

S.NO.	Part	Study Components		Ins. hrs /week	Credit	Title of the Paper	Maximum Marks		
		Course Title					CIA	Uni. Exam	Total
SEMESTER III							CIA	Uni. Exam	Total
16.	I	Language	Paper-3	6	4	Tamil / Other Languages	25	75	100
17.	II	English	Paper-3	6	4	English	25	75	100
18.	III	Core Theory	Paper-5	4	4	British literature II	25	75	100
19.	III	Core Theory	Paper-6	5	4	Introduction to English Phonetics	25	75	100
20.	III	ALLIED-2	Paper-3	5	3	History of English literature I	25	75	100
21.	IV	Skill based Subject	Paper-1	2	2	Skills for Employment	25	75	100
22.	IV	Non-major elective	Paper-1	2	2	Language skills and communication I	25	75	100
Sem. Total				30	23		175	525	700
SEMESTER IV							CIA	Uni. Exam	Total
23.	I	Language	Paper-4	6	4	Tamil/Other Languages	25	75	100
24.	II	English	Paper-4	6	4	English	25	75	100
25.	III	Core Theory	Paper-7	5	4	British literature III	25	75	100
26.	III	Core Theory	Paper-8	4	3	History of English Language	25	75	100
27.	III	ALLIED-2	Paper-4	5	5	History of English Literature II	25	75	100
28.	IV	Skill based Subject	Paper-2	2	2	Writing for special purpose	25	75	100
29.	IV	Non-major elective	Paper-2	2	2	Language skills and communication II	25	75	100
Sem. Total				30	24		175	525	700
SEMESTER V							CIA	Uni. Exam	Total
30.	III	Core Theory	Paper-9	5	4	British literature IV	25	75	100
31.	III	Core Theory	Paper-10	6	4	Shakespeare	25	75	100
32.	III	Core Theory	Paper-11	6	4	Literary Criticism.	25	75	100
33.	III	Core Theory	Paper-12	6	4	Subaltern Literature	25	75	100
34.	III	Internal Elective	Paper-1	4	3	(to choose one out f two) A. Children Literature B. Journalism	25	75	100
35.	IV	Skill based Subject	Paper-3	3	2	Content writing	25	75	100
Sem. Total				30	21		150	450	600
SEMESTER VI							CIA	Uni. Exam	Total
36.	III	Core Theory	Paper-13	5	4	Contemporary Literature	25	75	100
37.	III	Core Theory	Paper-14	5	4	Indian Writing in Translation	25	75	100
38.	III	Core Theory	Paper-15	5	3	New Literatures in English	25	75	100
39.	III	Compulsory	Paper-16	5	5	Group / Individual Project	25	75	100

2. The student will be able to know about GD
3. The student will be able to know how to prepare for GD
4. The student will be able to understand leadership and problem solving skills
5. The student will be able to develop leadership and problem solving skills

Unit - II

1. The student will be able to discuss the purpose of interviews
2. What are the technique the student will be able to follow at the time of interviews
3. The student will be able know their strengths and weakness
4. The students will be able to focus purpose of interviews
5. The student will be able to concentrate do and don'ts while attending the interviews

Unit - III

- 1.The students will be able to Know how to lay out the details in a CV
- 2.The student will be able to learn how to organize in formation in an cover letter
- 3.The student will be able come to know how to write a covering letter
- 4.The student will be able to know FAOS about their family members
- 5.The student will be able to learn how to answer question about yourself and your family

Unit - IV

- 1.The students will be able to grasp the workplace etiquette.
- 2.The student will come to know values and Ethics
- 3.The student will be able to discuss culture issues.
- 4.The students will be able to know equal rights of boys and girls
- 5.The students will come to know empowerment of women

Unit - V

- 1.The students will be able to know ones likes and dislikes
- 2.The student will be able to understand their attitude.
- 3.They will be become familiar with things they need to talk about to answer a question.
- 4.They will be able to answer the question about the suitability of the job.
- 5.The student will be able to understand positive qualities that are valued at work.

