investments.

UNIT - II

Risk and Return: Components of Return – Risk Elements – Systematic and Unsystematic Risk – Precise Measures of Risk – Capital Asset Pricing Model – Security Market Line (SML) – Portfolio Risk – Arbitrage Pricing Theory.

UNIT - III

Fundamental Analysis: Influence of the Economy – Economy vs. Industry and Company – Industry Analysis – Methods to Pick Up Growth Stock; Technical Analysis: Importance of Timing – Tools of Technical Analysis – Dow Theory – Chartist Method – Charts and Trend Lines.

UNIT - IV

Portfolio Management in Mutual Funds: Definition – Types of Funds – Advantages – Regulations – Money Market Mutual Funds – Structure and Growth of Mutual Fund Industry – Taxation of Mutual Funds.

UNIT - V

Trading in Portfolio Management: Disinvestment Meaning – Objectives – Role of Disinvestment – Reasons – Disinvestment under Adverse Condition – Types – Factors Influencing Disinvestment – Role of Fundamental Factors – Investment Avenues – Timing of Disinvestment.

Text Book:

V.A. Avadhani, "Securities Analysis and Portfolio Management", Himalaya Publishing House, Mumbai, 2013.

Reference Books:

1. Prasanna Chandra, "Securities Analysis and Portfolio Management", Tata McGraw Hill, New Delhi, 2010.
2. S.K.Barua, V.Raghunathan and J.R.Varma, "Portfolio Management", Tata McGraw Hill, New Delhi, 2011.
3. Russell J. Fuller and James L.Farrell, Jr., "Modern Investments and Security Analysis, Tata McGraw Hill, New Delhi, 2009.
4. V.K.Bhalla, "Investment Management", S.Chand Publication, New Delhi, 2009.

BUSINESS LAW

BBA 2441

5 Hrs / 4 Cr

Objective: This course helps the students in understanding the legal rules which provides a framework for making business decisions and facilitates commercial transactions.

UNIT - I

Contract Act, 1872: Definition of Contract and Scope – Growth and Sources – Essential Elements of a Valid Contract – Kinds of Contracts – Contingent Contract – Discharge of Contract – Offer and Acceptance – Consideration.

UNIT - II

Indemnity and Guarantee: Contract of Indemnity Definition – Rights of Indemnity Holder When Sued; Contract of Guarantee: Definition – Consideration of Guarantee – Distinction Between Indemnity and Guarantee; Rights of Surety – Discharge of Surety from Liability.

UNIT - III

Bailment: Definition – Essential Features – Kinds; Duties of Bailee – Rights of Bailee and Bailor – Termination of Bailment; Pledge or Pawn: Definition – Rights and of Pawnee and Pawnor – Distinction Between Bailment and Pledge – Pledge by Non-Owner.

UNIT - IV

Agency: Definition of Agent and Principal – General Rules of Agency – Distinction Between Agent and Servant – Kinds of Agents – Creation of Agency – Rights and Duties of Agent – Rights and Duties of Principal – Termination of Agency – Irrevocable Agency.

UNIT - V

Sale of Goods Act, 1930: Definition and Essentials of a Contract of Sale – Kinds of Goods – Differences Between Sale and Agreement to Sell – Differences Between Sale and Hire Purchase; Conditions and Warranties: Definition – Differences – Express and Implied Conditions and Warranties; Doctrine of Caveat Emptor.

Text Book:

N.D. Kapoor, "Elements of Mercantile Law", Sultan Chand & Sons, New Delhi, 2008.

Reference Books:

1. P. Saravanavel and S.S. Umathi, "Business Law" Himalaya Publishing House, 2012.
2. M.C. Kuchhal, "Mercantile Law", Vikas Publishing House Pvt Ltd, New Delhi, 2012.
3. Avatar Singh, "Mercantile Law", Eastern Book Company, Lucknow, 2010.
4. Majumdar, Business Law, Taxmann Publication Ltd., New Delhi, 2013.

PRODUCTION MANAGEMENT

BBA2428

4Hrs / 4 Cr

Objective: To give an overview of the production process of products and to impart knowledge about a plant layout and materials management among students.

UNIT – I

Production Management: Production System - Definition and Scope of Production Management - Functions and Responsibilities of Production Manager - Production Management Strategies - Production Procedure.

UNIT – II

Manufacturing System: Types and Characteristics - Intermittent and Continuous Production; **Plant Location:** Importance - Objectives - Factors Influencing Plant Location - Urban and Rural sites - Multiple Location.

UNIT – III

Plant Layout: Definition - Objectives - Advantages of a Good Layout - Procedure of Laying Out; **Types of Layout:** Product- Process and Combination Layout - Factors Influencing Plant Layout; **Maintenance:** Objectives - Economic Aspects - Advantages - Types of Maintenance.

UNIT – IV

Production Planning and Control: Objectives - Functions; **Elements of Production Planning and Control:** Planning - Routing - Loading - Scheduling - Dispatching and Follow Up; **Materials Management:** Meaning - Importance - Objectives of Materials Management - Integrated Materials Management - Classification of Materials.

UNIT – V

Inventory Control: Importance - EOQ - Stock Levels - ABC Analysis. **Work Study:** Definition - Objectives - Components - Importance - Procedure; **Method Study:** Definition - Objectives - Scope - Procedure; **Work Measurement:** Definition - Objectives - Techniques.

Text Book:

P.Saravanel & S.Sumathi, Production and Materials Management, Margham Publication, Chennai, 2012.

Reference Books:

1. N.G. Nair, Production and Operations Management, Tata McGraw - Hill Publishing Company Ltd, New Delhi, 2009
2. K.Shridhara Bhat, Production and Materials Management, Himalaya Publishing House, New Delhi, 2008.
3. R. Panneerselvam - Production and Operations Management, Prentice Hall of India Ltd, New Delhi, 2010.
4. K. Aswathappa, Essentials of Production Management, Himalaya Publishing House, New Delhi, 2012.

INDUSTRIAL RELATIONS

BBA 2542

5 Hrs / 5 Cr

Objective: This course aims to develop an understanding among students about the facets of industrial relations and interaction pattern among labour and management.

UNIT - I

Industrial Relations: Introduction – Definition and Meaning – Concepts – Factors of Industrial Relations – Importance of Industrial Relations – Objective of Industrial Relations – Approaches – The Labour Movement – Characteristics of Indian Labour.

UNIT - II

Indian Trade Union Movement: Trade Unions – Nature – Functions – Objectives and Importance – Trade Union Movements – Reasons for Employees to Join Trade Unions – Problems of Trade Unions and Remedies – Trade Union Act 1926 – Trends in Trade Union Movement in India.

UNIT - III

Employees Provident Fund and Miscellaneous Provisions Act, 1952 – Provident Fund Scheme – Pension Scheme and Fund; Payment of Gratuity Act, 1972 – Meaning – Payment of Gratuity – Nomination; The Maternity benefit Act, 1961 – Scope and Coverage; Payment of Wages Act, 1936 – Definition – Application and Rules.

UNIT - IV

Grievance Handling and Industrial Discipline: Concept – Causes of Grievance – Procedure for Settlement; Indiscipline/Misconduct – Causes of Misconduct – Types of Punishment Under Standing Order; Collaboration and Workers Participation in Management: Bases of Collaboration – Interventions for Collaboration; Meaning of Workers Participation in Management – Concepts and Objectives – Types.

UNIT - V

Industrial Disputes: Meaning – Causes of Industrial Conflicts – Types of Industrial Conflicts – Strikes and Lockouts – Machinery for Resolving Industrial Disputes Under the Industrial Disputes Act 1947 – Arbitration – Prevention of Industrial Conflicts – Approaches to Settlement of Conflict.

Text Book:

N.D. Kapoor, "Elements of Mercantile Law", Sultan Chand & Sons, New Delhi, 2009.

Reference Books:

1. P.Subba Rao, "Industrial Relations", Himalaya Publishing House, Mumbai, 2013.
2. Gankar, "Industrial Relations", Himalaya Publishing House, Mumbai, 2012.
3. S.D. Punekar, S.B.Deodhar and Saraswathi Sankaran, "Labour Welfare, Trade Unionism and Industrial Relation", Himalaya Publishing House, Mumbai, 2012.
4. Memoria, "Dynamics of Industrial Relation", Himalaya Publishing House, Mumbai, 2011.

ENTREPRENEURIAL DEVELOPMENT

BBA 2554

5 Hrs / 5 Cr

Objective: The objective of this course is to make the students acquainted to Entrepreneurship, and to develop in them the quality for Innovative entrepreneur.

UNIT-I

Entrepreneurship: Introduction-Nature of Entrepreneurship-Concept- Development in Early – Middle - Industrial and Modern Period- Importance of Entrepreneurship- Entrepreneurial Qualities- Characteristics and Classifications.

UNIT-II

Women Entrepreneur: Concept - functions and role – growth - problems of women entrepreneurs - selection of industry - role of women associations; Rural Entrepreneurs; Factors effecting entrepreneurial growth.

UNIT-III

Small Enterprise: Introduction – Definitions – Characteristics – Objectives – Opportunities - Role and Problems; Project Identification and Selection: Project Formulation - Project Appraisal; Financing of Enterprise: Need – Sources - Venture Capital; Ownership Structure.

UNIT-IV

Institutional Finance to Entrepreneurs: Commercial Banks - Other Financial Institutions-IDBI – IFCI – ICICI – LIC – UTI – SIDCS – SIDBI - EXIM BANK; Institutional Support to Entrepreneurs: Need – NSIC - SIDO – SSIB – DICs - SISI; Government Policy for Small Scale Enterprises.

UNIT-V

Entrepreneurial Development Programmes in India: concept and Need of EDPs - Objectives of EDP - Phases of EDP - Course contents – schemes - Institutional programmes – Problems - evaluation of EDPs.

Text Books:

1. Dr. S.S Khanaka, Entrepreneurial Development, Sultan Chand & Sons, New Delhi-2010
2. Dr. C.B Gupta & Dr. S.S Khanaka, Entrepreneurship and Small Business Management, Sultan Chand & Sons, New Delhi-2010

Reference Books:

1. Holt, Entrepreneurship: New Venture Creation, Prentice-Hall, 2008.
2. Dr. Radha, Entrepreneurial Development, Prasanna and Co, Chennai 2009.
3. K. Ramachandran, Entrepreneurship Development, Tata McGraw Hill, New Delhi 2008.
4. S. Anil Kumar, Entrepreneurship Development, New Age International, New Delhi 2009.

FINANCIAL SERVICES

5 Hrs / 5 Cr

BBA 2556

Objectives: To enable the students to acquire skills necessary to successfully carve a career in financial services management and to enrich their knowledge on key areas relating to management of financial products and services.

UNIT - I

Financial Services: Meaning – Scope – Classification of Financial Services Industry – Causes for Financial Innovation – New Financial Products and Services – Innovative Financial Instruments – Classification of Share Capital – Challenges facing the Financial Sector – Present Scenario.

UNIT - II

Merchant Banking: Definition – Merchant Banking in India – Merchant Banks and Commercial Banks – Services of Merchant Banks – Merchant Bankers as Lead Manager – Duties and Responsibilities of Lead Managers – Qualities Required for Merchant Bankers – SEBI Guidelines for Merchant Bankers – Progress of Merchant Banking in India – Problems of Merchant Bankers – Scope for Merchant Banking in India.

UNIT - III

Hire Purchase & Leasing: Hire Purchase – Meaning – Origin and Development – Features of Hire Purchase Agreement – Banks and Hire Purchase Business – Bank Credit for Hire Purchase Business; Leasing: Definition – Steps Involved in Leasing Transaction – Types of Lease – Advantages and Disadvantages – Legal and Tax Aspects of Leasing – Contents of a Lease Agreement.

UNIT - IV

Venture Capital: Definition – Features – Scope – Importance – Disinvestment Mechanism – Origin; Government of India Guidelines for the Venture Capital; Indian Scenario – Suggestions for the Growth of Venture Capital Funds. Factoring and Forfaiting: Factoring – Meaning – Terms and Conditions – Functions – Types – Cost of Factoring – Benefits – Factoring in India.

UNIT - V

Mutual Funds: Definition – Fund Unit Vs. Share – Classification of Funds – Importance; Mutual Fund Risks – Organisation of the Funds – Facilities Available to Investors – Net Asset Value – Investors Rights; Government of India Guidelines for Mutual Funds – Selection of a Fund – Mutual Funds in India – Reasons for Slow Growth.

Text Book:

Gordon and Natarajan, "Financial Markets and Services", Himalaya Publishing House, 2013.

Reference Books:

1. Khan, "Financial Services", Tata McGraw Hill, New Delhi, 2008.
2. P.MohanaRao and R.L.Hyderabad, "Financial Services", Deep & Deep Publications Pvt. Ltd., New Delhi, 2009.
3. Dr.S.Gurusamy, "Financial Services and Systems", Thomson, Singapore, 2008.
4. MachiRaju, "Financial Services", Vikas Publishing House, New Delhi, 2009.

TOTAL QUALITY MANAGEMENT

BBA2420

5Hrs / 4 Cr

Objective: The objective of this course is to inculcate in students the need for Quality centric perspective in the conduct of Business both as managers and entrepreneurs.

UNIT - I

Quality Concepts: Definitions - Dimensions and Basics of Total Quality - Principles of TQM; Evolution of Quality Management: Quality Gurus – Deming – Juran – Crosby – Ishikawa – Taguchi – Feigenbaum - Shigeo Shingo - Garvin and Gano; Basic Concepts of TQM: Role of Senior Management - Control and Objectives of Quality - Team Building and Barriers to TQM Implementation.

UNIT - II

Factors Influencing Quality Costs: Cost of Quality – Analysis Techniques for Quality Costs – Economics of Quality – Quality Assurance; Customer Focus: Satisfaction - Perception of Quality - Customer Relationship Management – Service Feedback – Customer Retention and Feedback; Employee Involvement: Motivation – Empowerment – Recognition and Reward – Performance Appraisal.

UNIT - III

Continuous Process Improvement: PDCA Cycle – Kaizen – Gemba Kaizen – 5S – Quality Circles – Re-engineering; Performance Measurement: Basic Concepts – Strategy – Balanced Scorecard; The Seven Tools of Quality: Check Sheet - Pareto Diagrams – Histograms – Flow Charts – Cause and Effect Diagrams – Control Charts – Scatter Diagrams.

UNIT – IV

New Seven Management Tools: Affinity Diagram – Relationship Diagram – Tree Diagram – Matrix Diagram – Prioritization Matrices – Process Decision Program Chart (PDPC) – Activity Network Diagram; Benchmarking: Types – Process – Benefits and Shortcomings; Quality Function Deployment (QFD); Taguchi Methods: Parameter Design – Quality Loss Function (QLF) – Orthogonal Arrays – Signal-to-Noise-Ratio; Total Productive Maintenance (TPM): Concept – Improvement Needs; FMEA: Process – Fault Tree Analysis.

UNIT – V

Six Sigma: Methodology – Infrastructure – Implementation; Quality Management Systems: Need – ISO 9001 Requirements – Principles – Revision of Standards – Documentation – Implementation – Auditing – Certification; Environmental Management Systems: ISO 14001 – Concept – Requirements and Benefits.

Text Book:

R. Ramakrishnan – Total Quality Management, Eswar Press, 2005.

Reference Books:

1. Dale. H, Carol, Glen, Mary – Total Quality Management, Pearson Education, 2010
2. SridaraBhat – Total Quality Management, Himalaya Publishing House Private Limited, Mumbai. 2010.
3. Bagade - Total Quality Management, S Chand, Mumbai. 2009.

4. SridaraBhat – Quality Management, Himalaya Publishing House Private Limited, Mumbai. 2010.

BUSINESS ORGANISATION

BBA 3223

3 Hrs / 2 Cr

Objective: This subject focuses on learning about various forms of organizations in India, its features, laws and manners to manage all the facets of the organization for the students.

UNIT - I

Forms of Business Organization - Features of Individual Entrepreneur - Partnership organization - Partnership Deed - Types of Partners and their Duties and Responsibilities.

UNIT - II

Corporate Form of Organization - Cooperative Societies - Public Enterprises; Formation and Incorporation of Companies - Promotion - Duties of Promoters - Important Documents of Companies - Memorandum of Association - Articles of Association.

UNIT - III

Share and Share Capitals; Managing the Affairs of Companies - Location of Business Unit - Plant Layout - Size of a Business Unit - Business Combinations.

UNIT - IV

Entrepreneurial Decisions: Launching New Enterprise - Expansion and Diversification of Business - Business combinations - Causes of combinations; Types of Combinations: Horizontal - Vertical - Lateral Divergent - diagonal - Circular Combinations;

UNIT - V

Simple Associations: Public Utilities: Meaning- Characteristics - Rights and Duties - Problems; Joint Hindu Family Business - Features - Joint Stock Companies - Types - Classifications.

Text Book:

M. Mothiar, Business Organisation, Vrinda Publication, New Delhi - 110 001, 2013.

Reference Books:

1. Ravi M. Kishore, Company Law, Taxmann Publication, New Delhi - 110 005, 2014.
2. Business Organisation and System, Vision Publication, New Delhi, 2013.
3. M.C. Shukla, Business Organisation and Management, Sultan Chand & Sons, 2005.
4. Sherlaker and Sherlaker, Modern Business Organisation, Himalaya Publication, 2012.

MANAGEMENT INFORMATION SYSTEM

BBA 3625

6 Hrs / 6 Cr

Objective: The basic objective of this course is to provide fundamental knowledge about Management Information System for the students.

UNIT-I

Management Information System: Concept – Definition-Role of Management Information System - Impact of the Management Information System - MIS and Computer- MIS and Academics- MIS and the User.

UNIT - II

Process of Management: Management Effectiveness – Planning - Methods of Planning- Organising-staffing-Coordinating and Directing – Controlling-MIS a Tool for Management Process.

UNIT - III

Decision Making: Concepts- Decision Methods, Tools and Procedures-Behavioral Concepts in Decision Making - Organisational Decision Making-MIS and Decision Making Concepts; Decision Support Systems (DSS): Concept and Philosophy-DSS: Deterministic Systems-Artificial Intelligence (AI) Systems-Knowledge Based Expert System (KBES)-MIS and the Role of DSS.

UNIT - IV

Data Base Management System: Concepts- Data Base Models- Data Models- Data Base Design-conceptual Model and Physical Model-Performance Monitoring and Tuning-Security in the Data Base Environment – RDBMS-MIS and RDBMS.

UNIT - V

Enterprise Management Systems (EMS): Introduction- Enterprise Resource Planning (ERP) System-ERP Basic Features-Benefits of ERP-ERP Selection and Implementation-EMS and MIS.

Text Book:

W. S Jawadkar, Management Information System, TATA McGraw Hill Publications, New Delhi 2010.

Reference Books:

1. S. Sadagopan, Management Information Systems, PHI Learning Pvt. Ltd., New Delhi, 2009.
2. S. Shajahan, Management Information Systems, New Age International, New Delhi, 2007.
3. Indrajit Chatterjee, Management Information Systems, Phi Learning Pvt. Ltd., New Delhi, 2010.
4. Hitesh Gupta, Management Information System, Hitesh Gupta, New Delhi, 2011.

COST ACCOUNTING

BBA 3627

6 Hrs / 6 Cr

Objective: This course aims to test the students ability understand conceptual frame work of Cost accounting. It provides an in-depth study of the Cost Accounting Principles and Techniques for identification, analysis and classification of cost components to facilitate managerial decision making

UNIT - I

Introduction – Definitions - Nature and Scope of Cost Accounting – Objectives - Difference Between Cost and Financial Accounting – Cost Classifications – Types –Methods and Techniques of Costing – Preparation of Cost Sheet.

UNIT - II

Material Cost – Purchase Control – Bills of Materials – Requisition – Inspection – Material Inventory Control – Maintenance of Stock Level – Stores Ledger – Material Issue Control – Pricing of Materials.

UNIT - III

Labour Cost – Direct and Indirect Labour Cost Control – Time and Motion Study – Merit Rating Time Keeping and Time Booking – Labour Turnover - Causes of Labour Turnover; Labour Cost Accounting – Time Rate System – Methods of Remuneration – Accelerating Premium Plans – Payroll Department Functions.

UNIT - IV

Overhead Analysis – Importance – Classifications – Procedures of Linking Overhead to Cost Units – Overhead Rates – Methods of Absorption of Overhead Rates.

UNIT - V

Basics of Cost Accounting Applications in Unit Costing – Job Costing – Batch Costing – Contract Costing – Process Costing – Operation Costing and Operating Costing - Service Costing.

Text Book:

S.P Jain and K.L Narang – Cost Accounting –Kalyani Publishers – New Delhi – 110 002. 2013.

Reference Books:

1. R.S.N. Pillai& V. Bhavathi, Cost Accounting, S. Chand Publishers, New Delhi – 110 055. 2013.
2. M.N. Arora, Vikas Publishing House, Elements of Cost Accounting, New Delhi – 110 014 2013.
3. Methods and Problems, B.K, Bhar, Dhur Academic Publishers, Calcutta – 700 073. 2013.
4. Ravi M. Kishore, Taxmann Publications, Cost Accounting Problems and Solutions, New Delhi – 110 005. 2013.

MARKETING RESEARCH

BBA 3631

6 Hrs / 6 Cr

Objective: Application of theoretical knowledge in real life situations and advancement of knowledge in any field of study are not possible without research. Therefore this paper has been introduced with the objective of making the students understand the basic concept of research in the field of Marketing.

UNIT – I

Marketing Research: Definition – Features – Objectives – Nature -Scope – Role of Marketing Research – Limitations – Internal Marketing Research Organisation – External Research Organisation – Merits and Demerits – Criteria for Selecting the Outside Agency.

UNIT – II

Marketing Research Process: Characteristics of Sound Marketing Research –Research Design – Benefits – Types - Exploratory - Descriptive – Experimental; Attitude Measurement– Characteristics of Scientific Measurement – Levels of Measurements and the Scales - Scaling Techniques.

UNIT – III

Sampling: Definition – Reasons– Objectives of Sampling – Characteristics of an Ideal Sample – Factors to be Considered in Sample Size – Sampling Process - Merits and demerits of Sampling - Methods of Sampling – Probability Sampling and Non-Probability Sampling – Problems in Sampling Process.

UNIT – IV

Collection of Data: Primary Data – Methods of Collection – Communication - Observation and Interview – Methods of Interview – Merits and Demerits – Designing a Questionnaire - Secondary Data – Merits and Limitations –Sources of Secondary Data.

UNIT – V

Classification and Tabulation of Data: Data Analysis – Techniques of Data Analysis – Testing of Hypotheses – Types of Errors - Interpretation and Presentation of Data; Research Report – Purposes – Steps in Report Writing – Research Report Layout – Reference Note – Bibliography.

Text Book:

C.N. Sontakki , Marketing Research, Himalaya Publishing House, New Delhi 2013.