Reference

Co, Lina Mukhopadhyay &. *Polyskills: A course in communication skills and life skills.*
Chennai:
Foundation, 2012. print.

NON-MAJOR ELECTIVE

PAPER - 1

LANGUAGE SKILLS AND COMMUNICATION I

Course Objectives

To improve the ability of speaking skills.

To provide training in developing the interpersonal skills.
To develop communicative skills
To make students confident in dealing with communicative skills
To facilitate students practical social knowledge through conversations

UNIT - I

1. Meeting people
2. Exchanging greetings
3. Introducing, others, giving personal information, talking about people animals and places

UNIT - II

1. Answering telephone, asking for someone
2. Making enquiries on the phone
3. Dealing with wrong number
4. Taking and leaving messages

COURSE OUTCOMES

UNIT - I

1. Students will be able to know how to behave while meeting people.
2. Students will be able to understand the ways of exchanging greetings.
3. Students will be able to introduce them to a group of people.
4. Students will be able to understand how to introduce others in any situation.
5. Student will be able to understand how to give personal information in a coherent way.

UNIT - II

1. Students will be able to know how to converse over phone.
2. Students will be able to know how to enquire over phone in formal situation
3. Students will be able to know how to deal with wrong numbers in telephone.
4. Students will be able to know how to take and leave message after a telephonic conversation.
5. Students will be able to develop the skill of answering over phone.

Text books:

Mastering communication skills and soft skills

N.Krishnaswamy, ManjuDariwal, LalithaKrishnaswamy(Bloomsbury)

SEMESTER IV

CORE PAPER - 7

BRITISH LITERATURE III

Objectives

3. Shape a persuasive message
4. Draft sales letters
5. Interact with international correspondence

Text Book :

Reference: Effective business writing Maryann PIOTROWSKI, Harper Collins publisher. Inc. NY 10022

NON-MAJOR ELECTIVE

PAPER - 2

LANGUAGE SKILLS AND COMMUNICATION II

Course Objectives

1. To enable the students to improve both ability to communicate and linguistic competence in the language.
2. To study a language and various transferable skills as a part of this course

UNIT - I:

1. **Getting people's attention and interrupting**
2. **Giving instructions and seeking clarification**
3. **Making requests, asking for directions and giving directions.**

UNIT - II:

1. Inviting, accepting and refusing invitation.
2. Apologizing and responding to an apology.
3. Congratulating and responding to congratulations.
4. Asking for, giving and refusing permission.

COURSE OUTCOMES

UNIT I

1. Students will be able to use expression to get someone's attention.

2. Students will be able to mention connecting word while giving instruction.
3. Students will be able to know the ways of making request, asking for directions, and also giving directions.
4. Students will be able to know how to give instruction and seek clarification.
5. Student will be able to grasp the procedures while present dialogues for any situation.

UNIT II

1. Students will be able to know how to invite, accept and refusing invitation.
2. Students will be able to develop the formal and informal ways for accepting and declining invitation.
3. Students will be able to know how to congratulate and how to respond to congratulations.
4. Students will be able to know how to ask, give and refuse permission in both formal and informal situations.
5. Students will be able to learn how to apologize and respond to apologize.

Text books:

KamleshSadam and SusheelaPunitha. Spoken English:
A Foundation Course (Part I). Orient black swan. 2014

SEMESTER V

CORE PAPER - 9

BRITISH LITERATURE IV

Course Objectives

1. To introduce the twentieth century British literature.
2. To comprehend the development of trends in British literature.
3. To view British literature in its socio-cultural and political contexts.
4. To understand the theme, structure and style in twentieth century British literature.
5. To learn interpretative techniques like modernism and post-modernism in order to apply in the literary texts of various genres.