Reference Books:

1. G.C.Beri, Marketing Research, Tata McGraw – Hill Publishing Company Ltd, New Delhi, 2008.
2. Suja R. Nair, Marketing Research, Himalaya Publishing House, New Delhi, 2012.
3. David J. Luck & Ronald S. Rubin - Marketing Research, Prentice Hall of India Pvt. Ltd, New Delhi, 2005.
4. M.N.Mishra, Modern Marketing Research, Himalaya Publishing House, New Delhi, 2012.

INTERNATIONAL MARKETING

BBA 3525

5Hrs / 5 Cr

Objective: This course is gaining much importance because of the advancing universal liberalization and the concomitant globalization. This subject, acclaimed for its succinct treatment with simple and lucid style, provides the students a comprehensive picture of the various aspects and dimensions of trends in International Marketing.

UNIT - I

Frame Work of International Marketing – Definitions – Factors – Challenging Global Markets – Entry Strategies in International Markets – Theories of International Trade.

UNIT - II

Entry Strategies in International Markets – Modes of Entry – Market Information System – Market Segmentation – Targeting Positioning – Planning Process – Product Life Cycle – Competition and International Marketing Strategy.

UNIT - III

International Marketing Mix Elements – Product Inception and Development – Classifications – Preference – International Branding – Global Brand Leadership – Pricing in International Markets – Global Pricing strategies – Environmental Influence on Pricing.

UNIT - IV

Marketing Channels and Place Decisions – Channel Objectives and constraints – Innovations in International Channels – Factors Affecting Channel Decisions – Promotional Decisions – Elements of Personal Selling Process – Publicity – Marketing Communication.

UNIT - V

Export and Import Procedure – Preliminaries for Starting Export – Appointing Agents – Licensing Procedure- Export Agreements –Import Procedures – Letter of Credit – Import Documentations.

Text Book:

International Marketing, Francis Cherunilam, 12th Edition, Himalaya Publishing house Private Limited, Mumbai – 400 004, 2013.

Reference Books:

1. R. Srinivasan, International Marketing, PHI Learning [P] Limited, New Delhi – 110 042, 2013.
2. Varshney & Bhattacharya, International Marketing Management, Sultan Chand & Sons, New Delhi – 110 002, 2012.
3. Text and Cases, International Marketing Justing Paul & Ramneek Kapoor, The Tata Mc-Graw Hill Publishing Company – New Delhi – 110 008, 2012.
4. U.C Mathur, Sage Publications, International Marketing Management, New Delhi – 110 008, 2013.

ORGANISATIONAL LEADERSHIP

BBA 3260

3Hrs / 2 Cr

Objective: The prime objective of this course is to provide the students an exposure to the skills required for the world of corporate leadership that would define standards and enhance one's employability.

UNIT - I

Nature of Leadership – Leadership and Management – Importance of Leadership – Leadership Styles and their Implications – Styles Based on 'Authority Retained', 'Task Versus People Emphasis', 'Assumption about People', Likert's Four Styles.

UNIT - II

Entrepreneurial Leadership Style; Motivation - Training, Development, Wage and Salary Administration - Performance Appraisal.

UNIT - III

Theories of Leadership: Trait Approach – Behavioural Theories – Contingency Theories; Contemporary Issues on Leadership – Women as Leaders.

UNIT – IV

Leadership Skills: Technical Skills – Analytical Skills – Decision Making Skills – Time Management – Resource Management – Change Management.

UNIT – V

Leadership Traits of Modern Organizational Leaders – Executive Coaching Strategies – Counseling Strategies – Consultation Strategies.

Text Book:

K. Aswathappa, Organisational Behaviour, Himalaya Publishing House, Mumbai, 2012.

Reference Books:

1. A. Chandra Mohan, Leadership and Management, Himalaya Publishing House, 2010
2. Len Sperry, Effective Leadership, Brunner Routledge, New York, 2011.
3. Akhilesh and GopalMahapathra, Enabling Execution Excellence, Himalaya Publishing House, 2009.
4. V.K.Singh, Effective Management Workout, Himalaya Publishing House, Mumbai, 2007.

ENVIRONMENTAL STUDIES

BBA 3200

4 Hrs / 2 Cr

Objective: To acquaint the students with the knowledge of Environment and Pollution.

UNIT- I

Introduction: Environment- Terms and Definition – Components – Ecology – Balanced Eco System – Biodiversity and Conservation

Unit- II

Structural Components: Types And Functions Of Structural Components of Biotic Organisms- Natural Resources- Energy- Energy Flow-Energy Source- Renewable And Non Renewable Sources.

Unit- III

Pollution: Pollutants- Types Of Pollution- Industry And Pollution- Development Countries and Pollution- Pollution Related Issues On Developing Countries- Technological Compromise- Specific Cases.

UNIT- IV

Natural Environment: – Impact on business – Guidelines for development of natural resources – Sustainable development – Green Index.

UNIT- V

Control & Management: Pollution Control and Management- Legal Statutory Requirements- Business Ethics and Social Responsibility – Specific Cases.

Reference Books:

1. Bharucha, Erach, Environmental Studies, Hyderabad ,UGC University Press 2005
2. K.K.Kumaraswamy, Environmental Studies, Bharathidasan University, 2004
3. Arumuam And Kumaresan, Environmental Studies Sara Publication, Nagercoil, 2008
4. Agraal S.P Environmental Studies, Marosa Publications, Chennai 2008
5. G.Suganti and G. Anitha, Environmental Studies, Scitech Publications, Chennai, 2010
6. Saroj Upadhyay, Business Environment, Kamal Jagasia, New Delhi, 2010

STRATEGIC MANAGEMENT

BBA 3650

6 Hrs / 6 Cr

Objective: Intensified competition among domestic private and public companies and multinational companies has brought paradigm shifts in strategic management of various companies. Therefore this paper has been introduced to make the students understand the basic concept of strategy, various types of strategies, its formulation, implementation, evaluation and control.

UNIT – I

Strategy: Definition – Levels at Which Strategy Operates; Strategic Management: Definition – Need – Benefits – Challenges for Strategic Management – Strategic Management Process; Establishing Corporate Direction: Vision - Characteristics – Mission – Key Elements – Characteristics – Need – Contents - Business Definition – Criteria of an Effective Business Definition –

UNIT – II

Objectives: Areas – Characteristics – Importance of Objectives – Guidelines for Formulating Objectives – Objectives Vs. Goals; Kinds of Strategies: Grand Strategies – Modernisation Strategies – Diversification and Integration Strategies – Merger - Takeover and Joint Venture Strategies – Turnaround - Divestment and Liquidation Strategies – Contingency Strategies.

UNIT – III

Strategy Formulation : Environmental Appraisal – Organisational Appraisal – Process of Strategic Choice – Objective Factors - Corporate Portfolio Analysis – BCG Matrix – GE Nine-Cell Matrix – DPM Matrix – TOWS Matrix – Industry and Competitor Analysis – Subjective Factors.

UNIT– IV

Strategic Implementation: Issues in Strategic Implementation – Project Implementation – Procedural Implementation – Resource Allocation – Structural Implementation – Functional Implementation – Behavioural Implementation.

UNIT– V

Strategic Evaluation and Control: Nature – Importance – Participants – Barriers in Strategic Evaluation; Strategic Control: Premise Control – Implementation Control – Strategic Surveillance – Special Alert Control.

Text Book:

Azhar Kazmi, Strategic Management and Business Policy Third Edition, Tata McGraw–Hill Publishing Company Ltd, New Delhi 2012.

Reference Books:

1. SubbaRao, Business Policy and Strategic Management, Text and Cases, Himalaya Publishing House, New Delhi, 2013.
2. R.M.Srivastava&ShubhraVerma, Strategic Management, Concepts, Skills and Practices, PHI Learning Private Ltd, New Delhi, 2013.
3. Francis Cherunilam, Business Policy and Strategic Management, Text and Cases, Himalaya Publishing House, New Delhi, 2010.
4. Johnson & Scholes, Exploring Corporate Strategy, Text and Cases, Prentice Hall of India, New Delhi,2009.

MANAGEMENT ACCOUNTING**BBA 3644****6 Hrs / 6 Cr**

Objective: This course primarily focuses the students on the preparation of reports for internal users, such as the managers and officers of a company. These reports are an integral part of managerial accounting which provides techniques for assisting management in making decisions and tools for evaluating the effectiveness of those decisions

UNIT - I

Management Accounting: Definitions – Objectives – Difference Between Management Accounting, Financial and Cost Accounting – Functions of Management Accountant – Limitations – Installation of Management Accounting System.

UNIT - II

Analysis and Interpretation of Financial Statements – Concept of Financial Statements – Horizontal and Vertical Formats – Tools for Analysis of Financial Statements; Ratio Analysis – Utility – Limitations – Profitability Ratios – Turnover Ratios – Financial Ratios – Dupont Control Chart Analysis.

UNIT - III

Funds Flow Statement – Sources and Applications of Funds – Managerial Applications of Funds Flow Statement – Cash Flow Statement – Construction of Cash Flow Statement as per AS 3.

UNIT - IV

Budget and Budgetary Control – Objectives – Installation of Budgetary Control System – Procedures for Preparation of Budgets – Classifications of Budgets – ZBB Budgets.

UNIT - V

Marginal Costing – Cost Volume Profit Analysis – Managerial Applications – Standard Costing – Types of Standards – Variance Analysis – Difference Between Standard Costing and Budgets.

Text Book:

Dr. S.N. Maheswari - Principles of management Accounting – Sulthan Chand Publications – New Delhi – 110 002, 2011

Reference Books:

1. RSN. Pillai & V. Bhavathi – Management Accounting - S. Chand Publishers – New Delhi – 110 055, 2010.
2. Ravi M. Kishore – Management Accounting – Taxmann Publications – New Delhi – 110 005, 2011.
3. M,Y Khan and Jain - Management Accounting – The Tata Mcgraw Hill Publishing Company – New Delhi – 110 008, 2012.
4. M. Mongiello – Management Accounting - University of London Press – London – Britan, 2012.

LOGISTICS MANAGEMENT**BBA 3628****6Hrs / 6 Cr**

Objective: This course aims to create in students the concept-based and systemic approach towards those business ventures that involve logistical expertise coupled with functional knowledge of Supply Chain Management.

UNIT - I

Introduction and Planning: Definition – Importance – Objectives – Approaches of Logistics and Supply Chain; Logistics / Supply Chain Strategy and Planning: Corporate Strategy – Selecting the Proper Channel Strategy – Measuring Strategy Performance.

UNIT - II

The Logistics and Supply Chain Product: Nature – The 80-20 Curve – Product Characteristics – Product Packaging – Product Pricing; Logistics and Supply Chain Customer Service: Definition – Order Cycle Time – Importance - Sales-Service Relationship – Optimum Service Levels – Measuring Service; Order Processing and Information Systems: Definition – Examples – Affecting Factors – Examples and Functions of Information System.

UNIT - III

Transport Fundamentals: Importance – Single Service Choices and their Characteristics – Intermodal Services – Agencies and Small Shipment Choices – International Transportation – Transport Cost Characteristics – Domestic and International Transport Documentation; Transport Decisions: Transport Service Selection – Vehicle Routing and Scheduling

UNIT – IV

Forecasting Supply Chain Requirements: Nature – Methods – Techniques; Inventory Policy Decisions: Appraisal – Types of Inventories – Classification – Objectives – Control; Purchasing and Supply Scheduling Decisions: Co-ordination – Scheduling – Purchasing.

UNIT – V

Storage and Handling System: Need – Reasons for Storage – Functions – Alternatives – Costs and Rates; Storage and Handling Decisions: Site Selection – Planning for Design and Operation – Materials Handling System Design – Order Picking Operations; Facility Location Decision: Classification – Historical Perspectives on Location – Single and Multiple Facility Location – Dynamic Warehouse Location – Retail / Service Location

Text Book:

Ronald H. Ballou – Business Logistics / Supply Chain Management, Pearson Education, 2010.

Reference Books:

1. Donald J. Bowersox, David J. Closs – Logistical Management, Tata McGraw-Hill, 2010.
2. Sridhara Bhatt –Logistic Management, Himalaya Publishing house Private Limited, Mumbai. 2012.
3. P.SaravanaVel - Logistics and Supply Chain Management, Himalaya Publishing house Private Limited, Mumbai. 2010.
4. Bhatt –Supply Chain Management, Himalaya Publishing house Private Limited, Mumbai. 2011.

RETAIL MANAGEMENT**BBA3550****5Hrs / 5 Cr**

Objective: Consumer market has evinced interest from both domestic and international retailers. In this context this subject helps to make the students understand the conceptual frame work of Retail Management which includes retail pricing, merchandising, formats and promotional strategies.

UNIT – I

Retailing: Meaning – Functions of a Retailer - Features of Retailing – Retailer in the Marketing Channel –Retailer and Marketing Mix – Main Drives of Retailing in India – Challenges to Retail Development in India.

UNIT –II

Retail Consumer: Buying Process – Factors Affecting Consumer Decision Making – Factors Influencing the Retail Shopper – Customer Service in Retailing – Market Segmentation. Retail Merchandising – Merchandise Mix – Variables Affecting Merchandise Mix –

Categorizing – Category Management - Suppliers – Criteria for Selection of Suppliers – Buying Function – Brand Management.

UNIT – III

Retail Pricing: Meaning – Factors Affecting Retail Prices – Pricing Objectives – Retail Pricing Policies – Price Adjustments – Retail Store Location – Factors Influencing Retailer's Choice of Location – Levels of Location Decisions and its Determining Factors – Retail Location Strategies.

UNIT – IV

Organisation Pattern in Retailing: Classification of Retail Units – Retailing Formats – Methods of Customer Interaction; Store Layout: Types – Store Design – Key Components of Retail Atmospherics.

UNIT – V

Retail Promotion Strategies: Elements of Retail Promotional Mix – Methods of Communicating With Customers – Steps in Designing Retail Sales Promotions – Paid Personal Communication – Unpaid Impersonal Communication – Selection of Promotional Mix – Media Selection – Popular Media Vehicles used in the Indian Retail Sector.

Text Book:

S.Banumathy & M.Jeyalakshmi, Retail Marketing, Himalaya Publishing House, New Delhi 2010.

Reference Books:

1. Swapna Pradhan, Retailing Management – Text and Cases, Tata McGraw – Hill Education Pvt. Ltd, New Delhi, 2013.
2. Suja Nair, Retail Management, Himalaya Publishing House, New Delhi, 2012.
3. Lamba A. J. The Art of Retailing, Tata McGraw – Hill Publishing Pvt. Ltd, 2007.
4. Arif Sheikh and Kaneez Fatima, Retail Management, Himalaya Publishing House Pvt Ltd, New Delhi, 2011.

DEPARTMENT OF BCA
PROGRAM /COURSE FRAME FOR BCA
 Self Financed Programme

2015-2016

Sem	Part	Course Code	Course Title	Hrs	Credit	Marks
I	I	TAM 1313	TAM/HIS/FRS	3	2	30
	II	ENS 1201	Conversational Skills	3	2	30
	III-M	BCA 1431	Computers Fundamentals & Applications	4	4	60
	III-M	BCA 1533	Structured Programming using C	5	5	75
	III-M	BCA 1435	C Lab	4	4	60
	III-S	MAS 1433	Discrete Mathematics	5	4	60
	IV-NME	BCA 1231	Technology and Social Change	3	2	30
	IV-LS	BCA 1233	Digital Marketing	3	2	30
Total				30	25	375
II	I	TAM 1314	TAM/HIS/FRS	3	2	30
	II	ENS 1202	Reading & Writing Skills	3	2	30
	III-M	BCA 1432	Operating System with Unix	4	4	60
	III-M	BCA 1534	Data Structures using C	5	5	75
	III-M	BCA 1436	C++ Lab	4	4	60
	III-S	CMC 1416	Accounting for Managers	5	4	60
	IV-NME	BCA 1232	Web Programming	3	2	30
	IV-LS	BCA 1234	Multimedia Technology and Applications	3	2	30
	V	XXX 0000 Or XXX 0000	Ext. activity NCA/NCN/NSS Or Ext. activity SLP	1	1	
Total				30+1	25+1	375
III	I	TAM 2313	TAM/HIS/FRS	3	2	30
	II	ENS 2201	Study Skills	3	2	30
	III-M	BCA 2531	Object Oriented Programming using C++	5	5	75
	III-M	BCA 2533	Dot net Programming	5	5	75
	III-M	BCA 2535	RDBMS	5	5	75
	III-M	BCA 2437	RDBMS & Dot Net Lab	4	4	60
	III-S	PHS 2543	Micro Controller Programming	5	4	60
Total				30	27	405

Sem	Part	Course Code	Course Title	Hrs	Credit	Marks
IV	I	TAM 2314	Language	3	2	30
	II	ENS 2202	Career Skills	3	2	30
	III-M	BCA 2532	Software Engineering	5	5	75
	III-M	BCA 2534	Computer Graphics using Open GL	5	5	75
	III-M	BCA 2536	Java programming	5	5	75
	III-M	BCA 2438	Java Lab	4	4	60
	III-S	MAS2436	Operation Research	5	4	60
	V	XXX 0000 Or XXX 0000	Ext. activity NCA/NCN/NSS Or Ext. activity SLP	1	1	
Total				30+1	27+1	405
V	III -M	BCA 3631	Internet Technology	6	6	90
	III -M	BCA 3633	Computer Networks Using Simulator	6	6	90
	III -M	BCA 3635	R Language	6	6	90
	III -M	BCA 3537	Internet Technology Lab	5	5	75
	I EVS	BCA 3231	Environmental Studies and E-Waste Management	4	2	30
	III LS	BCA 3233	Social Implication in Nano Technology	3	2	45
	Total				30	27
VI	III C	BCA 3632	Advanced Java	6	6	90
	III C	BCA 3634	Linux Programming	6	6	90
	III C	BCA 3636	Mobile Computing	6	6	90
	III C	BCA 3538	Project	5	5	75
	III C	BCA 3538	Project	4	2	30
	IVAL	VAL 3200	Value Education	3	2	30
IV LS	BCA 3234	Advanced Excel	3	2	30	
Total				30	27	405
Grand Total (Sem I -VI)				180+2	158+2	2370

M MAJOR CORE
S MAJOR SUPPORTIVE
NME NONMAJOR ELECTIVE
LS LIFESKILL
EVS ENVIRONMENTAL STUDIES
VAL VALUE EDUCATION

Supportive course from Other Departments

Semester	Course Code	Course Title	Hrs	Credit	Marks
I	MAS 1459	Discrete Mathematics	5	4	60
II	CMC 1416	Accounting for Managers	5	4	60
III	PHS 2543	Embedded Systems and Micro Controller	5	4	60
IV	MAS2464	Operation Research	5	4	60

Non Major Electives

Semester	Course Code	Course Title	Hrs	Credit	Marks
I	BCA 1231	Technology and Social Change	3	2	30
II	BCA 1232	Web Programming	3	2	30

Life Skill

Semester	Course Code	Course Title	Hrs	Credit	Marks
I	BCA 1233	Digital Marketing	3	2	30
II	BCA 1234	Multimedia Technology and Applications	3	2	30
V	BCA 3233	Social Implication in Nano Technology	3	2	45
VI	BCA 3234	Advanced Excel	3	2	30

BCA 1431

Computer Fundamentals and Application

4hrs

Objective

This course provides a foundational understanding of Computer Hardware, Software, Operating System, and Peripherals along with how to get the most value and impact from Computer Technology. Students will gain knowledge on using Internet, system Software, Application software, DBMS, Programming Languages etc.,

Unit I

Introducing Computer Systems, Exploring Computers and their uses, Looking inside the Computer System, Interacting with the Computer System- Using Keyboard and Mouse, Inputting Data in other ways, Seeing Hearing and Printing Data – Video and Sound, Printing. Introduction to number system and number conversions.

Unit II

Processing Data – Transforming Data into Information, Modern CPUs, Storing Data – Types of Storage Devices, Measuring and Improving Drive Performance. Using Operating System– Operating System Basics, Survey of PC and Network Operating Systems. Networks – Networking Basics, Data Communications, Presenting the Internet – The internet and the world, Email and other Internet Services.

Unit III

Working with Application Software – Productivity Software, Graphics and Multimedia. Database Management – Database Management Systems, Survey of Database Systems.

Unit IV

Software Programming and Development, Creating Computer Programs, Programming Languages and the Programming Process.

Unit V

Protecting Computer and Data – Understanding the need for security Measures and taking protecting measures. Case Study – MS Office, Star Office, Open Office

Reference Books:

1. Introduction to Computers, Peter Norton, McGraw-Hill Education, 6th edition, 2013.
2. Computer Fundamentals, Anita Goel, Pearson Education India 2010.
3. Using Information Technology : A Practical Introduction to Computers & Communication, Brian Williams, StaceySawyer,2005
4. Fundamentals of Computers, E Balagurusamy, Mc GrawHill Education India 2014.
5. Digital Computer Fundamentals, Thomas C.Bartee, 6th Edition, Tata Mc Graw Hill Publishers. 2014.
6. Discovering Computers, Fundamentals, Gary Shelly, Misty Vermaat, 2011, Cengage Learning.

Web Sites:

1. www.tutorialspoint.com/computer_fundamentals
2. people.bu.edu/baws/computer%20fundamental.html
3. <https://play.google.com/store/apps/details?id=com...pcfundamental>

BCA 1533**Structured Programming using C****5hrs****Objective:**

The primary objective of the course is to enable the students to understand the programming concepts and enable them to write programs in c language.

Unit I

Introduction to programming –flow chart-algorithm-history of c - operators and expressions-data types-arithmetic expressions-ïo statements – enumerated data types – type def

Unit II

Control structures-looping statements-arrays-strings and string functions

Unit III

Functions-user defined functions-structures-unions

Unit IV

Introduction to pointers-pointers and arrays-passing an array element to a function-pointers and arrays-one dimensional array, two dimensional array.

Unit - V

Array of pointers-pointers and strings-pointers and structures-dynamic memory allocations

Unit-VI

Files-creation-file manipulation-command line arguments

Reference books:

1. Let us C : Y.P.Kanetkar, Bpb publication,2011
2. Programming using C,Pandiaraja,Cijay Nicholas publications,2005
3. Schaum's Outline of Programming with C,Byron S. Gottfried,, 2nd edition, McGraw Hill Professional, 2000,
4. Programming in Ansi C, E. Balaguruswamy, 5th Edition, Tata Mc Graw Hill Publishing, 2011.
5. Programming in C Ajay Mittal Pearson, First edition (2010)

Web Sites:

1. www.cprogramming.com/tutorial.html
2. www.tutorialspoint.com/cplusplus/
3. cforbeginners.com/

BCA 1435**C Programming Lab****4hrs****Exercise:**

1. Variables only.

2. Ternary operator
3. Control statement(If)
4. Switch case statement
5. Number manipulation
6. Loops
7. Matrix manipulation
8. String manipulation
9. Arrays
10. Structure
11. Function
12. Recursion

BCA 1231**Technology and Social Change****3hrs****Objective**

The objective of this course is to develop sociological thinking about technology and society, to analyze the relationship between technology and society, to consider to what extent and in what circumstances technology influences society, and reciprocally, how society influences technology.

Unit I

Unwrapping the Gift - The Ubiquity of Computers and the Rapid Pace of Change- New Developments and Dramatic Impacts -Amateur Creative Works: Blogs and Video Sharing – Connections - Collaborative Efforts Among Strangers -Ecommerce and Free Stuff - Artificial Intelligence, Robotics, and Motion - Tools for Disabled People - An Introduction to Some Issues and Themes – Issues –Themes – Ethics.

Unit II

Privacy - Privacy and Computer Technology – Introduction - New Technology, New Risks - Terminology and Principles for Data Collection and Use – Databases - The Fourth Amendment, Expectation of Privacy, and Surveillance Technologies - Video Surveillance - Diverse Privacy Topics - Marketing, Personalization and Consumer Dossiers - Location Tracking - Stolen and Lost Data - Public Records: Access vs. Privacy - National ID Systems - Protecting Privacy: Technology, Markets, Rights, and Laws.

Unit III

Intellectual Property - Intellectual Property and Changing Technology - Challenges of New Technologies - Copyright Law and Significant Cases - The Fair-Use Doctrine - Significant Cases - Copying and Sharing - Defensive and Aggressive Responses from the Content Industries -Video Sharing - New Business Models and Constructive Solutions - Ethical Arguments About Copying - Free Software- Issues for Software Developers - Patents for Software - Patents for Web Technologies -Copyright and Similar Software Products

Unit IV

Evaluating and Controlling Technology - Information, Knowledge, and Judgment - Evaluating Information on the Web - Writing, Thinking, and Deciding - Computer Models - Computers and Community - The Digital Divide - Evaluations of the Impact of Computer Technology - Accomplishments of Technology - Making Decisions about Technology - Intelligent Machines and Super intelligent Humans – Or the End of the Human Race

Unit V

Professional Ethics and Responsibilities - Professional Ethics - Ethical Guidelines for Computer Professionals - Special Aspects of Professional Ethics - Professional Codes of Ethics - Guidelines and Professional Responsibilities - Protecting Personal Data - Designing an E-mail System with Targeted Ads - Specifications

References:

1. A Gift of Fire: Social, Legal, and Ethical Issues for Computing and the Internet, Sarah Baase, Pearson Education Limited, 4rd Edition, 2012.
2. Understanding Computers in a Changing Society, 3rd Edition, Deborah Morley, Course Technology, 2009.
3. Technology and Rural Change in Eastern India, Smritikumar Sarkar, Oxford University Press , 2014.
4. The Dynamics of Technology for Social Change: Understanding the Factors That Influence Results: Lessons Learned, Jonathan Peizer, iUniverse, 2005.
5. Communication Technology and Social Change: Theory and Implications (Routledge Communication Series), Carolyn A.Lin and David J. Atkin, Routledge, 2007.

Web Sites:

1. <https://www.techchange.org/online-courses>
2. <https://www.techchange.org/online-courses/social-media-for-social-change>
3. tascha.uw.edu

BCA 1233**Digital marketing****3hrs****Objective**

This course motivates the students to learn about digital marketing world as it currently exists, tools available for advertising, planning for online marketing and choosing a kind of strategy that help them to plan. Also this imparts knowledge on the evolution of marketing further moving into Digital arena and the revolution in the world of Marketing, the tools required for a better strategy.

Unit I

The evolution of digital marketing - technology behind digital marketing – the need for digital marketing strategy, business and digital marketing, defining digital marketing strategy Understanding the digital consumer - the website – the hub of the digital marketing world - Building an effective website - the main steps of building a website - choosing the domain name Hosting – the website's home on the internet -Arranging the information writing effective web content.

Unit II

The online marketer - about the engines - Optimizing the site for the engines - Advertising on the search engines - Black Hat, the darker side of search - Bringing in the pros - Universal search - more opportunities to rank - Website intelligence and return on investment. Measuring the way to digital marketing success - How information is measured - Measuring what's important, Testing, investing, tweaking, reinvesting - Action stations -Harness the power of online data, and watch the ROI take off.

Unit III

E-mail marketing - the new direct mail - Concept of e-mail marketing - Planning the campaign - Dos and don'ts of an e-mail marketing campaign - Measuring the success - a vital component of digital marketing - Social media and online consumer engagement - Introduction to social media? - The different forms of social media - the rules of engagement - Adding social media to the own site - Online PR and reputation management - fostering a positive online image - promoting the business through online channels.

Unit IV

Affiliate marketing and strategic partnerships - Introduction to affiliate marketing - Digital media creative - Creative application of digital media - Using an agency - Doing it them self - Digital creative: working concept.

Word of mouth: savvy consumers control the future Search: a constantly evolving marketing powerhouse - Mobile: marketing on the move - Tracking and measuring human behavior -In-game advertising.

Reference Books:

1. Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation, Damian Ryan, Calvin Jones ,Kogan Page, 1 edition, 2008
2. Internet Marketing for your Tourism, Susan Sweeney, CA, 2005, New age International (P) Limited Publishers, New Delhi.
3. Marketing Management, Dr. Radha,2008
4. Embedding Perl in HTML with Mason, Dave Rolsky and Ken Williams (HTML with commentary at masonbook.com)
5. Internet Marketing: Strategy, Implementation and Practice (Paperback), Dave Chaffey, Richard Mayer, Mr. Kevin Johnson, Fiona Ellis-Chadwick.
6. Local Online Advertising for Dummies, Court Cunningham and Stephanie Brown, Wiley Publishing Inc., 2010.

Web Sites:

1. <https://www.coursera.org/specialization/digitalmarketing>
2. www.digitalvidya.com
3. www.marketingsay.com

BCA 1432**Operating System with UNIX****4hrs****Objective**

The objective of this course is to learn fundamental concepts and algorithms that are used in the existing commercial operating systems. The aim is to present these topics in a general setting that is not tied to one particular operating system. Throughout the course, practical aspects that pertain to the most popular operating systems such as Unix/Linux and Windows, and mobile Operating Systems will be discussed.

Unit – I

Introduction – History – Operating System Environment – Components and Goals – Input and output devices – Process Concepts - Definition of Process- Process States; Life Cycle of a Process - Process Management - Process States and State Transitions – Process Control Blocks – Process Operations – Suspend and Resume. Inter process Communication- Signals – Message Passing.

Unit – II

Thread Concept - Introduction - Definition of Thread – Thread States - Life Cycle of a Thread - Thread Operations - Threading Models – Thread Implementation - Introduction Mutual Exclusion- Implementing Mutual Exclusion Software Solutions to the Mutual Exclusion Problem- - Hardware Solutions to the Mutual Exclusion Problem– Semaphores.

Unit III

Monitors–Information Hiding- Monitor Example - Deadlock - Introduction- Examples of Deadlock- Deadlock Prevention- Deadlock Avoidance with Dijkstra's Banker's Algorithm- Deadlock Recovery Deadlock Strategies. Processor Scheduling – Introduction – Scheduling Levels – Pre emptive and Non Pre emptive Scheduling Algorithms.

Unit IV

Physical and Virtual Memory – Memory Organization – Management – Hierarchy – Memory Management Strategies. Fixed Partition and Variable Partition Multiprogramming – Virtual Memory Organization – Paging and Segmentation - Demand Paging and Page Replacement Strategies.

Unit V

Disk Performance Optimization – Disk Scheduling Strategies. Unix Commands and Shell programming.

Reference books:

1. Operating Systems, H.M. Deital and P.J. Deital, D.R. Choffnes, 3rd Edition, Pearson Prentice Hall. 2004.
2. Mastering Unix Shell Scripting: Bash, Bourne, and Korn Shell Scripting for Programmers, System Administrators, and UNIX Gurus, Randal K. Michael, John Wiley & Sons, 2011
3. UNIX and SHELL Programming - simpleNeasyBook by WAGmob, 2014
4. Operating System Concepts, Silberschatz, Galvin and Gagne, Wiley India Pvt Ltd, 9th Edition, 2013.
5. Operating Systems: Internals and Design Principles, William Stallings, Pearson Education, -2014
6. Guide to Operating Systems, Michael Palmer, Michael Walters, Cengage Learning, 2011
7. An Introduction to Operating Systems: Concepts and Practice, Pramod Chandra P. Bhatt, PHI Learning Pvt. Ltd., 2010
8. Operating Systems A Spiral Approach, Elmasri, Carrick, Levine, Tata McGraw Hill India Publishers, 2010

Reference Websites

1. www.tutorialspoint.com/operating_system
2. os-book.com
3. <http://www.computerhope.com/jargon/o/os.htm>

BCA 1534

Object Oriented Programming using C++

5hrs

Objective

The objective of the course is to enable the students to understand the fundamental concepts of object-oriented programming and enable them to apply the concepts into the real world problem using c++.

Unit I

Introduction to object oriented programming - Need for OOP- Characteristics of OO languages - Output using cout- Input with cin- Type bool- The setw manipulator- Type conversions- Returning values from functions. Reference arguments. Overloaded function. Inline function. Default arguments. Returning by reference. Core object concepts (Encapsulation, Abstraction, Polymorphism, Classes, Messages Association, Interfaces) Implementation of class in C++, C++ Objects as physical object, C++ object as data types constructor. Object as function arguments. The default copy constructor, returning object from function. Structures and classes. Classes objects and memory static class data. Const and classes. Arrays of object, string, the standard C++ String class.

Unit II

Overloading unary and binary operators, data conversion, pitfalls of operators overloading and conversion keywords. Concept of inheritance. Derived class and based class. Derived class constructors, member function, inheritance in the English distance class, class hierarchies, inheritance and graphics shapes, public and private inheritance, aggregation: Classes within classes, inheritance and program development.

Unit III

Address and pointers. The address of operator and pointer and arrays. Pointer and Faction pointer and C-types string. Memory management: New and Delete, pointers to objects, debugging pointers. Virtual Function, friend function, Static function, Assignment and copy initialization, this pointer, dynamic type information. Streams classes, Stream Errors, Disk File I/O with streams, file pointers, error handling in file I/O with member function, overloading the extraction and insertion operators, memory as a stream object, command line arguments, and printer output.

Unit IV

Systems – Role of System Analyst –SDLC –Feasibility Analysis –Fact Finding Techniques – SSAD – ER Diagrams – DFD – Decision Table – Decision Trees – Structured English – Case Study. System Design – Application Architecture and Modelling – Database Design – Input and Output Design – User Interface Design – System Construction and Implementation – System Operations and Support – Case Study

Unit V

OOAD – Comparison of SSAD and OOAD – Modelling as a Design Technique – Object Modelling – Dynamic Modelling – Functional Modelling – Object Design – OOD Design Process – Case Study.

Reference Books:

1. Object Oriented Programming in C++ , E. Balaguruswamy, TMH Publishing Co. Ltd.,2013 6th Edition
2. The C++ Programming Language, Bjarne Stroustrup, 2013, Addison Wesley.

3. Principles and Practice Using C++, Bjarne Stroustrup, Addison-Wesley Professional, 2014
4. Object Oriented Analysis & Design, Grady Booch, Pearson, 3rd edition (2009)
5. Systems Analysis and Design, Gary Shelly, Harry J. Rosenblatt, Cengage Learning, 2010
6. Object-Oriented Analysis and Design, Sarnath Ramnath, Brahma Dathan, Springer Science & Business Media, 2010
7. Object Oriented Analysis and Design Using UML, D. Jeya Mala, S. Geetha, Tata McGraw-Hill Education, 2013

Web site:

1. ooaduml.com
2. www.tutorialspoint.com/object_oriented_analysis_design/index.htm
3. oadonline.hpage.com/

BCA 1436

C++ Lab

4hrs

1. Class and Object.
2. Constructor and Destructors
3. Overloading.
4. Single and Multiple inheritances.
5. Hierarchical inheritance.
6. Inline function.
7. Friend function.
8. File concept.
9. Case Study on SAD & OOAD
10. Implementation of OOAD using C++

BCA 1232

Web Programming

3hrs

Objective: This course deals with web page designing by using the techniques in web programming. It contains HTML, Java Script, and Dream weaver. After completing this course a student will be able to design their web pages and place them in the web.

Unit I

Introduction to internet: Internet architecture - Basic concepts - Web server- Web client - Internet Services- Internet protocol-Remote Access and Transactions-Electronic Mail.

Unit II

Introduction to HTML: Mark-up languages - Basic tags - Formatting - images - lists - Tables - Frames - Links - Forms. Style Sheets: CSS-Introduction to Cascading Style Sheets-Features-Core Syntax-Style Sheets and HTML Style Rule Cascading and Inheritance-Text Properties

Unit III

Dynamic HTML - Introduction to Java script: Variables - Data types - Statements-Operators - Control statements - Object based programming - Java script with HTML.

Unit IV

Java script objects - DOM - JS Browser detection – JS Cookies - JS Validation - JS Animation - JS image maps - JS Timing – JS create Objects - creating menu and slideshow using

Unit V

Dream weaver Concepts – designing Web Page with Dream Weaver. Website maintenance - types of service providers - web hosting - maintenance and other commercial issues.

Reference:

1. Ivan Bayross, Web Enabled Commercial Application Development using HTML, JAVASCRIPT, DHTML and PHP, BPB Publications, 4th Edition 2010.
2. Html5 Black Book by Kogent Learning Solutions Inc. Released 2011
3. Deitel,Goldberg, "Internet & World Wide Web How to Program", 3rd Edition, Pearson Education, 2006.
4. Macromedia Dream Weaver MX 2004, Macromedia Press 2004.
5. Robert. W. Sebesta, "Programming the World Wide Web", fourth Edition, Pearson Education, 2007

Website:

1. www.w3schools.com
2. www.tutorialspoint.com
3. www.teacherclick.com

BCA 1234 Multimedia Technology and Applications**3 Hrs****Objective:**

The aim of this course is to combine audio and video with text, image, graphics and animation. This integration of media provides the possibility for a spectrum of new applications.

Unit I

Introduction to Multimedia- context and copyright-resources for multimedia developers-types of products-evaluation-computer architecture standards-operating systems and software-multimedia computer architecture. Elements of text-text data files-using text in multimedia applications-hypertext-graphics-elements of graphics-images and color-graphics file and applications formats-obtaining images for multimedia use-using graphics in multimedia applications.

Unit II

Digital audio –characteristics of sound and digital audio-digital audio systems-MIDI_audio file formats-using audio in multimedia applications.

Unit III

Introduction to Photoshop – working with Photoshop – processing the image using Photoshop techniques-layers-filter.

Unit IV

Introduction To Animation- How flash works- Flash tool box – creating objects – drawing characters for cartooning editing objects – Colours and text- symbols and instances – bitmaps.

Unit V

Flash And Layers- Animation in flash key frame animation , tweened animation - Motion tween, shape tween-guide layers- Masking-Publishing in flash- action Script.

References:

1. Hillman,David - Multimedia technology and applications-Galgotia publications pvt ltd-2001.
2. Shuman,J.E, Multimedia in action-Thomson Asia pvt ltd-2001.
3. Halsal,fredl.,-Multimedia communications-Pearson education pvt ltd-2003.
4. L.P. Editorial Board, First Lessons in Flash CS4

BCA 2531**Data Structures using C++ (T+L)****5hrs****Objective**

To enable the students to understand the fundamentals of Data Structures, Abstract concepts and how these concepts are used in problem solving and to expose students about algorithmic thinking and problem solving and impart moderate skills in programming. To create and use new, simple and complex data types within C .

Unit I

Introduction to Data structures: Definition- Classification of data structures: primitive and non-primitive- Operations on data structures-Dynamic memory allocation and pointers: Definition- Declaring and initializing pointers- Memory allocation functions: malloc, calloc, free and realloc-Arrays-Structures.

Unit II

Stack: Implementation-stack operations-Applications of a stack: Polish notations –Infix, Postfix and Prefix notations- Conversion of an arithmetic expression from Infix to postfix Recursion. Queue: Definition-Implementation -Types of queue simple queue, circular queue, double ended queue--operations on queue-applications of a queue

Unit III

Linked list: Definition – Advantages and Disadvantages of linked list –Singly Linked List-Doubly linked list-circularly linked list-Doubly circular Linked List-Operations on Singly Linked List-Applications of linked list-Trees: Definition- Tree terminology, Types of Trees-Binary tree : Creation of binary tree- Representation-Traversal of Binary Tree : Preorder, Inorder and Postorder-applications of tree.

Unit IV

Binary Search Tree: Definition-Operations on BST-Application of BST - Huffman code-Graph: Definition-Terminology- shortest path-spanning tree-Searching.

Unit V

Sorting: Searching techniques: sequential search, Binary search –Sort: Definition- Bubble sort, Selection sort, Merge sort, insertion sort, Quick sort.

Reference Books:

1. Fundamentals Of Data Structures In C++, Ellis Horowitz, Sahni, Dinesh Mehta, Galgotia Publications, 2006
2. Data structures, A.Chitra, P.T Rajan, Tata McGraw Hill Education[India] Pvt.,Ltd 2006
3. Data structures and programming design in C, Robert L.Kruse, Clovis L.Tondo, Bruce P.Leung, Prentice Hall of India Pvt LTD, 2007
4. Data structures with C, Seymour Lipschutz, Tata McGraw Hill publishing 2011.
5. Design and analysis of algorithms, i. Chandra mohan, PHI Learning Pvt Ltd, 2012
6. Data Structures and Algorithms in C++, Joshi, Tata McGraw-Hill Education, 2010
7. Computer Algorithms, Ellis Horowitz, Sartaj Sahni, Sanguthevar, Rajasekaran, Silicon Press, 2008

Web sites:

1. <http://www.cprogramming.com/algorithms-and-data-structures.html>
2. <http://freevideolectures.com/Course/2279/Data-Structures-And-Algorithms>
3. <http://discuss.codechef.com/questions/48877/data-structures-and-algorithms>

BCA 2533**Dot Net Programming****5hrs****Objective**

Dot Net is a world-shattering advance in programming technology platform that greatly simplifies rich internet web application development. This course provides in depth knowledge and skills to develop Rich Internet Web applications and it provides a deep exploration of Dot Net development philosophy and practical advice.

Unit I

Introduction to Dot Net platform-advantages of Dot Net-working of Dot Net- .basic architecture of net frame work-common language run time-common language specification-unified programming classes-security in Dot Net-CLR: Meta data –assembly-MSIL-Just in Time compiler-class loader-verifier-architecture of CLR-features of CLR.

Unit II

VB.NET: Visual studio .net IDE-Programming concepts-writing procedures-OOPs in VB.net: class-object-inheritance-polymorphism-inheritance-my base class keyword-my class keyword-abstract base class-exception handling-working with forms-inheritance in forms

Unit III

Advanced window application: advanced controls-graphical application-custom window controls. Data access using ADO.NET: Overview of ODBC-UDA-ADO.NET Component model.

Unit IV

ASP.NET object model- managed provider in ADO.net –ADO.net name spaces and classes- advantages of using ADO.net-data access using ADO-using ADO.net data form wizard.

Unit V

ASP.NET: Features of ASP.net-structure of an ASP.net page-creating simple web application-using common web control-create web application using data base connectivity- web services.

References:

1. .Net Programming Black Book, Kogent Solutions Inc, Published by Dreamtech Press, New Edition, 2005.
2. Nitini pandey yesh singhal , mridula parihar " visual studio.net programming",wiley- Dream tech India (p) Ltd 2002.
3. Nikhil kothari,vandana datye " developing Microsoft ASP.NET Server Controls andComponents"Tata Mcgraw Hill publishing company limited,2002
4. Steven holzner, "Visual basic.netblack book",coriolis group book
5. David sceppa, "Microsoft ADO.net (core reference),Microsoft press,2002
6. Introducing .Net 4.0: With Visual Studio 2010 (Paperback) , by Alex Mackey , APress 2010

Website:

1. <http://wisentechnologies.com/it-courses/.net-training.aspx>
2. codemyne.net/articles/DotNet-framework-main-objectives.aspx
3. www.ajr2training.com/dot-net-training

BCA 2535 Relational Data Base Management System (T+L) 5hrs

Objective

This course on RDBMS is an end user course that provides an overview of the architecture, functions, and benefits of a database management system and discusses various database models. The course describes the data structure of a relational database model in detail. It extensively covers the normalization process and compares SQL with other popular relational databases. After completing this course, the student will have a comprehensive overview of the database systems, Relational model, SQL and Transactions.

Unit I

Introduction: Purpose of database systems - view of data - data models – database languages - transaction management - storage manager - database administrator and database users - overall system structure. E-R model: E-R diagram – constraints – keys - weak entity sets - Extended E-R features - design of an E-R database scheme – Reduction of an E-R Schema to tables.

Unit II

Relational model: structure of relational databases - the relational algebra – Extended Relational algebra operations - tuple relational calculus - domain relational calculus –medication of the database - views. Relational commercial languages: SQL- Basic structure, set operations, aggregate functions, null values - query-by-example – domain constraints, referential integrity - assertions – triggers – security and authorization – authorization in SQL - encryption and authentication.

Unit III

Relational database design: First normal form - pitfalls in relational database design -functional dependencies – Decomposition - Boyce-codd normal form, third normal form, and fourth normal form – de normalization. Object-oriented databases: Object-Oriented Data Model – Object-Oriented Languages – Persistent Programming Languages.

Unit IV

Transactions: Transaction concept – Transaction state – implementation of atomicity and durability – concurrent executions – serializability – recoverability – implementation of isolation – transaction definition in SQL – testing for serializability.

Unit V

Recovery system: failure classifications - storage structure – Recovery and atomicity - log based recovery – shadow paging - recovery with concurrent transactions – buffer management - failure with loss of non-volatile storage. Introduction to DataMining and Data WareHousing.

Reference Books:

1. Database Management System Concepts, N.F.Korth and A.Silberschatz, S.Sudarshan, 4/e, McGraw Hill Inc., 2002.
2. An Introduction to Database Systems, B.C. Desai, Galgotia Publications, New Delhi, 1995.
3. Fundamentals of Database Systems, R.Elmasri and S.B. Navathe Benjamin Cummings, Redwood City, 1994.
4. Database Management, Gordon C.Everest, TataMcGraw-Hill, NewDelhi, 2001.
5. Database Principles, Programme & performance – Patrick O’Neil, Elizebeth O’Neil, A hartcourt, 2006

Websites:

1. rdbms.ca/database/introduction.html
2. www.w3schools.com/sql/sql_intro.asp
3. www.cramerz.com/database_concepts/dbms_and_rdbms

BCA 2437**Dot Net Lab****4hrs**

1. NET (vb.net or c#) program for Feedback form
2. Create a DOT NET for displaying the images with clear option
3. Write Web Controls to display in Web form
4. Prepare a button-click option to display a label3.
5. Write mouse move over to change button color
6. Create list box to display the selected item cost in web form2. Create another label to display the total cost3. Write a Java script program to display a calendar 4. Write a Java Script code to display advertisements as hyperlink
7. Write a DOT NET program to calculate Boiling point of water using Compare Validator
8. Create a DOT NET program for User input name validation using Required Field Validator
9. Write a DOT NET program Checking the appropriate values using Validation button
10. Create a form to validate the controls getting user inputs
11. Create an application with content buffered
12. Creating a file holding variables, hyperlinks with lock & unlock methods
13. Display a message when connection established with Database
14. Write a Program to create a table in Master Database
15. Updating the fields of a table in Database

16. Selecting the rows from a table in Database
17. Retrieving the Result in Dataset & Checkbox List by selecting a field
18. Bind the dataset to a Radio button list with different forms
19. Create a Table header fields in the form of drop down list

BCA 2532**Software Engineering****5hrs****Objectives**

This course make the students to understand Software requirements, specification, Software design techniques for developing large software systems, CASE tools and software development environments, Software testing, documentation and maintenance and also to train the students to analyze, estimate & design new software with quality standards and to understand, modify and maintain.