SYLLABUS

UNIT - I: POETRY

1. Second Coming - W.B Yeats
2. Tollund Man - Seamus Heaney
3. A Prayer for My Daughter- W.B.Yeats

UNIT - II: POETRY


ANNAMALAI UNIVERSITY

103 B.A. ENGLISH

Programme Structure and Scheme of Examination (under CBCS)
(Applicable to the candidates admitted in Affiliated Colleges
in the academic year 2022 -2023 ONLY)

Course Code	Part	Study Components & Course Title	Hours/Week	Credit	Maximum Marks		
					CIA	ESE	Total
SEMESTER- I							
22UTAML11	I	Language Course - I: Tamil-I	5	3	25	75	100
22UENGL12	II	English Course - I: Communicative English I	5	3	25	75	100
22UENGC13	III	Core Course - I: Literary Genres and Forms	5	4	25	75	100
22UENGC14		Core Course - II: Symphony of Verse	5	4	25	75	100
22UENGA15		Allied Course -I: Social History of England I	5	3	25	75	100
22UENGS16	IV	Skill Based Course - I: English for Secretarial Practice	3	2	25	75	100
22UENV18	IV	Environmental Studies	2	2	25	75	100
Total			30	21			700
SEMESTER - II							
22UTAML21	I	Language Course - II: Tamil-II	5	3	25	75	100
22UENGL22	II	English Course - II: Communicative English II	5	3	25	75	100
22UENGC23	III	Core Course - III: Harmony of Prose I	5	4	25	75	100
22UENGC24		Core Course -IV: Advanced English Grammar	5	4	25	75	100
22UENGA25		Allied Course - II: Social History of England II	3	3	25	75	100
22UENGS26	IV	Skill Based Course - II: Effective Business Writing	2	2	25	75	100
22UVALE27	IV	Value Education	2	1	25	75	100
22USOFS28	IV	Soft Skill	1	1	25	75	100
22UNMSD01	IV	Language Proficiency for Employability: EFFECTIVE ENGLISH	2	2	25	75	100
Total			30	23			900

SEMESTER - I SKILL BASED COURSE - I PART - IV	22UENG16: ENGLISH FOR SECRETARIAL PRACTICE	CREDITS: 2 HOURS: 3/W
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COURSE OBJECTIVES

- 1) Make the students grasp the strategies involved in developing effective communication.
- 2) Augment students' language proficiency to meet the demands of the job market.
- 3) Help students develop management skills and enhance their personality.
- 4) Empower students' skills and personality.
- 5) Students get a chance to uplift their skills and gain knowledge in handling correspondence independently.

Unit 1

- 1) Speaking and expressing ideas and feelings effectively.
- 2) Listening carefully and providing feedback.
- 3) Planning and co-ordinating tasks.
- 4) Negotiating with and persuading others.

Unit 2

- 1) Business Writing Today.
- 2) Choosing the Right Word
- 3) Special Writing and Research projects

Unit 3

- 1) Working well under pressure and accepting responsibility
- 2) Ability to prioritise tasks on your own
- 3) Self-evaluation and decision making

Unit 4

- 1) Personality development
- 2) Creating and using blogs
- 3) E-learning

Unit 5

- 1) Technical Reports
- 2) Forms, Memos , E-mail
- 3) Business Letters
- 4) The Job Search Resumes and Letters

COURSE OUTCOMES

This course will enable students to

- 1) Read and interpret documents, plan and organise work processes, identify materials.
- 2) Perform tasks with due consideration.
- 3) Apply professional skill, knowledge and employability while performing jobs.
- 4) Understand the nature and scope for communication in different jobs.
- 5) Provide students a wide-range of writing knowledge in business communication

Text Books

- 1) Kumar, Sanjay. Communication Skills, 2nd edition, Oxford University Press,2015.
- 2) Mitra K.Barun. Personality Development.2nd edition,Oxford University Press,2016.
- 3) Jones K.Lawrence.Job Skills for the 21st Century; a Guide for Students. Greenwood Press, 1995.
- 4) Biech, Elaine. Skills for Career Success, Audio Book, narrated by Williams, Tiffany.