Unit I

Software Characteristics – Introduction to Software Engineering – Factors influencing quality and productivity – Software Process CMM – PSP – TSP – Software Engineering Models – Cost Estimation – Feasibility Analysis – Software Project management.

Unit II

System Engineering – Requirements - Documents – Requirements Elicitation – Requirements Analysis and Negotiation – Requirements Validation – Requirements Management.

Unit III

System Analysis – Information Flow Analysis – DSSD-OOA- Use Case Modeling – Class Modeling – Dynamic Modeling – Design Engineering – Creating Architectural Design – Modeling Component level design – User Interface design – Transform and Transaction Analysis – OOD.

Unit IV

Testing Principles – Testing Strategies – Unit Testing – Integration Testing – White Box Testing -Black Box Testing – OOTM – Domain Testing .Implementation.

Unit V

Software Maintenance – Issues in Maintenance – Change Management – Software Quality and Quality Assurance – Human Factors in Software Engineering – Introduction to Web Engineering.

Reference:

1. Roger S Pressman, "Software Engineering A Practisener Approach" McGrawHill, 6th Edition, 2005.
2. Ian Sommerville, "Requirements Engineering", Johnwiley, 1998.
3. Stephen R. Schach, "Object Oriented and Classical Software Engineering", Tata Mcgraw Hill 5th Edition.
4. Watts S. Humphrey, "A Discipline for Software Engineering", Pearson Education, 2001.
5. K.K. Agarwal and Y. Singh, Software Engineering (revised 2nd ed.), New Age International Publishers, 2006.

Websites:

1. www.tutorialspoint.com/software_engineering

2. www.jkinfoline.com/software-engineering.html
3. <https://www.wiziq.com/tutorials/software-engineering>

BCA 2534**Computer graphics using open GL****5hrs****Objective**

This course makes the students to learn the basic principles and techniques of the field and who also want to write substantial graphics applications themselves and also help to implement computer graphics programming and exploring various techniques to implement two dimensional and three dimensional.

Unit I

Overview of computer graphics – Display devices – Output Primitives – Points and Lines – Line drawing algorithms – Circles and ellipses generating algorithm- Other Curves – Character Generation – Attributes- Colour filling

Unit II

Introduction to Transformations- 3D affine Transformations - Two-Dimensional Transformation – Transformation – Matrix representation and homogenous co-ordinates.

Unit III

3 D Concepts – 3 D co-ordinates systems – 3D display techniques – 3D transformations – 3D viewing – Windowing and Clipping – Projection

Unit IV

Introduction to OpenGL – Overview – line draw – filling polygons – circle -Implementing 3D concepts.

Unit V

Introduction to Ray Tracing – Ray tracing process- Ray tracer Application- Antialiasing Ray Tracing- reflections and transparency case studies.

References:

1. F.S. Hill, Jr. Stephen M. Kelley, Jr. Computer Graphics using OpenGL, PHI Learning Private Limited, New Delhi, 2009
2. Donald Hearl, Pauline Baker M., Computer Graphics, Prentice Hall of India, New Delhi, 2005
3. William Newman, Sproul F, Principles of Interactive Computer Graphics Prentice Hall of India ,2003
4. John F Koegel Buford – Multimedia Systems – Pearson Education 2001
5. Computer Graphics, Shalini Govil-Pai, Springer (India) Private Limited, 2007

Web Site:

1. www.4twk.com/shill/3rd-edition.html
2. www.cse.iitm.ac.in/~vplab/courses/CG/PDF/OPENGL_BASIC.pdf
3. <https://www.opengl.org/documentation/books/>

BCA 2536**Java Programming****5hrs****Objective**

The Objective of this course is to introduce the programming techniques in Java, oops concepts, java applet, awt, multithreading, io streams, data base connectivity and swing components. It enriches the creativity of GUI applications using java.

Unit I

Java Fundamentals -Features of Java-OOPs concepts-Java virtual machine-Reflection byte codes -Byte code interpretation-Data types, variable, arrays, expressions, operators, and control structures Objects and classes

Unit II

Java Classes-Abstract classes-Static classes-Inner classes-Packages-Wrapper classes-Interfaces-This -Super-Access control - Exception handling - Exception as objects-Exception hierarchy- Try catch finally- Throw, throws

Unit III

IO package -Input streams-Output streams-Object serialization-Deserialization-Sample programs on IO files-Filter and pipe streams - Multi threading- Thread Life cycle-Multi threading advantages and issues-Simple thread program-Thread synchronization-Inter Thread Communication

Unit IV

GUI-Introduction to AWT programming -Layout and component managers-Event handling-Applet class- Applet life-cycle-Passing parameters embedding in HTML-

Unit V

Swing components - JApplet, JButton, JFrame, etc.Database Connectivity-JDBC architecture-Establishing connectivity and working with connection Interface-Working with statements-Creating and executing SQL statements-Working with Result Set

References:

1. Java - The Complete Reference (English) 9th Edition, Herbert Schildt, 2014
2. Programming with Java A Primer, E. Balaguruswamy Tata McGraw Hill, 2009
3. Java Programming John P. Flynt Thomson 2nd, 2008.
4. Java Programming Language Ken Arnold Pearson, 2005, 4th edition.
5. Beginning Programming with Java For Dummies , 2014, Burd
6. Java Programming: A Beginners Guide to Learning Java, Troy Dimes, 2015, CreateSpace Independent Publishing Platform

Website:

www.tutorialspoint.com/javaexamples
www.vogella.com/tutorials/JavaIntroduction/article.html
<https://www.udemy.com/java-tutorial>

BCA 2438**Java Lab****4hrs**

1. Programs using constructor and destructor.
2. Creation of classes and use of different types of functions.
3. Count the number of objects created for a class using static member function.
4. Concept of interface.
5. Concept of package,
6. Function overloading.
7. Concept of inheritance.
8. IO streams & Files.
9. Exception handling mechanism.
10. AWT
11. Swing and JDBC.
12. 3 – tier Program using RMI
13. Web Application using Servlet
- 14 Web Application Using JSP
15. N tier application using AJAX.
16. Mini Project **Evaluation Pattern – 40 marks**

Students must do the following during summer vacation. Either a Hardware training or a real time Application Project on site has to be developed with the guidance of the Faculty members and viva voce will be conducted in the beginning of the next semester.

BCA 3631**Internet Technology****6hrs**

Objective

This course make the students to understand surfing the web and trying to figure out how specific functionality was brought to a website and moulds the student to learn and develop various php technology applications that definitely meets the current industry needs.

Unit I

HTML - The Static Web Page Creation- The Head- The Body- Lists- Tables- Forms & Form Elements- Link- Images- Tag Attributes- CSS - The Presentation Semantics- CSS Properties- Style Sheets- Styling with Classes- Styling with IDs- When to Use a Class and When to Use an ID- Linking to CSS in an External File- Using the style Attribute

Unit II

Interpreted Programming Languages- Integrating -JavaScript with HTML- Variables in JavaScript- Operators in JavaScript-- Expressions in JavaScript- Arrays in JavaScript-

Handling Loops & Decision structures - Understanding jQuery-jQuery Selectors- Event Manipulation Methods- Sliding, Easing, Fading, Toggling - jQuery and AJAX calls

Unit III

Introduction to web & internet - Introduction to server- Understanding localhost server- Starting PHP- The Core Logics and Techniques- String and Math functions in PHP- Introduction HTML Form Elements and Fields - Accessing PHP, HTTP Data- Query Strings and Hyperlinks- Describing Pre-Defined Variables - Important PHP Functions - What are the Scope of variables- Usage of Include and require statements-PHP – File Handling. The Plain Repository of Data-Handling files and directories in PHP- Fetching information from files- Uploading and downloading files

Unit IV

PHP and MySQL - The Structured Repository - PHP MySQL Connectivity - Integrating Web Forms and Database- Using PHP's MySQL Extension - Using PHP's PDO Extension-

Unit V

Working with XML and JSON- Introduction to XML -How to Integrate PHP and XML- - Introducing a CMS- Knowing how to configure the CMS - Working with the CMS- Sample Web Application Development using WordPress- Code Igniter Framework- Introduction to PHP Frameworks - Working with Code Igniter Framework -MVC architecture in Code Igniter

References

1. Jeffrey C. Jackson, "Web Technologies--A Computer Science Perspective", Pearson Education, 2006.
2. Shroff/O'Reilly; First edition (5 December 2011) - PHP & MySQL: The Missing Manual-2011
3. Robert. W. Sebesta, "Programming the World Wide Web", Fourth Edition, Pearson Education, 2007.
4. 2. Deitel, Deitel, Goldberg, "Internet & World Wide Web How to Program", Third Edition, Pearson Education, 2006.
5. Marty Hall and Larry Brown, "Core Web Programming" Second Edition, Volume I and II, Pearson Education, 2001.
6. Html5 Black Book by Kogent Learning Solutions Inc. Released 2011
7. Html & Css: The Complete Reference 5th Edition

Web Site

1. <http://www.phpmyadmin.net>
2. <http://www.thesoftwareguy.in/>
3. <http://www.php.net>

BCA 3633

Computer Networks using Simulator

6hrs

Objective:

The main objective of this course to have knowledge about the fastest growing technology Networking, Protocols and Standard and Networking Models.

Unit I

Introduction - Network Models - Physical Layer and Media Data and Signals - Digital Transmission Analog Transmission -Bandwidth Utilization: Multiplexing and Spreading-Transmission Media -Switching - Using Telephone and Cable Networks for Data Transmission.

Unit II

Data Link Layer - Error Detection and Correction - Data Link Control - Multiple Access - Wired LANs: Ethernet - Wireless LANs - Connecting LANs, Backbone Networks, and Virtual LANs - Wireless WANs: Cellular Telephone and Satellite Networks - Virtual-Circuit Networks: Frame Relay and others.

Unit III

Network Layer-Network Layer: Logical Addressing -Network Layer: Internet Protocol - Network Layer: Address Mapping, Error Reporting and Multicasting - Network Layer: Delivery, Forwarding, and Routing - Transport Layer -Process-to-Process Delivery: UDP, TCP, and SCTP -Congestion Control and Quality.

Unit IV

Application Layer - Domain Name System Remote Logging, Electronic Mail, and File Transfer - WWW and HTTP -Network Management: SNMP -Multimedia.

Unit V

Network simulator – Background on ns – Characteristics of ns – Installation process for ns – The starting point – A test script for ns – Creating the network nodes – Creating TCP traffic – Creating UDP traffic – Polling the Loss Monitor – Creating UDP traffic – Wireless extensions – Simulation of two wireless nodes – Simple wireless simulation – Configuring the wireless/phy – Important initialization variables – Creating the mobile nodes – Adding movement to the nodes – Tracing the node movement and traffic information – new trace format - ns-2 can be modified – for more internals and how to modify ns -

Reference Books

1. Data Communications and Networking, Behrouz A. Forouzan, 2nd, Edition, 2014.
2. GNS3 Network Simulation Guide, "Red Nectar" Chris Welsh, Packt Publishing, 2013.
3. Computer Networks (5th Edition) Hardcover, Andrew S. Tanenbaum , David J. Wetherall 2010
4. Computer Networks, 5th Edition, A Systems Approach, Peterson & Davie, 2011
5. Computer Networking : Principles, Protocols and Practice Release 0.25, Olivier Bonaventure, The Saylor Foundation, 2011.
6. Internetworking with TCP/IP Volume One, 6/E, Douglas E. Comer, 2014 , Pearson ,Cloth.
7. Internetworking With TCP/IP Volume 1: Principles Protocols, and Architecture, 6th edition, 2013, Douglas Comer

Websites:

1. www.elsevier.com › Browse journals › Computer Networks
2. en.wikipedia.org/wiki/Computer_network
3. www.techtutorials.net

BCA 3635**Introduction to R Language****6hrs****Objective**

This course is an introduction to the R programming language for the student who expects to have hands-on R programming skills. This course covers creating data, importing data, accessing subsets of data, exporting data, plotting and graphing, loops and functions. The primary objective of this course is not to teach statistics but only to provide a basic knowledge of R that would help master the statistical tools available in R. Also to have a brief outline on the concepts of Cloud Computing and Big Data Analytics.

Unit I

Introduction to R - Downloading and Installing R - Script Code - The Art of Programming - Documenting Script Code - Graphing Facilities in R - Editors - Help Files and Newsgroups - Packages - Packages Included with the Base Installation - Packages Not Included with the Base - Installation - General Issues in R - Quitting R. Getting Data into R, First Steps in R - Typing in Small Datasets.

Unit II

Combining Data Using a Matrix - Combining Data - Frame Function - Combining Data Using the list Function - Importing Data - Importing Excel Data - Accessing Data from Other Statistical Packages - Accessing a Database - Accessing Variables and Managing Subsets of Data - Accessing Variables from a Data Frame - The str Function - The Data Argument in a Function - The \$ Sign and Functions.

Unit III

Simple Functions, The tapply Function - Calculating the Mean Per Transect - Calculating the Mean Per Transect - The sapply and lapply Functions - The summary Function - The table Function - An Introduction to Basic Plotting Tools - The plot Function - Symbols, Colours, and Sizes - Changing Plotting Characters - Changing the Colour of Plotting Symbols - Altering the Size of Plotting - Symbols - Adding a Smoothing Line - Loops and Functions.

Unit IV

Importing and Assessing the Data - Total Abundance per Site - Richness per Site - Shannon Index per Site - Combining Code - Putting the Code into a Function - Graphing Tools - The Pie Chart - Pie Chart Showing Avian Influenza Data - The par Function - Bar Chart and Strip Chart - Boxplot.

Unit V

Introduction To cloud - Virtualization concepts - Types of Virtualization & its benefits - Introduction to Various Virtualization OS - Cloud Fundamentals - Cloud Building Blocks -

Understanding Public & Private cloud environments – Introduction to Big Data and its role in the corporate world - Recognize the phases of development of a Big Data strategy within a corporation - the rationale underlying a holistic approach to Big Data.

References:

1. A Beginner's Guide to R - Zuur, Alain, Ieno, Elena N., Meesters, Erik, 2009, Springer-Verlag New York.
2. "R" integrated with Symphony, Parmar, Onkar , Platform Computing Corporation, 2013.
3. "Calling Functions in the R Language (SAS/IML)", 2013.
4. "Unleash the agility of R for the Enterprise", Tibco, 2014.
5. Programming with Big Data in R, Ostrouchov, G., Chen, W.-C., Schmidt, D., Patel, P., 2012.
6. Using the R Language Platform, StatSoft Inc, 2013.

Websites:

1. www.springer.com/gp/book/9781493917013
2. decisionstats.com/2010/11/10/cloud-computing-with-r
3. www.r-statistics.com/2013/.../analyzing-your-data-on-the-aws-cloud

BCA 3537

Internet Technology Lab

5hrs

1. HTML Basic Tags
2. Example for Table Tag
3. HTML Formatting Tags
4. HTML Frame
5. HTML Input Tags
6. Image Map
7. Style Sheet
8. Form Validation
9. MYSQL Commands (DDL, DML, TCL, DCL)
10. PHP Program with Data base Connectivity
11. Cookies
12. Session Object
13. Error Object

BCA 3233 Societal Implications in Nanotechnology

3 hrs

Objective:

The ultimate aim of this course is to have deeper understanding of the Nanotechnology and the basic concepts involved in this technology and to explore their limitations.

Unit I

Introduction to Nanoscience and Nanotechnology-Historical Perspective-fabrication methods-Tools of Nano-Nature and Nano – Nanomaterials-Devices-Applications- Benefits-Challenges in Nanotechnology.

Unit II

Socio-Economic Impact of Nano scale Science - Managing the Nanotechnology Revolution - Navigating Nanotechnology through Society- - Nanotechnology, Surveillance, and Society - Innovations for Social Research – Nanotechnology: Societal Implications - Nanotechnology and Social Trends.

Unit III

Implications on Quality of Life - Management of Innovation for Convergent Technologies – The "Integration/Penetration Model" - Analogies for Interdisciplinary Research - Innovation, Legal Risks, and Society.

Unit IV

Ethical Issues in Nanoscience and Nanotechnology - Ethics & Law in New Frontier - An Exploration of Patent Matters Associated with Nanotechnology - Negotiations over Quality of Life in the Nanotechnology Initiative- Public Interaction Research - Communicating

Unit V

Nano technological Risks - Nanotechnology in the Media. - Interactive, Entertaining, Virtual Learning Environments – Nanotechnology in Education- Human Resources for Nanotechnology.

Text Book:

1. Mihail C. Roco and William Sims Bainbridge, "Nanotechnology: Societal Implications II – Individual Perspectives", Springer Publishers, Sponsored by National Science Foundation, ISBN-10 1-4020-4658-8.
2. W. M. Tolles, "National security aspects of nanotechnology. In Societal Implications of Nanoscience and Nanotechnology", eds. M. H. Roco, W. Bainbridge, Dordrecht, Netherlands: Kluwer (2001).
3. Nanoethics: The Ethical and Social Implications of Nanotechnology, Mihail C. Roco and Fritz Allhoff, Wiley-Blackwell, 2007
4. Societal Implications of Nanoscience and Nanotechnology, William S. Bainbridge, Springer, 2001.
5. Presenting Futures: 1 (Yearbook of Nanotechnology in Society), Erik Fisher and Cynthia Selin, Springer, 2008
6. Nanotechnology: Ethics and Society (Perspectives in Nanotechnology), Deb Bennett-Woods, CRC Press, 2008.

Web Sites:

1. http://www.wtec.org/SocietalImplications/2/si2vii_report.pdf

BCA 3632**Advanced Java Programming****6hrs****Objective:**

This course offers a multi-tiered Distributed Application Model, the ability to reuse components. It also focuses on servlets which provides a powerful mechanism for developing server side application. Hence the students are able to build and deploy applications in an internet environment.

Unit I

Servlets-Servlet Interaction & Advanced Servlets- Life cycle of Servlet- Java Servlet Development Kit - Javax. Servlet package- Reading Servlet Parameters- Reading Initialization Parameters- The javax.servlet.http Package- Handling HTTP

Unit II

JSP Technologies - Understanding the Client-Server Model- Understanding Web server software - Configuring the JSP Server - Handling JSP Errors- JSP Translation Time ErrorsJSP Request Time Errors- Creating a JSP Error Page -RMI- RMI Architecture- Designing RMI application- Executing RMI application-

Unit III

EJB- Types of Enterprise Java beans- Session Bean & Entity Bean- Features of Session Bean- Life-cycle of Stateful Session Bean Features of Entity Bean Life-cycle of Entity BeanContainer-managed Transactions & Bean-managed Transactions- Implementing a container-managed Entity Bean.

Unit IV

Introduction to XML - XML Syntax Rules – Struts- Introduction to the Apache Struts - MVC Architecture- Struts Architecture- How Struts Works?- Introduction to the Struts Controller - Introduction to the Struts Action Class- Using Struts Action From Class - Using Struts HTML Tags-

Unit V

Introduction to Struts Validator Framework- Client Side Address Validation in Struts - Custom Validators Example- Developing Application with Struts Tiles-Hibernate- Introduction to Hibernate 3.0- Hibernate Architecture-First Hibernate Application

Reference:

1. JavaProgramming – Advanced Topics, Joe Wigglesworth, Paula McMillan, 3rd edition, Course Technology, 2003.
2. Hans Bergsten - JavaServer Pages™, 3rd Edition - O'Reilly – 2013
3. Mukesh Prasad - Java Server Side Programming: The Conceptual Foundation – 2013
4. Giulio Zamboni -Beginning JSP, JSF and Tomcat: Java Web Development (Expert's Voice in Java) Paperback – Second Edition – 2012
5. Advanced Programming for the Java 2 Platform, Calvin Austin and Monica Pawlan, Addison-Wesley, illustrated edition, 2000.
6. Advanced Java 2 Platform-How to program, Harvey M.Deital and Paul J.Deital and Sean Santry, Prentice Hall, Illustrated edition, 2002.

Web Site:

1. www.developer.sun.com
2. www.javaworld.com
3. www.w3schools.com

BCA 3634**Linux programming****6hrs****Objective**

The main objective of this course is to provide Students a comprehensive overview of the Linux operating system along with Shell commands and shell scripting, Implementation of Linux System

programs through GCC compiler, Understanding of basic concept of Socket programming (TCP and UDP)

Unit I

Linux – The Operating System: Linux history, Linux features, Linux distributions, Linux's relationship to UNIX, Overview of Linux architecture, Installation, Start up scripts, system processes - Linux Security - File systems: General Characteristics of File system, file permissions. User Management: Types of users, The powers of Root, managing users (adding and deleting): using the command line & GUI tools.

Unit II

Resource Management in Linux: file and directory management, system calls for files Process Management, Signals, IPC: Pipes, FIFOs, System V IPC, Message Queues, system calls for processes, Memory Management, library and system calls for memory. Red hat package manager, RPM commands.

Unit III

Introduction to GTK – tools – commands – GTK basic programming – awk programming - Networking in LINUX: Socket Introduction, Elementary TCP Sockets (Socket Function, Connect Function, Bind, Listen, Accept, Fork and Exec), TCP Client server Example, Elementary UDP Sockets.

Unit IV

Introduction to Python Programming - Programming Python, Representing Records, Storing Records Persistently, Stepping Up to OOP, Adding Console Interaction, Adding a GUI, Adding a Web Interface, System Programming, System Tools, System Scripting Overview.

Unit V

Introducing the sys Module, Introducing the OS Module, Script Execution Context, Current Working Directory, Command-Line Arguments, Shell Environment Variables, and Standard Streams.

Reference:

1. Arnold Robbins, "Linux Programming by Examples The Fundamentals", Pearson Education, 2nd Ed., 2008.
2. Cox K, "Red Hat Linux Administrator's Guide", PHI, 2009.
3. R. Stevens, "UNIX Network Programming", PHI, 3rd Ed., 2008.
4. Programming Python, Mark Lutz, O'Reilly Media, 4th Edition, 2010.
5. "Official Red Hat Linux User's guide" by Redhat, Wiley Dreamtech India
6. "Beginning Linux Programming" by Neil Mathew & Richard Stones, Wiley Dreamtech India

Website:

1. www.linuxtopia.org
2. www.advancedlinuxprogramming.com
3. how-to.linuxcareer.com/c-development-on-linux-introduction

BCA 3636

Mobile Computing

6hrs

Objective

To impart fundamental concepts in the area of mobile computing, to provide a computer system perspective on the converging areas of wireless networking, embedded systems, and software, and to introduce selected topics of current research interest in the field.

Unit I

Pervasive Computing – Applied Pervasive Computing – Pervasive Computing Principles – Pervasive Information Technology - Devices: - Information Access Devices – Smart Identification – Smart Cards, Labels, Tokens – Embedded Controls – Smart Sensors and Actuators – Smart Appliances and Home Networking – Entertainment Systems – Television and Game Consoles.

Unit II

Language – Java Class Libraries – Java development tools – Operating Systems – Windows OS – Palm OS – Symbian OS – Java Card – Client Middleware – Programming APIs – Smart Card Programming – Message Components - Database Components. Security – Cryptographic patterns and methods – Cryptographic tools – Secure Socket Layer (SSL) – Connecting the World.

Unit III

Mobile Internet – WAP Architecture – Voice – Voice Technology Trends – Standardization – Web Services – WSDL – UDDI – SOAP – Web Services Security – Web Services for Remote Portals (WSRP) – Connectivity.

Unit IV

Wireless Wide Area Networks – DECT – Bluetooth – IRDA – Universal Plug and Play – Back-End-Server Infrastructure – Gateways – Connectivity Gateway – WAP Gateway – Application Servers – Internet Portals – B2B Portals – B2C Portals – Portal Infrastructure.

Unit IV

Device Management – Synchronization – Challenges of Synchronizing Data – Industry Data Synchronization Standards – Synchronization Solutions – New Services – Home Services – Communication Services – Home Automation – Energy Services – Security Services – Travel and Business Services - Consumer Services.

Reference

1. Principles of Mobile Computing, Uwe Hansmann, Lothar Merk, Martin S.Nicklous and Thomas Stober, Springer Professional Computing, 2nd Edition, 2008.
2. Mobile Computing Theory and Practice, KumKum Garg, Pearson Education, illustrated edition, 2010.
3. Mobile Computing and Wireless Communications, Amjad Umar, NGE Solutions, 2004.
4. Mobile Computing, Tomasz Imielinski and Henry F.Korth, Kluwer Academic Publishers, 4th 2000.
5. Mobile Computing Principles – Designing and Developing Mobile Applications with UML and XML, Reza B' Far, Cambridge University Press, 1st edition 2005.

Websites

1. www.edunotes.in/mobile-computing
2. <https://tutor4cs.wordpress.com/.../mobile-computing>
3. www.onesmartclick.com/engineering/digital-communications.html

BCA 3538**Project****5hrs**

Students should develop a Real Time Application at client site with the guidance of Internal and external guide.

Evaluation Pattern :

Internal (3 Presentations) - 75 marks

External (Final Presentation and Viva Voce) - 25 marks

BCA 3234**Advanced Excel****3hrs****Objective:**

On Successful completion of this course students will be able to use advanced graphs and presentation techniques to maximise impact, use macros and VBA automate your spreadsheets and increase interactivity, Using PivotTables and Power Pivots to turn raw data into clear information that supports key decisions

Unit I

Introduction to Excel - Formulas with Multiple Operators - Inserting and Editing a Function - Auto Calculate and Manual - Calculation - Defining Names - Using and Managing Defined Names - Displaying and Tracing Formulas - Database Functions (DSUM) - Using Lookup Functions (VLOOKUP) - User Defined and Compatibility Functions - Financial - Date & Time - Math & Trig - Statistical - Lookup & Reference - Database - Text - Logical - Information - Engineering and Cube Functions.

Unit II

Sorting by One Column, Colors or Icons - Multiple Columns - a Custom List - Filtering Data - Creating a Custom AutoFilter - Using an Advanced Filter - Creating a PivotTable - Specifying PivotTable Data - Changing a PivotTable's Calculation - Filtering and Sorting a PivotTable - Working with PivotTable Layout - Grouping PivotTable Items - Updating a PivotTable - Formatting a PivotTable - Creating a PivotChart - Using Slicers - Sharing Slicers Between PivotTables -

Unit III

Working with Data Tables - Using Goal Seek - Solver - Text to Columns - Grouping and Outlining Data - Using Subtotals - Consolidating Data by Position or Category - Consolidating Data Using Formulas - Working with the Web and External Data - Inserting a Hyperlink - Importing Data from an Access Database or Text File - Importing Data from the Web and Other Sources - Working with Existing Data Connections

Unit IV

Working with Macros - Recording a Macro - Playing and Deleting a Macro - Adding a Macro to the Quick Access Toolbar - Editing a Macro's Visual Basic Code - Inserting Copied Code in a Macro - Declaring Variables and Adding Remarks to VBA Code - Prompting for User Input - Using the If...Then...Else Statement

Unit V

Customizing the Ribbon - Customizing the Quick Access Toolbar - Using and Customizing AutoCorrect - Changing Excel's Default Options - Creating a Custom AutoFill List - Creating a Custom Number Format.

Reference Books:

1. Excel 2013 Bible, Walkenbach, Illustrated, John Wiley & Sons, 2013
2. Excel 2013 Formulas, Walkenbach, John Wiley sons, 2013
3. Business Math Using Excel, Sharon Burton, Nelda Shelton, Cengage Learning, 2011.
4. Excel Dashboards and Reports, Michael Alexander, Walkenbach, John Wiley & sons, 2013
5. Advanced Regression in Excel – The Excel Statistical Master, Mark Harmon, 2011.

Web Sites:

1. chandoo.org/wp/excel-basics
2. www.gcflearnfree.org
3. <https://support.office.com/.../Excel-2013-training-courses>

HVS3200

HUMAN VALUES DEVELOPMENT

4HRS

OBJECTIVE

The aim of this course is to acquire human values and to inculcate personal identity and growth. It includes transformation of self, time and stress management, family structure, sexuality, gender and nation building. It will also address the societal concerns and its challenges.

UNIT 1:

Values – Importance of values – Internalization of values - Reasons for deterioration of values - Nation and me – Indian constitution and values – Peace in global context - Transformation of Self: Self Identity – Self Concept – Self Discovery- Self Acceptance – Self Esteem – Characteristics of people with high self esteem and low self esteem- Personality Development.

UNIT 2:

Life Enrichment Skills: Goal Setting – Characteristics of Goals – Time Management – Stress Management – Problem Solving – Decision Making- Dynamics of inter-personal relationships: Building relationships – Emotional Management – Conflict Management- Negotiation- Assertiveness.

UNIT 3:

Life values: Forgiveness – Unforgiveness – Fruits of Bitterness – Integrity - Hard work – Trust Worthiness – Lies – Good Money and Bad Money – Humility – Pride – Substance Abuse – Spectrum of effects of substance abuse – Smoking and its effects – Internet and its addictions.

UNIT 4:

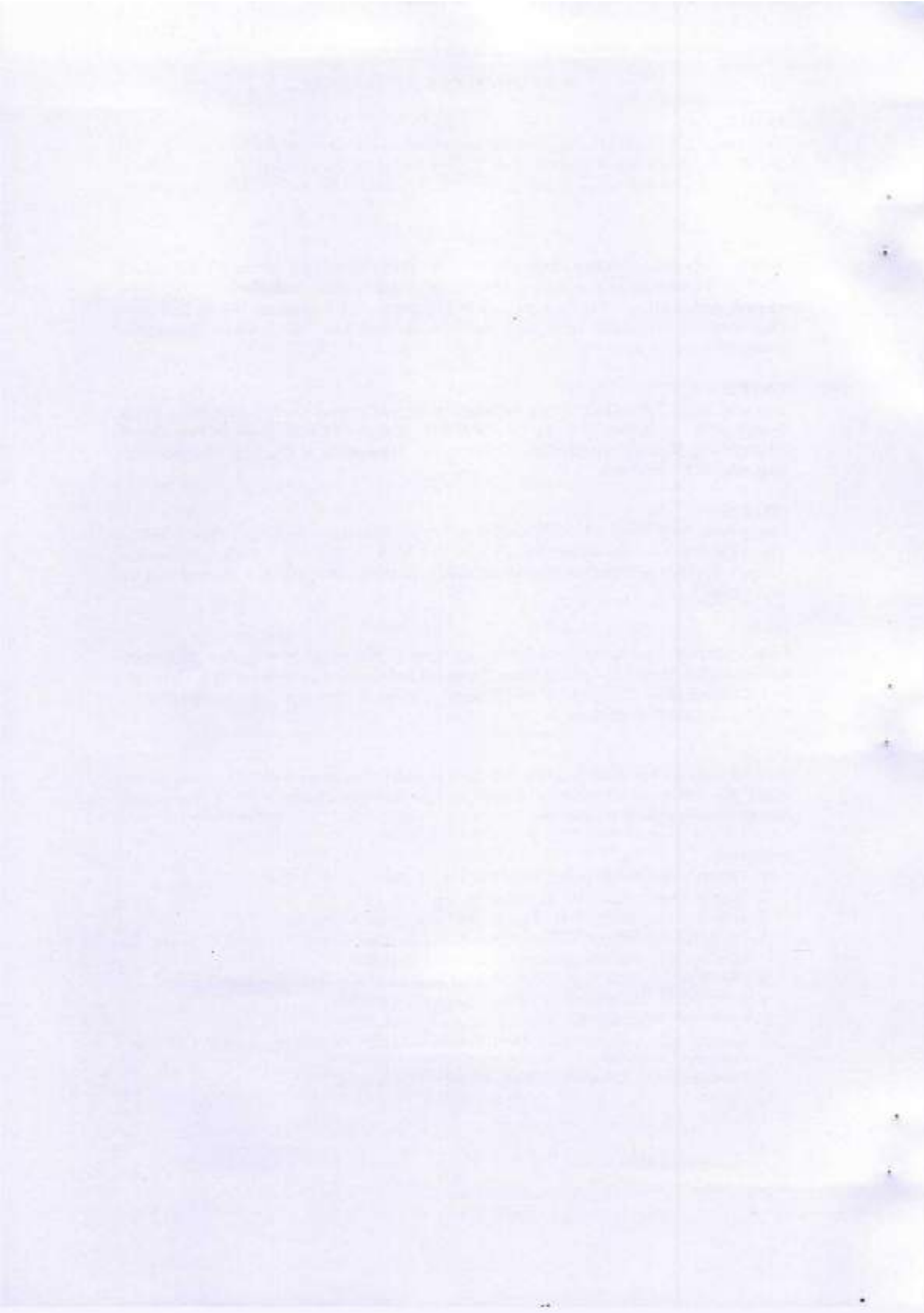
Family structure: Fragmentation of family structure-Addressing the growing rate of divorce and separation- Youth and Consumerism- Sexuality and Gender: Gender Equality – Marriage and Contentment – Choosing of life partner – Premarital sex and its consequences – Overcoming sexual temptations.

Unit 5:

Societal concerns and challenges: Environmental issues- Corruption – Nation building and Good governance- Social values – Social justice- Emerging identity crisis- Poverty and Marginalization under globalization.

Reference:

1. Human Values Development, AIACHE New Delhi.
2. My rights and values , Dr.Reny Jacob
3. Attitude is everything, Meyer,Paul J, The leading edge publishing Co.,2006
4. Abnormal Psychology, Carson, Robert G., Butcher, James N., Mincka, Susan & Hooley, Jill M, Pearson Education, Inc New Delhi 2007
5. The Keys to the Best You: A DIY Manual to Transform Yourself, Rachna subir sen
6. Life Skills for Teenagers: EduVision Today, Dr. Rinita Jain
7. How to be a better problem solver, Michael Stevens, 1998
8. Gender Matters, Dr. Florence John. Value Education Programme, Madras Christian College, Chennai- 59
9. Managing Stress, Kristine C.Brewer, Gower Publishing Ltd,1995.



THE AMERICAN COLLEGE – COMMUNITY COLLEGE
MADURAI – 625 002
Diploma

Sem	Course No	Course Title	Hrs/wk	Cr.
I	General Education			
	END 1401	Conversational English	4	4
	CSD 1401	Fundamentals of Computers	4	4
	LSD 1401	Fundamentals of Life Coping Skills	4	4
	Skill Component			
	DML 1301	Fundamentals of MLT	4	4
	DML 1303	Human Anatomy and Physiology	4	4
	DML 1901	Lab – I	10	10
	Job Training			
	DML 1401	Internship I	120/sem	4
		Total		34
II	General Education			
	END 1402	Study skills	4	4
	CSD 1402	Office Automation tools	4	4
	LSD 1402	Performance and Life Coping Skills	4	4
	Skill Component			
	DML 1302	Clinical Biochemistry & Microbiology	4	4
	DML 1304	Haematology	4	4
	DML 1902	Lab – II	10	10
	Job Training			
	DML 1402	Internship II	120/sem	4
		Total		34

- Theory / Lab courses - 1 credit = 15 hours/Semester
- Internship – 1 credit = 30 hours/Semester

THE AMERICAN COLLEGE – COMMUNITY COLLEGE
MADURAI – 625 002
Advanced Diploma

Sem	Course No	Course Tittle	Hrs/wk	Cr.
III	General Education			
	ENA 2401	Reading and writing skills	4	4
	CSA 2401	Operating System	4	4
	LSA 2401	Coping with Psychological and Physical Issues	4	4
	Skill Component			
	AML 2301	Clinical Pathology	4	4
	AML 2303	Body fluids analysis	4	4
	AML 2901	Lab – III	10	10
	Job Training			
	DML 2401	Internship III	120/sem	4
			Total	
IV	General Education			
	ENA 2242	Career skills	4	4
	CSA 2242	Programming Techniques using C	4	4
	LSA 2242	Coping with Social and Environmental Issues	4	4
	Skill Component			
	AML 2302	Biomedical techniques	4	4
	AML 2304	Blood banking & Serology	4	4
	AML 2902	Lab – IV	10	10
	Job Training			
	AML 2402	Internship IV	120/sem	4
			Total	

- Theory / Lab courses - 1 credit = 15 hours/Semester
- Internship – 1 credit = 30 hours/Semester

END 1401**Conversational Skills****4Hrs/Wk- 4Credits**

The Course aims at helping students converse in English on the matters that matter to them in daily life. It provides the learners with ample opportunities and social contexts through conversations so that they can freely and fluently use informal English. It also exposes them to the apt vocabulary of such informal conversations.

Specific Outcomes of Learning are that the learners shall

- 1) enhance their conversational fluency as well accuracy
- 2) fine-tune their pronunciation and accent
- 3) become familiar with, and therefore effortlessly internalize, the structures of English

Unit 1

Strategies to improve conversation

Unit 2

English Pronunciation skills

Unit 3

Day-to-day matters like eating, emotions, fashion, health, friendship, money, romance

Unit 4

Housing, job, faith & hope, busy life, memory, shopping, time, traffic, travelling, vacation, weather

Text Book

Conversational Skills. Madurai: the American College, 2014

END 1402**Study Skills****4Hrs/Wk- 4Credits**

The Course aims at strengthening the learners with the necessary study skills so that they can transfer these skills on to their fields of specialization in different disciplines. It helps them harvest the benefits of learner autonomy.

Specific Outcomes of Learning are that the learners shall

- 1) change their independent study meaningful and purposeful
- 2) optimize their learning potentials both in the classroom and out of the classroom
- 3) acquire dictionary skills and improve their word power

Unit 1

Note-taking, note-making, interpreting

Unit 2

Paraphrasing, summarizing, referencing

Unit 3

Dictionary skills, vocabulary enhancement strategies

Unit 4

Time management & organizational skills

Text Book

To be prepared by the Department Faculty who will act as Course Writers and Reviewers

ENA 2401

Reading and Writing Skills

4Hrs/Wk– 4Credits

The Course aims at improving the learners' productive skills of English. It offers professional guidance on meaningful and aggressive reading experiences by familiarizing them with techniques and micro-skills of reading, comprehension abilities through literary and non-literary reading materials. It also strengthens their writing skills through the forms of writing that are useful to them academically and vocationally.

Specific Outcomes of Learning are that the learners shall

1. get training in aggressive speed reading with different sub-skills
2. improve their comprehension abilities
3. learn the formal written English

Unit 1

Reading at various speeds, skimming & scanning, inferring & interpreting, predicting, reorganizing material,

Unit 2

Comprehension skills: global, local, referential, inferential, reorganizing, prediction, evaluation

Unit 3

Writing letters of leave & job applications, business communication, resume writing

Unit 4

Paragraph writing, five-paragraph essay writing, use of discourse markers, types of writing (descriptive, argumentation, narrative)

Text Book

To be prepared by the Department Faculty who will act as Course Writers and Reviewers

ENA 2402

Career Skills

4Hrs/Wk– 4Credits

The Course aims at empowering the learners with English for employability. It provides learning experiences in the situations and skills that would be helpful to them when they start looking for employment or further higher studies.

Specific Outcomes of Learning are that the learners shall

- 1) learn certain skills that are absolutely necessary for employment
- 2) acquire creative and critical thinking skills
- 3) understand the important of interpersonal communication skills

Unit 1

English for interviews, presentation skills, Group Discussion

Unit 2

Higher order thinking skills (HOTS) like ability to learning, reasoning, thinking creatively, and decision-making.

Unit 3

Interpersonal Communication Skills, Negotiation skills like ability to understand other people's feeling and to express one's own in order to achieve a win-win outcome.

Unit 4

Problem solving skills like ability to identify and understand an issue in terms of component parts and to solve them by applying one's knowledge

Text Book

To be prepared by the Department Faculty who will act as Course Writers and Reviewers

CSD 1401**Fundamentals of Computers****4hrs/Wk – 4credits**

The course aims to develop understanding and appreciation in a broader perspective the application of the information technology. The course attempts to equip the students to compete in the present world with computer knowledge. This course includes theory and laboratory part.

Unit I: Introduction to computers

Generations of computers – components of computer -hardware – software - classification of computers – advantages and limitations -applications of computer- input and output devices – types of printers.

Unit II: Computer memory

Primary memory – secondary memory-auxillary storage devices - virtual memory – cache memory – registers- types of optical discs – CD discs – DVD discs - back up - data and information –ASCII –EBCDIC.

Unit III: Data representation on computer

Computer words – number systems - decimal number system- binary system – octal number system –hexadecimal system-binary to hexadecimal – octal to binary-hexadecimal to binary

Unit IV: Database structure

Types of database structures – comparison between the structures – database types and manners of data storage – data access control software – database management methods and techniques – data dictionary – data processing: techniques in data processing – online, batch mode, processing software tools

Textbook

Alphonse X, 2011. ICRDCE publication, December

Reference

Curtin, D. P. Foley, K.Kunalsen, Morin,C. 2002. Information Technology- The Breaking Wave, TataMcGraw Hill.

CSD 1402

Office Automation Tools

4hrs/Wk – 4credits

The objective of this course is to provide a hands-on training on the office automation tools with MS-Word, MS-Excel, MS-Power-Point and MS-Access Packages. This is a theory cum laboratory course.

Unit I: Microsoft Word

Working with text - formatting paragraph - numbered and bulleted lists -working with tables - working with graphics - spelling and grammar checking - page format - mail merge-language setting and Thesaurus- Macros.

Unit II: Microsoft Excel

Modifying a worksheet - formatting cells - formula cells – formulae and functions - sorting and filtering - graphics – charts – data validation.

Unit III: Power-Point

Working with slides - color schemes – graphics – slide effects – master slides – presentations-slide shows–animations.

Unit IV: Access

Creating tables – data sheet records – table relationships – sorting and filtering – queries – forms – reports.

Textbook

MS-Office 2003 Manual by Microsoft

Reference

Curtin D.P, Kim Foley K, Kunalsen, Morin, C. 2002. Information Technology- The Breaking Wave, TataMcGraw Hill.

CSA 2401

Operating Systems

4hrs/Wk – 4credits

The course aims to develop understanding and appreciation in a broader perspective of various operating systems, operating system feature and application. This course includes theory cum laboratory part.

Unit I: Introduction to operating system

BIOS – DOS – Windows - types of operating system – operating system services - desktop operating system -server operating system – mainframe operating system – embedded operating system.

Unit II: Windows

Features of windows operating system – multiprogramming – multitasking – buffering – spooling – time sharing – browser support.

Unit III: Unix

Unix features – multitasking – multithreading – Kernel – Shell - multi user Unix file system - system calls- security in Unix.

Unit IV: Introduction to Android

Application of Android – features of Android – messaging- voice based features- multitasking -Screen capture-video calling-multiple language support.

Text books

1. Alphonse X, 2011 ICRDCE publication, December
2. Silberchatz, Galvin and Gagne, 1999. Operating system concepts, John Wiley and sons.

References

1. Curtin D.P, Foley K, Kunalsen, Morin, C. 2002. Information Technology- The Breaking Wave, TataMcGraw Hill.
2. http://en.wikipedia.org/wiki/List_of_features_in_Android

CSA 2402 Programming techniques using C**4hrs/Wk – 4credits**

The objective of this course is to introduce the programming techniques and enable the student to develop programming skills using C. This course introduces the students to the basic programming constructs, file handling, pointers and command line arguments. This is a theory cum laboratory course

Unit I: Overview of C

Middle level language – compilers versus interpreter – the form of a C program – compiling a C program – data types – type conversions – operators – formatted input/output functions.

Unit II: Control statements

If, if-else, switch, for, while, do..while, break and continue.

Unit III: Aggregate Data Types

Arrays – strings – functions – call by values – call by reference – passing arrays as arguments – local, global static and external variables.

Unit IV: Structures and Unions

User. defined data types- Introduction to pointers-Introduction to files – command line arguments

Textbook

Balagurusamy.E, Programming in ANSI 'C', 4th edition, Tata McGrawHill, 2007.

Reference

Yashavant,K. Let Us C, 5th edition, BPB publications Nov 8 2011 .

LSD 1401 FUNDAMENTALS OF LIFE COPING SKILLS 4Hrs/Wk – 4Credits

This theory course is designed to give basic information about types of skills, personality, personal and communication skills. Examples and case studies pertaining to the title will also be dealt with.

Unit I: Introduction

Skills – personal, team, social, communication, language, creative, marketing, employability and leadership Skills. Coping – meaning and process – positive and negative coping. Coping – problem focused and emotion focused. Assessment of self – efficacy-coping strategies.

Unit II: Personality and Life Skills

Skill assessment – skill development process, perception, thinking, emotion, attitudes and behaviour – personality development – characteristics and elements of personality - development of personality – Life illustrations -Mahatma Gandhi and Mother Teresa.

Unit III: Personal Skills

Self-discovery – Johari windows - self-esteem – advantages, qualities and effects – high and low self-esteem. Self-concept – characteristics-self-reflection-self-acceptance – benefits. Positive thinking – positive imaging – possibility thinking.