OUTCOME MAPPING

	PO1	PO2	PO3	PO4	PO5
CO1	2	2	3	3	3
CO2	2	2	3	3	3
CO3	2	2	3	3	3
CO4	2	2	3	2	3
CO5	2	2	3	3	3

S.NO.	Part	Study Components		Ins. hrs /week	Credit	Title of the Paper	Maximum Marks		
		Course Title					CIA	Uni. Exam	Total
SEMESTER III									
16.	I	Language	Paper-3	6	4	Tamil / Other Languages	25	75	100
17.	II	English	Paper-3	6	4	English	25	75	100
18.	III	Core Theory	Paper-3	4	4	General Chemistry - III	25	75	100
	III	Core Practical	Practical-2	3	0	Inorganic Qualitative Analysis & Preparations	0	0	0
19.	III	ALLIED-2	Paper-3	4	3	Any one from 1. Physics -I 2. Botany -I 3. Zoology -I 4. Biochemistry - I 5. Mathematics - I*	25	75	100
	III	Allied Practical	Practical-2	3	0	Allied practical-II	0	0	0
20.	IV	Skill Based Subject	Paper-1	2	2	Water Treatment and Analysis	25	75	100
21.	IV	Non-Major Elective	Paper-1	2	2	Medicinal Chemistry	25	75	100
				30	19		150	450	600
SEMESTER IV									
22.	I	Language	Paper-4	6	4	Tamil/Other Languages	25	75	100
23.	II	English	Paper-4	6	4	English	25	75	100
24.	III	Core Theory	Paper-4	4	4	General Chemistry - IV	25	75	100
25.	III	Core Practical	Practical-2	3	3	Inorganic Qualitative Analysis & Preparations	25	75	100
26.	III	Allied-2	Paper-4	4	3	Any one from 1. Physics -II 2. Botany -II 3. Zoology -II 4. Biochemistry - II 5. Mathematics - II*	25	75	100
27.	III	Allied Practical	Practical-2	3	2	Allied practical-II	25	75	100
28.	IV	Skill Based Subject	Paper-2	2	2	Food Chemistry	25	75	100
29.	IV	Non-Major Elective	Paper-2	2	2	Chemistry in Every Day Life	25	75	100
				30	24		200	600	800

**NON-MAJOR ELECTIVE
PAPER - 1
MEDICINAL CHEMISTRY**

Objectives:

To learn the basic idea of Drugs and Names of Common Drugs, Blood, Blood Pressure, Diabetes, AIDS, Vitamins, Indian Medicinal Plants and First Aid.

UNIT - I

Clinical Health and Biochemical Analysis - Definition of Health - WHO standard - Sterilisation of Surgical Instruments - Biochemical Analysis of Urine and Serum - Blood - Composition of Blood - Blood grouping and Rh factor.

UNIT - II

Common Drugs - Antibiotics, Antipyretics and Analgesics - Examples, Uses and Side effects - Anti-inflammatory agents, Sedatives, Antiseptics and Antihistamines - Examples, Uses and Side effects - Tranquilizers, Hypnotics and Antidepressant drugs - Definition, Examples, Uses and Side effects.

UNIT - III

Vital Ailments and Treatment - Blood pressure - Hypertension and Hypotension - Diabetes, Cancer, AIDS - Causes, Symptoms and Treatment - Vitamins - Classification of Vitamins - Sources and Deficiency diseases caused by Vitamins.

UNIT - IV

Indian Medicinal Plants - Palak, Vallarai, Kizhanelli and Thumbai - Chemical Constituents and Medicinal Uses - Hibiscus, Adadodai, Thoothuvalai - Chemical Constituents and Medicinal Uses - Nochi, Thulasi, Aloe Vera - Chemical Constituents and Medicinal Uses.

UNIT - V

First Aid and Safety - Treatment of Shock, Haemorrhage, Cuts and Wounds - Burns - Classification - First Aid - Asbestos, Silica, Lead Paints, Cement, Welding fumes and Gases - Hazard alert and Precautions for Safety.

Reference Books

1. Applied Chemistry, Jayashree Ghosh - S. Chand and Company Ltd., 2006
2. Biochemistry, S. C. Rastogi - Tata McGraw Hill Publishing Co., 1993.
3. Medicinal Plants of India, Rasheeduz Zafar - CBS Publishers and Distributors, 2000.
4. Hawk's Physiological Chemistry, B. L. Oser - Tata-McGraw Hill Publishing Co. Ltd.
5. Practical Pharmaceutical Chemistry, A. H. Beckett and J. B. Stenlake - Vol. I - CBS Publishers and Distributors, 2000.

Outcome:

The Students will be able to

- 1) Understand the composition of blood and biochemical analysis of Urine and Serum
- 2) Gain knowledge about uses and side effects of Antibiotics, Antipyretics, Analgesics and tranquilizers.
- 3) Explain the causes, symptoms and treatment of Blood pressure, Diabetes, Cancer and AIDS.
- 4) Classify and understand the sources and diseases caused by deficiency of Vitamins.
- 5) Analyse the therapeutic importances of Indian Medicinal plants
- 6) Describe the first Aid and Safety treatment of Shock, Haemorrhage, Cuts and wounds and Burns.

NON - MAJOR ELECTIVE

PAPER - 2

CHEMISTRY IN EVERY DAY LIFE

Objectives:

- To know the basics of Chemistry in our life
- To know about the Food Colours, Plastics, Drugs etc.,

Course Outcomes:

Upon completion of this course, the students will be able to

- 1) Explain the preparations of cosmetics, soaps and detergents and the Hazards of Cosmetics used in everyday life.
- 2) Identify Adulterants in various food items.
- 3) Define and classify Vitamins and understand their physiological importance.
- 4) Describe Food preservative methods.
- 5) Define Antipyretics, Analgesics, Anesthetics and Sedatives.
- 6) Discuss the preparation and applications of plastics, Resins, Rubbers.
- 7) Classify fertilizers and describe their uses and Hazards.
- 8) Explain advantages and disadvantages of natural and artificial sweetening agents.

UNIT - I

General Survey of Chemicals used in everyday life - Cosmetics - Talcum Powder, Tooth pastes, Shampoos, Nail Polish and Perfumes - General formulation - Preparation - Hazards of Cosmetic use - Soaps and Detergents - Types - Preparation and Uses.

UNIT - II

Food and Nutrition - Carbohydrates, Proteins, Fats and Minerals - Examples - Vitamins Definitions - Classification - Sources and their Physiological importance - Balanced diet. Adulterants in Milk, Ghee, Oil, Coffee Powder, Tea, Asafoetida, Chilli Powder, Pulses and Turmeric Powder - Identification.

UNIT - III

Food colours used in food - Soft drinks and its Health hazards - Food Preservatives - Definition - Examples - Methods of preservation - Low and High temperature - Dehydration - Osmotic pressure - Food irradiation.

UNIT - IV

Plastics, Polythene, PVC, Bakelite, Polyesters, Resins and their Applications - Natural Rubber - Synthetic rubbers - Vulcanisation - Preparation and its Applications - Antipyretics, Analgesics, Anaesthetics, Sedatives - Definition - Examples and Uses.

UNIT - V

Gobar gas - Production - Feasibility and Importance of Biogas with special reference to Rural India - Fertilizers - Definition - Classification - Urea, NPK and Super phosphates - Need - Uses and Hazards - Sweetening agents - Sucrose and Glucose - Artificial Sweetening agents - Saccharin - Cyclamate - Advantages and Disadvantages.