Unit IV: Communication Skills

Communication – Interpersonal – aids and blocks – leadership – team – interpersonal relationship.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. Alphonse, X.2011.Walking the Extra Mile. ICRDCE Publication, Chennai.
2. AIACHE publication 2014. Human values. New Delhi.
3. Alex, K. 2014. Soft skills, S. Chand & Company Pvt.Ltd.New Delhi.

LSD 1402 PERFORMANCE AND LIFE COPING SKILLS 4Hrs/Wk – 4Credits

This course deals with goal, management, problem solving and performance orientation. Principles, importance and types of their concepts will be covered.

Unit I: Goal Orientation

Goal Setting – goals – importance – obstacles. - steps and types. Meaningless goals. Goal setting to successful life.

Unit II: Management Orientation

Motivation – Internal and External - Personal and Incentive motivation. Self-Direction – Demotivating factors and Motivators. Decision making – process.

Unit III: Problem Solving Orientation

Identification of problems - problem solving –ways to solve problems.Principles for managing problems.

Unit IV: Performance Orientation

Controls – standards – error correction – time management – stress management.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. Srivastava, R. 2009. Personal Growth and training &Development. Vrinda publications (p) Ltd. Delhi.
2. ArindamChaudhuri. 2001. Count Your Chickens before they Hatch, Vikas publishing house, 1st edition.
3. Shiv Khera. 1998. You Can Win, Macmillan India Ltd, New Delhi, 1st edition.
4. ChandruGidwani. 2001. Ten Secrets to a Balanced Successful and Happy Life, BYB, 1st edition.

LSA 2401 COPING WITH PSYCHOLOGICAL AND PHYSICAL ISSUES

4Hrs/Wk – 4Credits

The course provides a general and basic understanding of skills to cope with psychological and physical issues.Coping with fear, shyness, anger, depression, failure, criticism, loneliness, sexuality, disability and sickness are dealt with.

Unit I: Coping with Fear and Shyness

Kinds – handling – ways to overcome fear – tips to cope with fear. Shyness – types – symptoms – overcoming shyness.

Unit II: Coping with Anger and Depressions

Anger – consequences – management – verbal abuse. Depression – causes – symptoms – overcoming.

Unit III: Coping with Failure and Criticism

Failure – coping with failure. Criticism – self-criticism – coping with criticism.

Unit IV: Coping with Loneliness and Sexuality

Loneliness – causes – effects – types – coping with loneliness. Human life cycle – sexuality – dimensions, sex – problems connected with sexuality. Disability – sickness.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. ShivKhera 2003. Living with Honour, Macmillan Publishers India Ltd.
2. Ray Josephs 1994. How to Gain Extra Hour Every day, published by Thorsons
3. Carole Bodger. 1999. Smart Guide to Relieving Stress, Wiley.
4. Kristine C. Brewer 1995. Managing Stress, National Press Publications.
5. GirijaKhanna. 1998. All about Coping with Stress, VikasPublishing House Pvt.Ltd, India.

LSA2402 COPING WITH SOCIAL AND ENVIRONMENTAL ISSUES**4Hrs/Wk – 4Credits**

This is a comprehensive course aiming to give a basic understanding about coping with social and environmental issues. Overcoming problems associated with modernization is also dealt with.

Unit I: Coping with society

Family – society – friends – relatives – culture – corruption – coping strategies.

Unit II: Coping with resources

Resources – human – time – money – energy – coping strategies.

Unit III: Environmental issues

Environment – air- water – land – pollution – environmental issues – conflicts coping with environmental issues.

Unit IV: Coping with Modernization

Modernization – globalization – global trends – technology development – coping strategies.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. Gupta, S., Garg, N and Aggarwal, A. 1991. Textbook of Home management Hygiene and Physiology. Kalyani Publishers, New Delhi.
2. Jeevadhara. Vol. XXX III. No.198. Nov.2003
3. Bruno, F. J. 1997. Conquer Shyness: Understand your shyness and Banish It Forever! New York; Macmillan.

DML 1301**FUNDAMENTALS OF MEDICAL LAB TECHNOLOGY****4 Hrs/ Wk- 4Credits****Course Description**

This course is meant for developing the knowledge and technical skill necessary to perform basic laboratory tests. Emphasis is placed on use and maintenance of laboratory equipment, quality control and biosafety techniques.

Unit I: Laboratory maintenance

History and Scope of MLT- Organization of laboratory and safety precautions in laboratory - personal cleanliness and care with regard to infected materials and chemical burns - quality assurance and disposal of wastes - cleaning of equipment and glassware.

Unit II: Body fluids

Study of body fluids - collection and transportation of clinically important samples - Role of phlebotomist. Management of disposing blood samples.

Unit III: Instrumentation

Maintenance and applications of instruments - deep freezers, incubators, ovens, water bath, autoclaves and centrifuges. Principle and use of colorimeter, spectrophotometer, ELISA reader and auto analyzer - capillary tubes, Pasteur pipettes and glass sheet cutting.

Unit IV: Sterilization

Principles of sterilization - methods- physical - temperature, filtration and radiation- chemical method - use of phenolic agents, alcohols, halogens, heavy metals, aldehydes, gases, antimicrobial agents and chemotherapeutic agents.

Text Book

Sood.R (1994). Laboratory Technology (Methods and interpretation) 4th Ed. J.P. Bros, New Delhi

References:

1. Godkar, P. B and Godkar D. P (2002). A Text Book for Medical Lab Technology, 2nd edition, Bhalami Publishing House, Mumbai.
2. Mahon, C. R, Lehman D.C and Manuselis G (2007). Text book of Diagnostic Microbiology, 3rd edition, Reed Elsevier Publishers, India.

Job Role

- To assist in performing invasive and non-invasive diagnostic examination for therapeutic intervention of disease.
- Receptionist at the Laboratory services of the Hospitals
- Phlebotomist

DML 1303 HUMAN ANATOMY AND PHYSIOLOGY 4 Hrs/Wk - 4 Credits**Course Description**

This course deals with the basic aspects of Human Anatomy and Physiology of organ systems like integumentary, digestive, respiratory, circulatory, immune, nervous, endocrine, urinary and reproductive systems.

Unit I: Introduction

Introduction - Anatomy- Physiology-basic concepts- homeostasis-organ systems- integumentary system- skin-skeleton-bones-cartilage-joints-ligaments-functions-Digestive system -organs and digestion.

Unit II: Respiratory and Circulatory system

Respiratory and Circulatory system – Lungs – Physiology of respiration – Heart – circulation – blood – components – function and grouping.

Unit III: Regulatory Systems

Nervous system – structure and functions of brain and spinal cord – eye – vision – ear – hearing. Endocrine glands – hormones – immune system.

Unit IV: Urinary and Reproductive system

Urinary and Reproductive system – structure and function of kidney – nephron – urine formation. Reproduction – male and female reproductive organs – function – development and birth.

Text Book

Shier, D. Butler, J. and Lewis, R (1996). Hole's Human Anatomy and Physiology, WCB/McGraw-Hill, New York.

Reference

1. Graff, K.M.V and Fox S.I (1995) Human Anatomy and Physiology, WCB Publication, Toronto.
2. Davies, A., Blakeley, A.G.H and Kidd, C. (2011) Human physiology, Churchill Livingstone, Toronto.

DML 1901 MEDICAL LAB TECHNOLOGY – LAB 1**10 Hrs/ Wk- 10Cr****Course Description**

This course is designed to provide the students with experience in bacteriologic, mycotic and parasitologic studies in a clinical setting. The student learns techniques of specimen collection, media preparation, culture, staining, biochemical testing and antibiotic susceptibility testing.

1. Handling of laboratory equipments – Microscope, TCDC counter, Steth, Centrifuge, Laminar Air flow
2. Disinfection practice in laboratory and wards
3. Assay for disinfection
4. Preparation of media
5. Selective and Differential Media
6. Isolation of bacteria from clinical specimen
7. Pure culture isolation
8. Techniques of cultivation of bacteria – spread plate and pour plate methods
9. Cultural Characteristics of bacteria
10. Measurement of microbes by micrometry
11. Simple staining methods and Gram stain
12. Types of motility of bacteria
13. Biochemical testing – catalase, oxidase, citrate, urease, TSI, carbohydrate fermentation, MR - VP, Indole.
14. Maintenance of bacterial cultures.
15. Study of antibiotic sensitivity of common pathogens

16. Lactophenol cotton blue staining
17. Morphology of fungi
18. Examination of stool for parasites
19. Visit to Hospital Microbiological laboratory
20. Visit to Research Institute

References:

1. Cruickshank (1975) Medical Microbiology, Vol II ELBS, Churchill Livingstone Pub.
2. Ananthanarayanan and Panikkar J (1922). Text book of Medical Microbiology, 4th edition, Orient Longman Ltd. Madras.

Job Role

Bioinstrumentation – operator
Media Room In charge

DML 1302 CLINICAL BIOCHEMISTRY & MICROBIOLOGY

4Hrs/ Wk- 4Credit

Course Description

This course emphasizes the clinical significance and analytical methods employed to assess the following are included: renal and liver function, water and electrolyte balance, lipid, carbohydrate metabolism, inborn errors of metabolism and diagnostic enzymes. It also dealt with the cultivation, isolation, identification and significance of clinically associated bacteria, fungi, viruses and parasites.

Unit I: Study of lipid and sugar related disorders

Basic concepts of Biochemistry - Disorders of carbohydrate metabolism – diabetes mellitus, glucose and galactose tolerance tests, sugar levels in blood, renal threshold for glucose and factors influencing blood glucose level -Disorders of lipids – plasma lipoproteins, cholesterol, triglycerides and phospholipids in health and disease, hyperlipidemia, Gaucher's disease and ketone bodies.

Unit II: Metabolic Disorders and Diagnostics Enzymes

Inborn errors of metabolism – phenylketonuria, alkaptonuria, albinism, tyrosinosis, maple syrup urine disease, Lesch-Nyhan syndrome, sickle cell anemia and Histidinemia. Diagnostic enzymes – enzymes in health and diseases. Biochemical diagnosis of diseases by enzyme assays – SGOT, SGPT, CPK, cholinesterase and LDH.

Unit III: Bacteriology and Mycology

Basic concepts of Microbiology- normal microflora - General characteristics of Bacteria – Classification, morphology and pathogenesis of bacteria – *Staphylococcus*, *Streptococcus*, *Mycobacterium*, *Clostridium*, *E.coli*, *Salmonella*, and *Vibrio*- Mycology – definition – structure – classification – Cutaneous & Subcutaneous and systemic Mycosis- Opportunistic fungal infections – Diagnosis of fungal infections.

Unit IV: Virology and Parasitology

Characteristics of Viruses- structure, classification, replication and pathogenesis of HIV, Hepatitis virus, Pox virus, Influenza, Chikungunya and Dengue.
 Parasites – classification, morphology, lifecycle, clinical manifestations of *Entamoeba histolytica*, *Plasmodium* and *Leishmanias*

Text Book

Ananthanarayanan and Panikkar J (1922). Text book of Medical Microbiology, 4th edition, Orient Longman Ltd. Madras.

References

1. Cruickshank (1975) Medical Microbiology, Vol II ELBS, Churchill Livingstone Pub.
2. Pelczar M. J, Chan E.C.S. and Kreig N.R (1986). Microbiology, McGraw Hill, New Delhi.
3. Chatterje, M.N. and Shinde, R (2005). Textbook of Medical Biochemistry, Jaypee Brothers, New Delhi.

Job Role**Biochemical Analyst**

To performing technical procedures for identification of bacteria, fungi, parasites and mycobacteria.

DML 1304**HAEMATOLOGY****4 Hrs/ Wk- 4Credits****Course Description**

This course deals with the study of the formed elements of the blood: red blood cells, white blood cells and platelets. Development and characteristic of these, methods of measurement and abnormalities are covered.

Unit I: Blood Collection

Composition of blood and its function. Origin, development and morphology of blood cells. Common anticoagulants - mechanism of action - methods of preparation of different types of collection vials - Basic quality control methods - Biosafety measures and disposal of haematological waste.

Unit II: Blood Parameters

Methods of estimation of Haemoglobin - enumeration of total counts of WBC, RBC, Platelets and fluids used - Methods of determination of PCV - Calculation of different red cell indices (Haemogram- MCV, MCHC) - Basic principles of semi or automated blood cell counters.

Unit III: Bleeding Techniques

Drawing of peripheral blood smear, staining and stain preparation - Bone marrow aspiration methods and staining and preparation of Tray for Bone marrow aspiration and biopsy - Differential leucocyte count (peripheral smear study) - Reticulocyte staining, count and preparation of stain. Erythrocyte sedimentation rate.

Unit IV: Blood Tests

Basic tests for coagulopathy - BT, CT, P time, APTT - Some special tests - LE cell test, RBC Osmotic fragility and FoetalHb% - Cytochemical Stain for diagnosis/differential diagnosis of Leukemia - Basic concepts of anaemia, Leukemia and hemorrhagic disorder

Text Book

Sood,R (1996). Laboratory Technology (Methods and interpretation) 4th Ed. J.P. Bros, New Delhi

References

1. Godkar, P. B. Godkar D. P. (2002), A Text Book for Medical Lab Technology, 2nd edition, Bhalami Publishing House, Mumbai.
2. Mukherjee, K.L (1989) Medical Laboratory Technology (Vol -I to III) Tata McGraw Hill, New Delhi.

Job Role

Teacher – First Aid techniques
 Technician - 1
 Lab instructor
 Serum separator
 Blood Bank Incharge
 Haematologist

DML 1902 MEDICAL LAB TECHNOLOGY – LAB II 10 Hrs/ Wk- 10Cr

Course Description

This lab course is designed to give the student clinical experience in the area of hematology and biochemical parameter analysis of clinical specimens.

1. Staining method, Gram stain, Ziehl-Nelsen stain, Albert's stain etc.
2. Hanging drop method
3. Stool examination (Occult blood), microscopic and culture.
4. Sputum examination (general, cytological and microbiological).
5. Estimation of SGOT&SGPT in blood sample
6. Estimation of alkaline phosphatase in blood sample
7. Estimation of acid phosphatase in blood sample
8. Estimation of bilirubin in blood sample
9. Estimation of common parameters in urine
10. Blood collection. Anticoagulants used in Hematology
11. Red cell indices - E.S.R., PCV, Platelet count,
12. Preparation of blood film
13. Preparation of Leishman's stain, Giemsa stain and MGG stain
14. Peripheral smear staining by Leishman's stain. Interpretation of peripheral smear. Differential count.
15. Microcytic hypochromic anemia – Hemolytic anemia – General Lab investigations

References

1. Cruickshank (1975) Medical Microbiology, Vol II ELBS, Churchill Livingstone Pub.
2. Ananthanarayanan and Panikkar J (1922). Text book of Medical Microbiology, 4th edition, Orient Longman Ltd. Madras.

Job Role

BiochemicalAnalyst
 To performing technical procedures for identification of bacteria, fungi, parasites and mycobacteria.
 Haematologist

AML 2301

CLINICAL PATHOLOGY

4 Hrs/ Wk- 4Credits

Course Description

The objective of this course is to provide graduate-level instruction in Pathobiology: the study of biochemical, structural and functional changes in cells, tissues and organs, which cause or are caused by diseases. The goal of the course will be to expand and extend the student's knowledge of normal structure and function, into the realm of disease processes.

Unit I: Introduction

Introduction to Histology, the cell, cell Organelles, nucleus, cell division, tissues, fresh & fixed tissues. Different types of Embedding Viz. Wax, Resin, Cryostat.

Unit II: Fixatives

Fixation of tissue, different kind of fixatives, simple fixative, compound fixative, formaldehyde, mercuric chloride, osmium, Picric acid, alcohols, other acids, formaline, buffered formaline, osmic acid, zenleersoln, hely'ssoln, cytological fixatives, nuclear fixatives, fixation of smear etc., decalcification, method of decalcification, assessment of decalcification, soln for decalcification.

Unit III: Processing of tissue

Processing of tissue, dehydration, impregnation in the wax, manual and automatic tissue processor, gelatin embedding, celloidin embedding, double embedding, cytological fixatives, preparation of different smears, vaginal, sputum, membrane.

Unit IV: Microtome and staining techniques

Microtome, instrument, principle, use in section cutting, parts and working of commonly used microtome, different kinds of microtome, rotary, base sledge, sliding, low temperature microtome, cryostat, microtome knives, homing and stropping knives. Section cutting of paraffin sections, section preparation from frozen sections, fixing of tissue to slide, preparation of celloidin section and fixation. Staining techniques.

Text Book

Sood, R (1996). Laboratory Technology (Methods and interpretation) 4th Ed. J.P. Bros, New Delhi

References

1. Godkar, P. B. Godkar D. P (2002). A Text Book for Medical Lab Technology, 2nd edition, Bhalami Publishing House, Mumbai.
2. Mukherjee, K.L (1989). Medical Laboratory Technology (Vol -I to III) Tata McGraw Hill, New Delhi.

Job Role

Pathology Technician – Processor

Permanent slide preparation - Technician

AML 2303

BODY FLUIDS ANALYSIS

4 Hrs/ Wk- 4Credits

Course Description

To impart knowledge about the composition, testing procedures, and the clinical correlation of results for cerebrospinal, synovial, pleural, pericardial, seminal, amniotic, and peritoneal fluids.

Unit I: Physical properties of body fluids

Body fluid compartments, Solutes in body fluid, Clinical abnormalities of fluid volume regulation, Measurements of body fluid compartments, Movement of body fluids.

Unit II: Amniotic fluid and Cerebrospinal fluid

Formation and function of amniotic fluid, Chemical composition, Collection, Testing – Alpha fetoprotein, Acetyl cholinesterase, Neural tube defects, Chromosomal abnormalities, Haemolytic disease of newborn, Gestation age, Fetal maturation. Formation, Specimen collection, Causes of CSF pressure changes, Gross examination, Chemical analysis, Microbiologic examination, Immunologic tests, Cytological examination and clinical correlation.

Unit III: Synovial fluid

Classification of joint disorders, Non-inflammatory joint diseases – Osteoarthritis, Traumatic arthritis, Neurogenic joint disease. Inflammatory joint disease – Rheumatoid arthritis, Lupus arthritis, Cell count, Chemical and serological examinations, Clinical correlations.

Unit IV: Serous fluid & other body fluids

Formation, Collection, Classes of effusions, Cell types and clinical correlations. Lymph, Gastric fluid, Urine, Faeces, Seminal fluid, Sputum and sweat, Biomarker evaluation in body fluids for specific therapeutic prognostic and /or diagnostic potential.

Text Book

Elkinton, Danowski (2002) The Body Fluids, Williams and Wilkins, Baltimore

References

1. Graff, K.M.V and Fox S.I (1995) Human Anatomy and Physiology, WCB Publication, Toronto.
2. Cella, J.H. and Watson J (2004) Manual of Laboratory Tests, Aitbs Publishers, New Delhi.

Job role

Medical Technologist
Technician – Forensic Department

AML 2901 MEDICAL LAB TECHNOLOGY – LAB III 10 Hrs/ Wk- 10Cr**Course Description**

This lab course focuses on the techniques in the examination various body fluids. The student is experienced to the physical and chemical properties of these fluids as well as microscopic examination.

1. Sample collection, preservation and transportation of various clinical pathology samples.
2. Biochemical estimation of total protein, albumin, globulin, sugar, cholesterol urea, LFT, GTT, enzymes including preparation of their reagents.
3. Physical and chemical examinations of urine including sugar, protein, acetone, bile salts, bile pigments, blood, urobilinogen, chyle and microscopic examination for crystals, cells and casts.
4. Examination of body fluids (CSF, ascetic fluid, pleural fluid, synovial fluid etc.) including biochemical, microscopic.
5. Semen analysis (count, motility, abnormal forms etc.)

References:

1. Godkar, P. B. Godkar D. P (2002). A Text Book for Medical Lab Technology, 2nd edition, Bhalami Publishing House, Mumbai.
2. Mukherjee, K.L (1989). Medical Laboratory Technology (Vol -I to III) Tata McGraw Hill, New Delhi.
3. Sood, R (1996). Laboratory Technology (Methods and interpretation) 4th Ed. J.P. Bros, New Delhi

Job role

**Medical Technologist
Technician – Forensic Department**

AML 2302 BIOMEDICAL TECHNIQUES 4 Hrs/ Wk- 4Credit**Course Description**

This course emphasises on various types of instruments found in the clinical laboratory, their operations, calibration, quality control, fundamentals of microcomputer applications and trouble shooting. It also provides the knowledge on technical concepts and principles of basic laboratory instruments.

Unit I: Laboratory safety

Common lab accidents and ways for its prevention - first aid in the clinical laboratory - storage and handling of dangerous chemicals - common laboratory hazards - Waste disposal in the labs - Medico legal aspects of Lab technology - Medical Laboratory Ethics.

Unit II: Bioinstrumentation Techniques

Methods of qualitative analysis - biomolecular principles, experimental procedures and application of chromatography: paper, thin layer, affinity, gel filtration and gas-liquid and HPLC. principles, procedures and application of Agarose Gel Electrophoresis.

Unit III: ECG

Normal ECG - ECG abnormalities, ECG recorder-single channel, multichannel, Tread mill ECG, ECG monitor, cardiac defibrillator, pacemaker, digital subtraction angiography, Oxymetry - transmission oximetry, reflection oximetry, fingertip pulse oximeter, Echo cardiography, colour Doppler, Heart lung machine, infusion pump, blood gas analyser.

Unit IV: Modern Instrumentation

GM counter, scintillation detector, photomultiplier tube, pulse height analyser, collimator, gamma camera, cyclotron, CT scan, MRI, Positron Emission Tomography, SPECT, dialysis machine - peritoneal and haemodialysis, dialysers.

Text Book

Palanivelu, P(2001). Analytical Biochemistry and Separation Techniques. A Laboratory Manual 2nd edn. Published by Tulsi Book Centre, Madurai, Tamil Nadu.

References

1. Fischbach, (2005). Manual of lab and diagnostic tests, Lippincott Williams Wilkins, New York.
2. Gradwohls, L(2000). Clinical laboratory methods and diagnosis, New Delhi.

Job Role

Technician - ECG Lab
 Technician - Scan center
 Technician - Dialysis center

AML 2304 BLOOD BANK PROCEDURE & SEROLOGY 4 Hrs/ Wk- 4Credits**Course Description**

This course includes the study of blood group antigens and antibodies including the techniques pertaining to the ABO and Rh systems and other major blood group systems and the exploration of methods for blood processing, handling and storage.

UNIT I: Introduction to blood bank

Blood grouping - introduction - human blood group system - ABO subgroups - Red Cell Antigen - natural antibodies - Rh System - Rh antigens and Rh antibodies - Hemolytic Disease of Newborn and Prevention - principle of blood grouping, antigen-antibody reaction - agglutination, haemagglutination, conditions required for antigen antibody reaction. Blood grouping techniques, cell grouping, serum grouping. Medical applications of blood groups.