Reference Books

1. Chemical Process Industries - Norris Shreve Joseph A. Brine .Jr.
2. Perfumes, Cosmetics and Soaps - W. A. Poucher (Vol 3).
3. Environmental Chemistry - A. K. DE.
4. Industrial Chemistry, B. K. Sharma- Goel publishing house Meerut.
5. Food Science - B. Srilakshmi - III Edition - New Age International Publishers, 2005.
6. Food Chemistry, Lillian Hoagland Meyer - CBS publishers & distributors, 2004.
7. Fundamental Concepts of Applied Chemistry - Jayashree Ghosh, S. Chand & Co Ltd., New Delhi - 2010.
8. Applied chemistry - K. Bagavathi Sundari - MJP Publishers (2006).

ANNAMALAI UNIVERSITY
BACHELOR OF COMPUTER APPLICATIONS
CBCS PATTERN

(With effect from 2021-2022)

The Course of Study and the Scheme of Examinations

S. No.	Part	Study Components		Ins. Hrs / week	Credit	Title of the Paper	Maximum Marks		
		Course Title					CIA	Uni. Exam	Total
SEMESTER I									
1.	I	Language	Paper-1	6	4	Tamil/Other Languages	25	75	100
2.	II	English (CE)	Paper-1	6	4	Communicative English I	25	75	100
3.	III	Core Theory	Paper-1	6	4	Programming in C	25	75	100
4.	III	Core Practical	Practical-1	3	2	Programming in C Lab	25	75	100
5.	III	Allied -1	Paper-1	7	3	Mathematical Foundations - I	25	75	100
6.	III	PE	Paper 1	6	3	Professional English I	25	75	100
7.	IV	Environmental Studies		2	2	Environmental studies	25	75	100
		Sem. Total		36	22		175	525	700
SEMESTER II									
8.	I	Language	Paper-2	6	4	Tamil/Other Languages	25	75	100
9.	II	English (CE)	Paper-2	6	4	Communicative English II	25	75	100
10.	III	Core Theory	Paper-2	5	4	C++ & Data Structure	25	75	100
11.	III	Core Practical	Practical-2	2	2	C++ and Data Structures Lab	25	75	100
12.	III	Allied-1	Paper-2	7	5	Mathematical Foundations - II	25	75	100
13.	III	PE	Paper 1	6	3	Professional English II	25	75	100
14.	IV	Value Education		2	2	Value Education	25	75	100
15.	IV	Soft Skill		2	1	Soft Skill	25	75	100
		Sem. Total		36	25		200	600	800

SEMESTER III						CIA	Uni. Exam	Total	
16.	III	Core Theory	Paper-3	5	4	Programming in JAVA	25	75	100
17.	III	Core Theory	Paper-4	4	4	E-Commerce	25	75	100
18.	III	Core Theory	Paper-5	5	4	Operations Research	25	75	100

B.C.A. Computer Applications (CBCS)

19.	III	Core Practical	Practical-3	4	3	Programming in JAVA Lab	25	75	100
20.	III	ALLIED-2	Paper-3	7	3	Financial Accounting-I	25	75	100
21.	IV	Skill based Subject I	Paper-1	3	2	Web Technology	25	75	100
22.	IV	Non-Major Elective	Paper-1	2	2	Introduction to Information Technology	25	75	100
Sem. Total				30	22		175	525	700
SEMESTER IV							CIA	Uni. Exam	Total
23.	III	Core Theory	Paper-6	5	4	Relational Database Management Systems	25	75	100
24.	III	Core Theory	Paper-7	4	4	Enterprise Resource Planning	25	75	100
25.	III	Core Theory	Paper-8	5	4	Wireless Data Communications	25	75	100
26.	III	Core Practical	Practical-4	4	3	RDBMS Lab	25	75	100
27.	III	ALLIED-2	Paper-4	7	5	Financial Accounting-II	25	75	100
28.	IV	Skill based Subject -II	Paper-2	3	2	Internet Of Things	25	75	100
29.	IV	Non-Major Elective	Paper-2	2	2	Internet Technology	25	75	100
Sem. Total				30	24		175	525	700
SEMESTER V							CIA	Uni. Exam	Total
30.	III	Core Theory	Paper-9	6	4	Mobile Application Development	25	75	100
31.	III	Core Theory	Paper-10	6	4	Operating System	25	75	100
32.	III	Core Theory	Paper –11	4	2	Design and Analysis of Algorithms	25	75	100
33.	III	Core Practical	Practical-5	4	3	Mobile Applications Development-Lab	25	75	100
34.	III	Core Practical	Practical-6	4	3	Operating System-Lab	25	75	100
35.	III	Internal Elective I	Paper-1	3	3	(Choose any one) A. Data Mining B. Information Security C. Software Testing	25	75	100
36.	IV	Skill Based Subject III	Paper–3	3	2	Software Engineering	25	75	100