UNIT II: Blood transfusion and safety measures

Blood transfusion - principle and practice of blood transfusion - blood transfusion service at district level - guidelines for the use of blood, appropriate use of blood, quality assurance - antilogous blood transfusion practices - objectives of quality assurance in blood transfusion services, standard operating procedures for usage, donation and storage of blood, screening of donor, compatibility testing, safety and procurement of supplies.

UNIT III: Screening test

Blood Collection and testing donor blood - blood collection packs - anticoagulants - taking and giving sets in blood transfusion- techniques of collecting blood from a donor - instructions given to the donor after blood donation - adverse donor reaction - screening donor's blood for infectious agents - HIV, HCV, HBV, *Treponemapallidum*, Plasmodium, HTLV- Bacterially contaminated blood.

UNIT IV: Blood cells and reactions

Compatibility testing and blood transfusion reactions - purpose - single tube compatibility techniques using AHG reagent- emergency compatibility testing - difficulties in cross matching - labeling and issuing cross- matched blood. Collection of blood components for fractional transfusion - platelets concentrate - preparation of concentrated (packed) Red cells - techniques of preparation. Investigation of transfusion reaction - hemolytic transfusion reaction - actions to take when transfusion reaction occurs.

Text Book

Sood, R (1996). Laboratory Technology (Methods and interpretation) 4th Ed. J.P. Bros, New Delhi

References

1. Gupta.S Short Text Book of Medical Laboratory for technician J.P. Bros, New Delhi
2. Brown.B.A (2008) Hematology: principles and procedures 6th Ed Lea &Febiger.
3. Rodak.B.A, Fritsma.G.A, Doig. K (2007) Hematology: Clinical Principles and Applications 3rd Ed, Elsevier Health Sciences.

Job Role

Blood Bank Analysis
Ambulance Assistant
Technician in operation theatres
Assistant in Drama ward
Assistant in Fire accident cases
Technician – Blood Transfusion Centres

AML 2902 MEDICAL LAB TECHNOLOGY – LAB IV 10 Hrs/ Wk- 10Cr

Course Description

This laboratory course includes survey of lymphoid organs, identification and counting of different types of blood cells and typing of blood group. Serological reactions like agglutination and precipitation using standard antisera will be taught. Students will be trained to immunize animals and various bleeding techniques such as retro-orbital bleeding and ear bleeding etc. will be done.

1. Enumeration of RBC
2. Enumeration of WBC
3. Preparation of antigen
4. Routes of administration and repetitive bleeding techniques
5. Separation of serum from whole blood.
6. Survey of lymphoid organs – primary and secondary
7. Isolation of lymphocytes.
8. Serum bactericidal activity.

9. Blood grouping
10. Complement activity
11. Antigen and antibody interaction - Diffusion methods

References:

1. Myers, R.L (1989) Immunology a Laboratory Manual, Wm. C. Brown Publishers, Dubuque, Iowa.
2. Garvey J. S, Cremer N. E and Sussdorf D. H. (1993). Methods in Immunology – A Laboratory Text for Instruction and Research, 3rd edn, The Benjamin/ Cummings Pub Co, London.
3. Thompson, R.A(1997). Techniques in Clinical Immunology, 2nd end, Blackwell Science Publications, Oxford.

Job Role

**Bleeder, Technician in the Ultra labs
Technician – operation theatres**

THE AMERICAN COLLEGE – COMMUNITY COLLEGE

MADURAI – 625 002

Diploma in Aquaculture

Sem	Course No	Course Title	Hrs/wk	Cr.
I	General Education			
	END 1401	Conversational English	4	4
	CSD 1401	Fundamentals of Computers	4	4
	LSD 1401	Fundamentals of Life Coping Skills	4	4
	Skill Component			
	DAQ 1301	Basis of Aquaculture	4	4
	DAQ 1303	Edible Fish Culture	4	4
	DAQ 1901	Lab – I	10	10
	Job Training			
	DAQ 1401	Internship I	120/sem	4
	Total			34
II	General Education			
	END 1402	Study Skills	4	4
	CSD 1402	Office Automation tools	4	4
	LCD 1402	Performance and Life Coping Skills	4	4
	Skill Component			
	DAQ 1302	Ornamental Fish Culture	4	4
	DAQ 1304	Shrimp Farming	4	4
	DAQ 1902	Lab – II	10	10
	Job Training			
	DAQ 1402	Internship II	120/sem	4
	Total			34

- Theory / Lab courses - 1 credit = 15 hours/Semester
- Internship – 1 credit = 30 hours/Semester

THE AMERICAN COLLEGE – COMMUNITY COLLEGE

MADURAI – 625 002

Advanced Diploma in Aquaculture

Sem	Course No	Course Title	Hrs/wk	Cr.
III	General Education			
	ENA 2401	Reading and Writing skills	4	4
	CSA 2401	Operating System	4	4
	LSA 2401	Coping with Psychological and Physical Issues	4	4
	Skill Component			
	AAQ 2301	Fish Seed Production	4	4
	AAQ 2303	Live Feed Production	4	4
	AAQ 2901	Lab – III	10	10
	Job Training			
	AAQ 2401	Internship III	120/sem	4
	Total			34
IV	General Education			
	ENA 2242	Career Skills	4	4
	CSA 2242	Programming Techniques using C	4	4
	LSA 2242	Coping with Social and Environmental Issues	4	4
	Skill Component			
	AAQ 2302	Fish Feed Technology	4	4
	AAQ 2304	Aquaculture Products	4	4
	AAQ 2902	Lab – IV	10	10
	Job Training			
	AAQ 2402	Internship IV	120/sem	4
	Total			34

- Theory/ Lab courses - 1 credit = 15 hours/Semester
- Internship – 1 credit = 30 hours/Semester

END 1401**Conversational Skills****4Hrs/Wk- 4Credits**

The Course aims at helping students converse in English on the matters that matter to them in daily life. It provides the learners with ample opportunities and social contexts through conversations so that they can freely and fluently use informal English. It also exposes them to the apt vocabulary of such informal conversations.

Specific Outcomes of Learning are that the learners shall

- 1) enhance their conversational fluency as well accuracy
- 2) fine-tune their pronunciation and accent
- 3) become familiar with, and therefore effortlessly internalize, the structures of English

Unit 1

Strategies to improve conversation

Unit 2

English Pronunciation skills

Unit 3

Day-to-day matters like eating, emotions, fashion, health, friendship, money, romance

Unit 4

Housing, job, faith & hope, busy life, memory, shopping, time, traffic, travelling, vacation, weather

Text Book

Conversational Skills. Madurai: the American College, 2014

END 1402**Study Skills****4Hrs/Wk- 4Credits**

The Course aims at strengthening the learners with the necessary study skills so that they can transfer these skills on to their fields of specialization in different disciplines. It helps them harvest the benefits of learner autonomy.

Specific Outcomes of Learning are that the learners shall

- 1) change their independent study meaningful and purposeful
- 2) optimize their learning potentials both in the classroom and out of the classroom
- 3) acquire dictionary skills and improve their word power

Unit 1

Note-taking, note-making, interpreting

Unit 2

Paraphrasing, summarizing, referencing

Unit 3

Dictionary skills, vocabulary enhancement strategies

Unit 4

Time management & organizational skills

Text Book

To be prepared by the Department Faculty who will act as Course Writers and Reviewers

ENA 2401

Reading and Writing Skills

4Hrs/Wk- 4Credits

The Course aims at improving the learners' productive skills of English. It offers professional guidance on meaningful and aggressive reading experiences by familiarizing them with techniques and micro-skills of reading, comprehension abilities through literary and non-literary reading materials. It also strengthens their writing skills through the forms of writing that are useful to them academically and vocationally.

Specific Outcomes of Learning are that the learners shall

1. get training in aggressive speed reading with different sub-skills
2. improve their comprehension abilities
3. learn the formal written English

Unit 1

Reading at various speeds, skimming & scanning, inferring & interpreting, predicting, reorganizing material,

Unit 2

Comprehension skills: global, local, referential, inferential, reorganizing, prediction, evaluation

Unit 3

Writing letters of leave & job applications, business communication, resume writing

Unit 4

Paragraph writing, five-paragraph essay writing, use of discourse markers, types of writing (descriptive, argumentation, narrative)

Text Book

To be prepared by the Department Faculty who will act as Course Writers and Reviewers

ENA 2402

Career Skills

4Hrs/Wk- 4Credits

The Course aims at empowering the learners with English for employability. It provides learning experiences in the situations and skills that would be helpful to them when they start looking for employment or further higher studies.

Specific Outcomes of Learning are that the learners shall

- 1) learn certain skills that are absolutely necessary for employment
- 2) acquire creative and critical thinking skills
- 3) understand the important of interpersonal communication skills

Unit 1

English for interviews, presentation skills, Group Discussion

Unit 2

Higher order thinking skills (HOTS) like ability to learning, reasoning, thinking creatively, and decision-making.

Unit 3

Interpersonal Communication Skills, Negotiation skills like ability to understand other people's feeling and to express one's own in order to achieve a win-win outcome.

Unit 4

Problem solving skills like ability to identify and understand an issue in terms of component parts and to solve them by applying one's knowledge

Text Book

To be prepared by the Department Faculty who will act as Course Writers and Reviewers

CSD 1401**Fundamentals of Computers****4hrs/Wk – 4credits**

The course aims to develop understanding and appreciation in a broader perspective the application of the information technology. The course attempts to equip the students to compete in the present world with computer knowledge. This course includes theory and laboratory part.

Unit I: Introduction to computers

Generations of computers – components of computer -hardware – software - classification of computers – advantages and limitations -applications of computer- input and output devices – types of printers.

Unit II: Computer memory

Primary memory – secondary memory-auxillary storage devices - virtual memory – cache memory – registers- types of optical discs – CD discs – DVD discs - back up - data and information –ASCII –EBCDIC.

Unit III: Data representation on computer

Computer words – number systems - decimal number system- binary system – octal number system –hexadecimal system-binary to hexadecimal – octal to binary- hexadecimal to binary

Unit IV: Database structure

Types of database structures – comparison between the structures – database types and manners of data storage – data access control software – database management methods and techniques – data dictionary – data processing: techniques in data processing – online, batch mode, processing software tools

Textbook

Alphonse X, 2011. ICRDCE publication, December

Reference

Curtin, D. P. Foley, K.Kunalsen, Morin,C. 2002. Information Technology- The Breaking Wave, TataMcGraw Hill.

CSD 1402**Office Automation Tools****4hrs/Wk – 4credits**

The objective of this course is to provide a hands-on training on the office automation tools with MS-Word, MS-Excel, MS-Power-Point and MS-Access Packages. This is a theory cum laboratory course.

Unit I: Microsoft Word

Working with text - formatting paragraph - numbered and bulleted lists - working with tables - working with graphics - spelling and grammar checking - page format - mail merge - language setting and Thesaurus - Macros.

Unit II: Microsoft Excel

Modifying a worksheet - formatting cells - formula cells - formulae and functions - sorting and filtering - graphics - charts - data validation.

Unit III: Power-Point

Working with slides - color schemes - graphics - slide effects - master slides - presentations - slide shows - animations.

Unit IV: Access

Creating tables - data sheet records - table relationships - sorting and filtering - queries - forms - reports.

Textbook

MS-Office 2003 Manual by Microsoft

Reference

Curtin D.P, Kim Foley K, Kunalsen, Morin, C. 2002. Information Technology- The Breaking Wave, TataMcGraw Hill.

CSA 2401**Operating Systems****4hrs/Wk - 4credits**

The course aims to develop understanding and appreciation in a broader perspective of various operating systems, operating system feature and application. This course includes theory cum laboratory part.

Unit I: Introduction to operating system

BIOS - DOS - Windows - types of operating system - operating system services - desktop operating system - server operating system - mainframe operating system - embedded operating system.

Unit II: Windows

Features of windows operating system - multiprogramming - multitasking - buffering - spooling - time sharing - browser support.

Unit III: Unix

Unix features - multitasking - multithreading - Kernel - Shell - multi user Unix file system - system calls - security in Unix.

Unit IV: Introduction to Android

Application of Android - features of Android - messaging - voice based features - multitasking - Screen capture - video calling - multiple language support.

Text books

1. Alphonse X, 2011 ICRDCE publication, December
2. Silberchatz, Galvin and Gagne, 1999. Operating system concepts, John Wiley and sons.

References

1. Curtin D.P, Foley K, Kunalsen, Morin, C. 2002. Information Technology- The Breaking Wave, TataMcGraw Hill.
2. http://en.wikipedia.org/wiki/List_of_features_in_Android

CSA 2402 PROGRAMMING TECHNIQUES USING C 4hrs/Wk – 4credits

The objective of this course is to introduce the programming techniques and enable the student to develop programming skills using C. This course introduces the students to the basic programming constructs, file handling, pointers and command line arguments. This is a theory cum laboratory course

Unit I: Overview of C

Middle level language – compilers versus interpreter – the form of a C program – compiling a C program – data types – type conversions – operators – formatted input/output functions.

Unit II: Control statements

If, if-else, switch, for, while, do..while, break and continue.

Unit III: Aggregate Data Types

Arrays – strings – functions – call by values – call by reference – passing arrays as arguments – local, global static and external variables.

Unit IV: Structures and Unions

User defined data types- Introduction to pointers-Introduction to files – command line arguments

Textbook

Balagurusamy.E, Programming in ANSI 'C', 4th edition, Tata McGrawHill, 2007.

Reference

Yashavant,K. Let Us C, 5th edition, BPB publications Nov 8 2011 .

LSD 1401 FUNDAMENTALS OF LIFE COPING SKILLS 4Hrs/Wk– 4Credits

This theory course is designed to give basic information about types of skills, personality, personal and communication skills. Examples and case studies pertaining to the title will also be dealt with.

Unit I: Introduction

Skills – personal, team, social, communication, language, creative, marketing, employability and leadership Skills. Coping – meaning and process – positive and negative coping. Coping – problem focused and emotion focused. Assessment of self –efficacy-coping strategies.

Unit II: Personality and Life Skills

Skill assessment – skill development process, perception, thinking, emotion, attitudes and behaviour –personality development – characteristics and elements of personality - development of personality – Life illustrations -Mahatma Gandhi and Mother Teresa.

Unit III: Personal Skills

Self-discovery – Johari windows - self-esteem – advantages, qualities and effects – high and low self-esteem. Self-concept – characteristics-self-reflection-self-acceptance – benefits. Positive thinking – positive imaging – possibility thinking.

Unit IV: Communication Skills

Communication – Interpersonal – aids and blocks – leadership – team – interpersonal relationship.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. Alphonse, X. 2011. Walking the Extra Mile. ICRDCE Publication, Chennai.
2. AIACHE publication 2014. Human values. New Delhi.
3. Alex, K. 2014. Soft skills, S. Chand & Company Pvt.Ltd. New Delhi.

LSD 1402 PERFORMANCE AND LIFE COPING SKILLS 4Hrs/Wk – 4Credits

This course deals with goal, management, problem solving and performance orientation. Principles, importance and types of their concepts will be covered.

Unit I: Goal Orientation

Goal Setting – goals – importance – obstacles - steps and types. Meaningless goals. Goal setting to successful life.

Unit II: Management Orientation

Motivation – Internal and External - Personal and Incentive motivation. Self-Direction – Demotivating factors and Motivators. Decision making – process.

Unit III: Problem Solving Orientation

Identification of problems - problem solving –ways to solve problems. Principles for managing problems.

Unit IV: Performance Orientation

Controls – standards – error correction – time management – stress management.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. Srivastava, R. 2009. Personal Growth and training & Development. Vrinda publications (p) Ltd. Delhi.
2. Arindam Chaudhuri. 2001. Count Your Chickens before they Hatch, Vikas publishing house, 1st edition.
3. Shiv Khera. 1998. You Can Win, Macmillan India Ltd, New Delhi, 1st edition.
4. ChandruGidwani. 2001. Ten Secrets to a Balanced Successful and Happy Life, BYB, 1st edition.

LSA 2401 COPING WITH PSYCHOLOGICAL AND PHYSICAL ISSUES**4Hrs/Wk – 4Credits**

The course provides a general and basic understanding of skills to cope with psychological and physical issues. Coping with fear, shyness, anger, depression, failure, criticism, loneliness, sexuality, disability and sickness are dealt with.

Unit I: Coping with Fear and Shyness

Kinds – handling – ways to overcome fear – tips to cope with fear. Shyness – types – symptoms – overcoming shyness.

Unit II: Coping with Anger and Depressions

Anger – consequences – management – verbal abuse. Depression – causes – symptoms – overcoming.

Unit III: Coping with Failure and Criticism

Failure – coping with failure. Criticism – self-criticism – coping with criticism.

Unit IV: Coping with Loneliness and Sexuality

Loneliness – causes – effects – types – coping with loneliness. Human life cycle – sexuality – dimensions, sex – problems connected with sexuality. Disability – sickness.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. ShivKhera 2003. Living with Honour, Macmillan Publishers India Ltd.
2. Ray Josephs 1994. How to Gain Extra Hour Every day, published by Thorsons
3. Carole Bodger. 1999. Smart Guide to Relieving Stress, Wiley.
4. Kristine C. Brewer 1995. Managing Stress, National Press Publications.
5. GirijaKhanna. 1998. All about Coping with Stress, VikasPublishing House Pvt.Ltd, India.

LSA2402 COPING WITH SOCIAL AND ENVIRONMENTAL ISSUES**4Hrs/Wk – 4Credits**

This is a comprehensive course aiming to give a basic understanding about coping with social and environmental issues. Overcoming problems associated with modernization is also dealt with.

Unit I: Coping with society

Family – society – friends – relatives – culture – corruption – coping strategies.

Unit II: Coping with resources

Resources – human – time – money – energy – coping strategies.

Unit III: Environmental issues

Environment – air- water – land – pollution – environmental issues – conflicts coping with environmental issues.

Unit IV: Coping with Modernization

Modernization – globalization – global trends – technology development – coping strategies.

Text Book

1. Alphonse, X. 2011. We Shall Overcome. A Textbook on Life Coping Skills. ICRDCE Publication, Chennai.

References

1. Gupta, S., Garg, N and Aggarwal, A. 1991. Textbook of Home management Hygiene and Physiology. Kalyani Publishers, New Delhi.
2. Jeevadhara. Vol. XXX III. No.198. Nov.2003
3. Bruno, F. J. 1997. Conquer Shyness: Understand your shyness and Banish It Forever! New York; Macmillan.

DAQ 1301**Basics of Aquaculture****4h/wk-4credits**

This theory course deals with the basic and applied aspects of nutritive values of fish, different types of aquaculture practices in India and biology of various exotic and major carps. Various ornamental fish types, shrimps and mollusk are also included. The physico-chemical analysis of water and their impact on aquatic systems are given importance. Emphasis is given to the feed and their formulation to enhance aqua culture production.

UNIT-I: Introduction

Food Security –protein crisis—PEM—nutritive value of fish and fishery products—scope – culture Fisheries—salient features of aquaculture.

UNIT-II: Types and practices of aquaculture

Types-Inland, brackish water, mariculture and metahaline aquaculture. Practices—culture in ponds, riverside, dams and lakes, temple and irrigation tanks, raceways and sewage ponds-Integrated farming.

UNIT-III: Cultivable organisms

Indian major carps-exotic carps-air breathing fishes-cat fishes-cold water fishes-ornamental fishes-shell fishes-crustaceans and mollusks-shrimps, lobsters and crabs.

UNIT-IV: Water quality and nutrition:

Ecosystem - lotic-lentic-brackish water-marine environment--water- physical, chemical and biological characteristics-water recirculation systems-fish nutrition-nutritional requirements-feed-formulation and preparation-supplementary feed-feed ingredients.

Text book:

Gilbert. B. 1990: Aquaculture – Vol II. Horwood.

References:

1. Jingaran, V.G.1991 Fish and Fisheries of India. Hindustan Publ.Corporation (India).
2. Pillay, T.V.R., 1990: Aquaculture, Principles and practices. Fishing News books Ltd.

DAQ 1303**Edible fish culture****4h/wk-4credits**

This course is designed to introduce the various techniques involved in the construction of fish ponds and their management. The second section deals with the various techniques involved in fish seed production. The third section deals with seed collection, storing and rearing in the culture site. The last unit is concerned with fresh water prawn culture and management.

UNIT-I: Construction of fish farm

Site selection—fish pond structure—construction—types of fish ponds—pond community—control of aquatic weeds and predators.

UNIT-II: Fish farm management

Nursery, rearing and production ponds—induced breeding—Indian major carps, Chinese carps—jar hatchery—seed fish production—transport of breeders and seed fish.

UNIT-III: Composite fish culture

Species—feeding—production—economics—culture of air breathing fishes—seed collection—rearing—storing—trout culture—characteristics and culture practices.

UNIT-IV: Culture of fresh water prawn

Characteristics and distribution—life cycle—collection of seeds—management of production ponds—growth and production

Text book:

Pillay T.V.R., (1990) Aquaculture: Principles and practices. Fishing news books. Cambridge university press, Cambridge.U.K.

Reference:

- 1..Michael B. and somsakSingholka 2002 FAO, Manual on freshwater Prawn farming. UNDP-FAO, Rome
- 2.Midlen and T.A.Redding (1998) Environmental Management for Aquaculture. Kluwer academic publishers, London.
- 3 .New, M.B. 2000. Fresh water prawn farming.CRC Publications.
- 4.Welcomme,R.L. 2001: Inland Fisheries: Ecology and Management, Fishing news Books.

DAQ 1901**Aquaculture Lab – I****10h/wk-****10credits**

The laboratory component includes exercises for collection and identification of Fin fish and shell fish and their physiology. Maintenance of pond and culture techniques is studied.

- 1) Collection and identification of commercially important fresh water and marine fishes.
- 2) Gut content analysis of fishes with different feeding habits
- 3) Estimation of fecundity and gonad somatic index of commercially important fishes.
- 4) Morphometric measurements of fishes.
- 5) Assessment of seed quality and feed ration calculation.
- 6) Lime and fertilizer requirement calculations.
- 7) Analysis of water: Turbidity, pH, Dissolved oxygen, Alkalinity etc...
- 8) Primary productivity, estimation by Light and Dark bottle method.

- 9) Preparation of pituitary extract.
- 10) Visiting nearby aquaculture farms and dams

Reference:

T.V.R.Pillay (1990) Aquaculture: Principles and practices. Fishing news books. Cambridge university press, Cambridge. U.K.

DAQ 1302**Ornamental fish culture**

4h/wk-4credits

This course is designed to impart views and essential methods regarding various aspects of ornamental fish culture with practical approach. It introduces the types of aquaria, aquarium fishes and aquarium plants, breeding techniques and their transportation. Finally various diseases attacking the fishes and control measures are dealt with.

UNIT-I: Aquarium keeping

History—kinds of aquaria— setting up of an aquarium ---requirements for maintaining an aquarium—aquarium accessories—risk factors.