NON-MAJOR ELECTIVE

PAPER-1

Introduction to Information Technology

OBJECTIVES:

The subject aims to build the concepts regarding:

- Major components of Computer System and its working principles.
- Role of an Operating System and basic terminologies of networks.
- How the Information Technology aids for the Current Scenario.
- To understand the Computer Software.
- To understand internet applications

UNIT-I

Introduction: Characteristics of Computers-Technological Evolution of Computers-The Computer Generations-Categories of Computer. **Data and Information:** Introduction-Types of Data-A Simple Model of a Computer-Data Processing Using a Computer-Desktop Computer. **Acquisition of Number and Textual Data:** Introduction- Input Units-Internal Representation of Numeric Data-Representation of Characters in Computers-Error-Detecting Codes.

UNIT-II

Data Storage: Introduction-Memory Cell-Physical Devices Used as Memory Cells-Random Access Memory-Read Only Memory- Secondary Memory- Floppy Disk Drive-Compact Disk Read Only Memory (CDROM)-Archival Memory. **Central Processing Unit:** The Structure of a Central Processing Unit-Specification of a CPU-Interconnection of CPU with Memory and I/O Units.

UNIT-III

Computer Networks: Introduction-Local Area Network (LAN)- Applications of LAN-Wide Area Network (WAN)-The Future of Internet Technology. **Output Devices:** Introduction- Video Display Devices-Flat Panel Displays-Printers.

UNIT-IV

Computer Software: Introduction-Operating System-Programming Languages-A Classification of Programming Languages. **Data Organization:** Introduction-Organizing a Database-Structure of a Database- Database Management System-Example of Database Design.

UNIT-V

Some Internet Applications: Introduction- E-mail- Information Browsing Service- The World Wide Web- Information Retrieval from the World WideWeb-Other Facilities Provided by Browsers - Audio on the Internet.**Societal Impactsof Information Technology:** CareersinInformation Technology.

TEXTBOOKS:

1. *Rajaraman, V.* 2008. **Introduction to Information Technology.** [Sixth Printing].

PrenticeHall of India Pvt. Limited, New Delhi.(UNIT I toV)

2. *Nagpal, D.P.* 2010. **Computer Fundamentals**. [First Edition, Revised]. S. Chand & Company Ltd, New Delhi. (**UNIT I (Introduction: Characteristics of Computers to Categories of Computer)**)

REFERENCE BOOKS:

1. *ITL Educations Solution Limited.* 2009. **Introduction to Computer Science**. [Fourth Impression]. Pearson Education, New Delhi.
2. *Alexis Leon and Mathews Leon.* 1999. **Fundamentals of Information Technology**. [First Edition]. Leon TECHWorld, New Delhi.

COURSE OUT COMES :

- Students understand Major components of Computer System and its working principles.
- Students learn and understand the Role of an Operating System and basic terminologies of networks.
- Students understand how the Information Technology aids for the Current Scenario.
- Students understand the Computer Software.
- Students understand internet applications

NON-MAJOR ELECTIVE

PAPER-2

INTERNET TECHNOLOGY

OBJECTIVS

The subject aims to build the concepts regarding:

- Fundamentals of Internet, Connectivity and its Resource Requirements.
- To understand the Internet Technology and its applications
- To Understand WWW and Web Browsers.
- Mailing system and applications of Internet.
- To Understand relay chat

UNIT-I

Introduction to internet: What is Internet? Evolution and History of Internet- Growth of Internet-Owners of Internet- Internet Services- How does the Internet Works?-Anatomy of Internet-Internet Addressing-Internet vs Intranet-Impact of Internet- Governance of Internet.