UNIT-II: Popular ornamental fishes Cypriniformes—Perciformes—life cycle and spawning behavior—plants for aquarium—exotic and indigenous plants.

UNIT-III: Transport, food, feeding and breeding

Transport methods and preservation—food items—important live feed—induced breeding—induced maturation techniques.

UNIT-IV: Diseases and Economics

Common diseases—control and cure—quarantine tanks—pet shops and fish dealers.

Text book:

Carl,E.Bond. 1979. Biology of fishes, Saunders College publications.

References:

1. Yadav, B.N 2006. Fish and fisheries 4 th edition. Daya publishing House.
2. Stickney, R.R.1979 Principles of Aquaculture. John wiley& Sons, NY
3. Axelrod, H.R., 1967.Breeding aquarium fishes.TFH publications Inc.England.
4. Srivastava, C.B.L., 1985.Textbook of fishery science and Indian Fisheries. KutubMahal Publications, Allahabad.
5. Thabrow De, W.V. 1981.Popular aquarium plants. Thornbill Press.UK.

DAQ 1304**SHRIMP FARMING****4h/wk-4credits**

This course aims at providing students with a comprehensive knowledge on important aspects of the shrimp farming techniques. Basic concepts in shrimp biology, their culture methods including water quality maintenance in ponds and feeding will be thought. Special emphasis is given for disease prevention and various control measures. The harvesting techniques and grading the catch is discussed in the later part. Finally organizations involved in export and government schemes are dealt.

UNIT-I. Shrimp biology

Habit and habitat—life cycle of different Penaeids—culture based on economic and commercial considerations—developmental stages—culture based on types and designs of culture sites.

UNIT-II. Seed collection and Induced breeding

Wild collection and breeding—hatchery practices—Nurseries.

UNIT-III. Culture methods

Monoculture—Polyculture—Grow out ponds—pre treatment of inlet water -- Water quality maintenance—feeding—disease prevention.

UNIT-IV. Harvesting, preservation, mortality and Economics

Harvesting methods—precautions observed during harvesting—preservation techniques—sorting and grading the catch—seafood export promotion and organizations involved—role of co-operatives in shrimp export—treatment of shrimp farm effluents and sediments.

Text book:

Kurien, C.V and Sebastian.V.O. 1976 Prawns and prawn Fisheries of India. Hindustan Pub.Co.

Reference:

1. Chen, T.P. 1976 Aquaculture practices in Taiwan. Fishing News (Books) Ltd., England.
2. Pillay, T.V.R. and Dill.M.A. 1979 Advances in Aquaculture. Fishing News (Books) Ltd., England.
3. Bose, A.N. Gosh.C.T, Yong and A.Mitra, 1991 Coastal Aquaculture Engineering. Oxford & IBH Publishing company Pvt.Ltd.

DAQ 1902**Aquaculture Lab – II****10h/wk 10credits**

The laboratory component includes exercises for identification of various ornamental fishes and their breeding techniques. In Shrimp farming the large scale cultivation techniques pond preparation work and its maintenance will be taught.

- 1) Collection and identification of commercially important ornamental fishes.
- 2) Gut content analysis of fishes /shrimp with their different feeding habits.
- 3) Estimating the growth parameters
- 4) Conditioning and packing of ornamental fishes
- 5) Preparation of feed for ornamental fishes.
- 6) Identification of ornamental fish diseases and prophylactic measures.

- 7) Collection and identification of commercially important shrimps.
- 8) Types of fertilizers—pond preparation in shrimp culture.
- 9) Analysis of Water quality parameters.
- 10) Estimation of feed intake and growth monitoring.
- 11) Study of disease causing microbes and identification in shrimp.
- 12) Estimation of bacterial population in water and shrimps.

Text book:

Srivastava, C.B.L., 1985. Textbook of fishery science and Indian Fisheries. KutubMahal Publications, Allahabad.

References:

1. Kurien, C.V and Sebastian.V.O. 1976 Prawns and Prawn Fisheries of India. Hindustan Pub. Co.
2. Boyd, C.E. 1982 Water quality Management for pond fish culture. Elsevier scientific Publishing Company

AAQ 2301**FISH SEED PRODUCTION****3h/wk-3credits**

This course on fish seed production deals with various reproductive behaviors and breeding techniques. It also includes the hypophysation and using other ovulating agents in fish breeding. Various methods in transporting the seed fish and breeders are also discussed in detail.

UNIT-I Reproductive biology of carps, air breathing fishes

Reproduction in carps—sexual dimorphism, maturation and spawning of fish—factors affecting reproduction of air breathing fishes - channa, clarius and anabas.

UNIT-II Natural and Bundh breeding

Survey of seed resources and requirements --carp and prawn wild seed resources in brackish water and major rivers—bundh breeding types, techniques and problems – fecundity and mortality.

UNIT-III Induced breeding

Hypophysation of major carps and exotic carps—pituitary gland collection and preservation—other ovulating agents, their dosage for injections—precautions--- water quality.

UNIT-IV. Transport of seed fish and Breeders

Transport methods in fish seed and brood fishes—causes of mortality during transport, open and closed system—use of anesthetics.

Text book:

Jhingaran, V.G. 1991 Fish and Fisheries of India. Hindustan Publ. Corporation (India).

References:

1. John.E. Bardach John H. Ryther, William O. McLarney, 1972 Aquaculture—The Farming and Husbandry of Freshwater and Marine organisms. John Wiley & Sons, NY.
2. Pondey, A.C. 1990 Air Breathing Fishes. Reliance Publishing House, New Delhi.

3. Chondar, C.L. 1980 Hypophysation of Indian major carps, Satish Book Enterprise, Agra.
4. Thomas, P.C. .2003. Breeding and seed production of finfish and shell fish, Daya publishing house, New Delhi.

AAQ 2303**Live feed production****4h/wk-4credits**

Live feed production is emerging areas where the live organisms are cultivated in mass to fulfill the feed requirements. Emphasis is given to the cultivation of Diatoms, Rotifers, Artemia and Daphnia. Various techniques involved in their cultivation are discussed in detail.

UNIT-I. Mass culture of Diatoms

Methods of culture, maintenance of pure culture of diatoms—different media used for culture—batch culture, continuous culture and mass culture.

UNIT-II. Culture of Rotifers

Methods of collection, maintenance and rearing of rotifers—mass culture—harvest, storage and feeding.

UNIT-III. Artemia culture

Different strains of Artemia—Artemia culture, cyst production, enrichment of Artemia cyst and larvae.—encapsulation of Artemia cyst, hatching, storage and feeding.

UNIT-IV. Mass culture of Daphnia

Construction and preparation of culture tanks—field collection and isolation—inoculation and water quality maintenance—harvesting and sampling.

Textbook:

Lavens, P. and Sorgeloss, P. 1996. Manual on production and use of live food for aquaculture. FAO. Fisheries Technical paper, 361, FAO, Rome.

References:

1. Santhanam, R., Ramanathan, M. Vekataramanujam. 1997: A Manual of Methods in Plankton. Fisheries College, TNVAS. University, Tuticorin.
2. CIFE Publin. 1993. Training manual on culture of live food organisms for aqua hatcheries. Central Institute of Fisheries education, Versova, Mumbai, India.
3. Muthu, M.S., 1983. Culture of Live feed organisms. Tech. paper 14. Summer Institute in Hatchery production of prawn seeds. CMFRI, Cochin.

AAQ 2901**Aquaculture Lab - III****10h/wk-10credits**

The laboratory component includes exercises for identification of sexually matured fish and shrimp and their breeding techniques. In live feed production large scale cultivation of various organisms will be taught.

- 1) Biological analysis of fish samples for maturity stages and fecundity.
- 2) Standardization of commercial ovulating agents.
- 3) Designing and estimation of area of construction for freshwater fish seed production.
- 4) Wild seed collection from natural sources.
- 5) Visiting aquaculture farms and finfish hatcheries.

- 6) Collection, identification and isolation of live food organisms.
- 7) Preparation of culture media.
- 8) Identifying different strains of artemia and its culture.
- 9) Collection of rotifers and rearing.
- 10) Construction and preparation of Daphnia culture tanks.
- 11) Mass culture of Cladocerans, copepods and rotifers.
- 12) Culture of earthworms and chironomid larvae.
- 13) Visit to Manimuthar and Bhavanisagar During breeding season
- 14) Visit to Fresh water prawn farm

Text book:

Jingaran, V.G.1982 Fish and Fisheries of India.Hindustan Publ.Corporation (India).

Reference :

Lavens,P. and Sorgeloss,P. 1996.Manual on production and use of live food for aquaculture. FAO.Fisheries Technical paper,361,FAO,Rome.

AAQ 2302**Fish Feed Technology****4h/wk-4credits**

This theory course deals with the basic and applied aspects of feed production. Basic nutrient requirement of fish and their role in physiology. Various types of food preparation are discussed in detail. Commercial feed formulation and their energetic are discussed at the last section in the feeding methods and schedules, various techniques and tools are included.

UNIT-I. Nutritional requirement

Protein, carbohydrate and lipid requirement—amino acid, fatty acid and non protein sources—vitamins and minerals—food additives, immunostimulants, growth promoters and preservatives.

UNIT-II. Feed ingredients

Animal, plant and microbial origin, SCP, silages—nutritional factors, compound feed, pellets, scrambles and micro encapsulated feed.

UNIT-III. Fish feed Formulation and preparation

Feed formulation methods and square methods—On farm feed manufacture – commercial feed formulation—Food storage.

UNIT-IV. Fish Energetics

Feeding practices—feeding methods and scheduling—ration size, feed performance and economics.

Text book:

Guillance.J. Kaushik.S. Berqot.P. and Metallier.R. 2001. Nutrition and feeding of fish and crustaceans, Springer.

Reference:

1. Halver.J. and Hardy R.W. 2002. Fish nutrition. Academic press, London.
2. Lovell.R.T. 1998. Nutrition and feeding of fishes, Chapman & Hall, New York.

3. Houlihan,D.,Boujard,T. and Jobling,M. 2001. Food intake in fish. Blackwell Science Ltd,London.

AAQ 2304**Aquaculture products****4h/wk-4credits**

The objective of this course is to motivate the learner on the preparation of various aquaculture products. Further the students will be trained in making the value added products like fish and prawn pickles and marinated products. In the last section other value added products like sea weed agar and carrageenan are discussed in detail.

UNIT-I. Value Addition in sea food

Different stages of value added products from fish and shell fish—advantages of value addition – Export value – supply and demand – marketing strategies.

UNIT-II. Fish mince based products/coated fishery products

Fish mince and surimi production – different types of batter and breading --- packaging and storing.

UNIT-III. Other Value added products

Preparation of fish/prawn pickles, fish wafers, fish protein hydrolysate, fish curry and mussel products and marinated products.

UNIT-IV. Fishery by-products

Fish meal, protein concentrate, shark fin rays, fish maws, fish liver oil, squalene, pearl essence, gelatin, beche-de-mer, fish silage, sea weed products like agar, alginic acid and carrageenan.

Text book:

Srivastava.C.B.L. 1988 AText book of Fishery science and Indian Fisheries.KitabMahal publications

Reference: John.E.Bardach John H.Ryther,WilliamO.McLarney, 1972 Aquaculture—The Farming and Husbandry of Freshwater and Marine organisms. John Wiley& Sons, NY.

AAQ 2902**Aquaculture Lab - IV****10h/wk-10credits**

The laboratory component includes exercises for formulation and preparation of fish feed and feeding schedule. It will help to find the growth rate of fish and to prepare the value added fishery products for commercial sales.

- 1) Formulation and Preparation of a balanced Fish feed.
- 2) Estimation of FCR from feeding trails and preparation of feeding table.
- 3) Estimation of growth parameters from feeding trails.
- 4) Feeding schedule preparation.
- 5) Identification of brooders maturity.
- 6) Determination of moisture content in fish and fish products.
- 7) Preparation of fishery byproducts.
- 8) Fish pickling techniques.

- 9) Value added fish product preparation like fish curry, cutlets and fish fingers.
- 10) Preparation of Surimi.
- 11) Visiting nearby fish products commercial outlets.

Reference:

Srivastava.C.B.L. 1985 Text book of Fishery science and Indian Fisheries. KitabMahal publications

Department of English (UG)**Certificate Courses in English**

Sem	Code	Title	Hrs	Cr	Marks
I		Effective Communication	4	4	100
II		Spoken English	4	4	100
III		American English	4	4	100
IV		Business English	4	4	100
V		English for Study Abroad	4	4	100
VI		English for Employability	4	4	100

Certificate Courses in English

Rationale

The College has two streams of students; aided and self-financed. Due to certain systemic constraints, the academic programmes offered at the undergraduate and postgraduate levels do not accommodate certain skills-oriented contents of learning as part of the academic curriculum at a time when knowledge in each field expands exponentially and phenomenally. Besides, higher educational monitoring agencies like UGC and NAAC encourage and expect the colleges to offer certificate courses on the skills that are immediately relevant and useful to students both while pursuing their studies and after they have completed them. Students of the college find sufficient time to do certificate courses outside the regular hours of study due to shift system that has been in vogue since the late 1990s.

Effective Communication Skills

[ECS)

Competence in oral communication—listening and speaking—is a prerequisite to graduates' academic, professional, and personal success in life. Employers identify communication as one of the basic competencies that every graduate should have, asserting that the ability to communicate is valuable for obtaining employment and maintaining successful job performance.

Objectives

Students shall be able to

- i. become effective listeners and fluent speakers in English
- ii. understand the complementary nature of body language to your verbal communication
- iii. improve their problem-solving capacity
- iv. demonstrate the presentation skills, interview skills, and GD skills
- v. develop high order thinking skills

Unit 1: Non-Verbal Communication

Unit 2: Oral Communication Skills: Listening

Unit 3: Conversing

Unit 3: Problem Solving

Unit 4: Presentation Skills

Unit 5: Interview Skills

Unit 6: GD skills

Unit 7: HOT Skills

Reference

Bhatnagar, Nitin. 2011. *Effective Communication and Soft Skills*. Delhi: Pearson Education.

Sasikumar, V. Geetha Rajivan, & P. Kiranmai Dutt. 2010. *A Course in Listening & Speaking*. Delhi: CUP.

Dalye, C.Y. 2004. *The Quick & Easy Way to effective Speaking*. Delhi: Sulabh

Dignen, B. 2011. *Fifty Ways to Improve Your Presentation Skills in English: without too much effort*. Delhi: Orient Blackswan

Montemayor, L. 2013. *Emotional Communication: Non-Verbal Strategies*. Delhi: Createspace.

English for Employability

[EE]

Knowing English means getting better jobs, higher pay, more authority, easier growth, bigger opportunities, and happier life against limited opportunities, at one's own place, small job, and low pay if someone does not know English. English is globally seen as an economically empowering language that opens up the vistas of employment opportunities across the world.

Objectives

Students shall be able to

- i. write an impressive resume
- ii. prepare a cover letter
- iii. familiarize with written test skills
- iv. introduce themselves at interviews and use email etiquette
- v. acquire the team spirit

Unit 1: Resume Writing

Unit 2: Cover Letter

Unit 3: Written Test

Unit 4: Self Introduction

Unit 5: Interview

Unit 6: Group Discussion

Unit 7: Email etiquette

Reference

- C. L. N. Prakash, et al. 2013. **English for Jobseekers: Language and the Soft Skills for the Aspiring**. New Delhi: Foundation.
- Rao, M.S. 2011. **Soft Skills Enhancing Employability: Connecting Campus with Corporate**. Delhi: IK International.
- Seely, John. 2013. **Oxford Guide to Effective Writing and Speaking**. London: OUP
- Brown, Lola. 2006. **Specifications of Resume Writing Made Easy: A Practical Guide to Resume Preparation and Job Search**. Delhi: Pearson Education.
- Karsh, Brad. 2009. **How to Say It on Your Resume: A Top Recruiting Director's Guide to Writing the Perfect Resume for Every Job**. Delhi: Penguin

Spoken English

[SE]

This Course is meant for English speaking beginners who need help to understand the basics of speaking English. To speak English fluently seems to be a dream of every college student in India. Fluent communication requires understanding of what is being spoken. Improving one's listening skill is therefore the only way to speak fluently. The Course aims at improving students' listening skills and then speaking skills both successively and simultaneously.

Objectives

Students shall be able to

- i. demonstrate the listening skills
- ii. demonstrate confidence when speaking
- iii. use the English language within a number of practical situations
- iv. show the skills of persuasion and debate
- v. understand and use idioms, slang, colloquial vocabulary

Unit 1: Listening

- Use key words to construct the schema of discourse
- Infer the role of the participants in a situation
- Infer the topic of a discourse
- Infer the outcome of an event

Unit 2: Listening

- Infer the cause and effect of an event
- Infer unstated details of a situation
- Infer the sequence of a series of events
- Infer comparisons
- Distinguish between facts and opinions

Unit 3: Speaking

- Reproduce sounds.
- Know and use practical vocabulary
- Use spoken idioms
- Respond in sentences
- Use appropriate speech acts

Unit 4: Speaking

- To agree or disagree
- To identify people and places
- To express preferences
- To express opinions
- To ask for and give suggestions
- To report on what people are asking and saying.
- To summarize a conversation

Unit 5: Conversational Skills

- Handling objections and resistance
- Mini-speeches
- Thinking carefully, creatively, and ahead
- Interpersonal and social skills
- Questioning techniques

Reference

- Gangal, J.K. 2012. *A Practical Course in Spoken English*. Delhi: PHI Learning.
- Khanna, V. 2013. *Spoken English* New Delhi: International Book House.
- Balan, J. 2010. *Spoken English*. Delhi: McGraw Hill Education (India)
- Dignal, C. 2014. *Negotiation Skills in 7 Simple Steps*. Delhi: Collins.

**American English
(AE)**

The aim of this course is to create awareness and equip students in American English (AE) for their employability and success in their professional and personal life.

Objectives

At the end of the course students shall be able to

- i. acquire AE phonetic skills
- ii. hone AE grammar
- iii. learn AE vocabulary
- iv. attain AE conversational skills
- v. understand the peculiarities of AE usage

Unit 1: AE Phonetics and Phonology

AE Pronunciation Skills and AE Accent

Unit 2: AE Grammar

Basic AE Grammar, AE Syntax, Differences in AE and British English (BE), Differences between AE and BE syntax

Unit 3: AE Vocabulary

AE Lexicon, Idioms, Common AE Word List, Differences between AE and BE Lexicon,

Unit 4: AE Conversation

Everyday AE, AE Usage, Standard AE Usage, AE Dialects, Common AE Dialect,

Unit 5: AE Usage

AE Speech Acts, AE in Real Life Situations, AE for Occupational Purpose, AE in Universities and Colleges

Independent Reading

Reading: **The Gift of Magi and Other Stories**, O. Henry

Textbook: to be prepared by the Department Faculty who will act as course writers and reviewers

Business English

This course aims at enabling students to improve their communication skills in English for business purposes. Students will be trained to become more confident, accurate and fluent in business communication.

Objectives

Students shall

- i. learn to write letters, faxes, memos and reports
- ii. listen and comprehend broadcasts and discussions on business topics
- iii. have speaking exercises involving functional expressions which will help develop fluency
- iv. read and understand texts on various business topics
- v. learn various jargon and business specific terms to enrich their vocabulary.

Unit 1: Writing- drafting sales letters, business reports, faxes and memos.

Unit 2: Listening - significance of listening, barriers to effective listening, note-taking, audio recordings for listening exercises.

Unit 3: Speaking - telephone conversations, responding to queries, sales negotiation, public speaking, group discussions and presentations.

Unit 4: Reading – reading comprehension passages, business texts

Unit 5: Vocabulary- technical terms and expressions

References

Jones, Leo & Alexander, Richard. **New International Business English**. UK: Cambridge University Press, 2000.

Cambridge BEC Preliminary. Cambridge: CUP, 2005.

Cambridge BEC Vantage. Cambridge: CUP, 2005.

Cambridge BEC Advanced. Cambridge: CUP, 2005.

English for Study Abroad [ESA]

The certificate course provides tools and guides to help students prepare for the international tests such as TOEFL/IELTS, and improve their English language skills. It offers training through intensive and structured modules and comprehensive study material to excel in the tests. It also provides practice tests that assist students to get a real-time experience.

At the end of the course students shall be able to

- Understand the different modules of TOEFL and IELTS
- Measure their ability to use the English language
- Understand the use of English at the university/college level
- Combine LSRW to perform academic tasks
- seek admissions to English-language learning program abroad

UNIT I: INTRODUCTION

Next Generation TOEFL iBT, International English Language Testing System, learn about listening, reading, writing, and speaking skills.

UNIT II: READING

This unit measures students' ability to understand non-specialised texts. Students read long passages with tasks, texts range from descriptive and factual to the discursive and analytical. It also includes non-verbal materials such as diagrams, graphs or illustrations.

UNIT III: LISTENING

This unit measures aptitude for understanding English as it is spoken in North America with everyday vocabulary, expressions and grammar. Students listen to lectures, classroom discussions and conversations, and then answer questions. It also measures aptitude for understanding English as it is spoken in England with everyday vocabulary, expressions and grammar. Students listen to monologues and conversations, then answer questions.

UNIT IV: SPEAKING

This unit helps them express an opinion on a familiar topic; speak based on reading and listening tasks. It also trains them to face face-to-face interview, short questions, speaking at length about a familiar topic and a structured discussion.

UNIT V: WRITING

This unit measures ability to write a text in English on a specific subject. Students will be able to generate, organize and support ideas using common written English in an essay format. They write essay responses based on reading and listening tasks; support an opinion in writing. It also focuses on helping them summarize, describe or explain a table, graph, chart or diagram.

References

- Hewings, Martin. (1999). **Advanced English Grammar: A Self study References and Practice Book for Advanced South Asian Students with Answers**. New Delhi: Foundation Books.
- Lewis, Norma. (1978). **How to Read Better and Faster**. New Delhi: Binny Publishing House.
- Sharpe, Pamela (2013). **J. Barren's TOEFL iBT**. New Delhi: Galgottia.
- Swan, Michael. (2000). **Practical English Usage**. International student's Edition. Oxford: OUP.
- Turton, Nigel D. (1997). **ABC of Common Errors: for Learners of English**. Delhi: Macmillan.
- Wood, Frederick. (1987) **Current English Usage**. London. Macmillan.
- Zandvoort. (1976). R. W. **A Handbook of English Grammar**. London: Longman.
- IELTS website: <http://www.ielts.org/>
- TOEFL website: <https://www.ets.org/toefl>
<http://www.toeflgoanywhere.org/>

Internal & External Evaluation Patterns for Certificate Courses**Effective Communication Skills**

Written: 50%

Oral : 50%

English for Employability

Written: 70%

Oral : 30%

Spoken English

Oral : 100%

English for Study Abroad

Written: 50%

Oral: 50%

Eligibility

Both UG & PG students

Timing

Morning : SF Students

Afternoon : Aided Students

Duration

Four hours per week from Monday through Thursday

Credits

Four Credits