UNIT-II

Internet Technology and Protocol: ISO-OSI Reference Model-**Internet Connectivity:** Getting Connected- Different Types of Connections- Levels of Internet Connectivity- Internet Service Provider. **Internet Tools and Multimedia:** Current Trends on Internet-Multimedia and Animation.

UNIT-III

WWW and Web Browser: WWW-Evolution of Web-Basic Elements of WWW-Web Browsers- Search Engines- Search Criteria. **Web Publishing:** Web Publishing- Web Page Design.

UNIT-IV

Email: E-Mail Basics- E-Mail System-E-Mail Protocol-E-Mail Addresses-Structure of an E-Mail Message-E-Mail Clients&Servers-MailingList-E-MailSecurity.

UNIT-V

Usenet and Internet Relay Chat: What is Usenet?-Newsgroup Hierarchies-What is a Newsreader?- How do you Read Newsgroups?- Who Administers Usenet?- Common News reading Tasks- How to Read Articles from Network News?- Relationship between Netnews and E-Mail-What is IRC?-Channels-Nicknames- Microsoft NetMeeting. **Internet and Web Security:** Overview of Internet Security- Aspects and Need of Security-E-Mail Threats and Secure E-mail-Web Security and Privacy Concepts-Firewall.

TEXTBOOK:

1. *ISRD Group*. 2012. **Internet Technology and Web Design**. [Fourth reprint]. Tata

McGraw-Hill Education Private Limited., New Delhi.

REFERENCE BOOKS:

1. *Deitel, H.M. Dietel, P.J. and Goldberg A.B. 2008. Internet & Worldwide Web- How to Program.* [Third Edition]. PHL, New Delhi.
2. *Comdex. 2000. Teach yourself computers and the internet visually.* [First Edition]. IDG Book India (p) Ltd.
3. *Ramachandran, T.M. Nambissan. 2003. An Overview of internet and web development.* [First Edition]. T M-Dhruv Publications.

COURSE OUT COMES :

- Students understand the Fundamentals of Internet, Connectivity and its Resource Requirements.
- Students understand the Internet Technology and its applications
- Students Understand the basis of WWW and Web Browsers.
- Students learn how to Mailing system and applications of Internet.
- Students Understand relay chat that is how to read e- contents.

S.NO.	Part	Study Components		Ins. hrs /week	Credit	Title of the Paper	Maximum Marks		
		Course Title					CIA	Uni. Exam	Total
SEMESTER III									
16.	I	Language	Paper-3	6	4	Tamil/ OtherLanguages	25	75	100
17.	II	English	Paper-3	6	4	English	25	75	100
18.	III	Core Theory	Paper-3	3	3	Programming in JAVA	25	75	100
19.	III	Core Practical	Practical-3	3	3	Programming in JAVA Lab	25	75	100
20.	III	Allied II	Paper-3	4	3	(Choose any one) 1. Physics I 2. Statistical Methods and Their Applications I	25	75	100
	III	Allied II	Practical	3	0	Physics/Statistics Practical	0	0	0
21.	IV	Skill Based Subject	Paper-1	3	2	Digital Logic Design and Computer Organization	25	75	100
22.	IV	Non-Major Elective	Paper-1	2	2	Introduction to Information Technology	25	75	100
		Sem. Total		30	21		175	525	700
SEMESTER IV									
23.	I	Language	Paper-4	6	4	Tamil/Other Languages	25	75	100
24.	II	English	Paper-4	6	4	English	25	75	100
25.	III	Core Theory	Paper-4	3	3	Relational Database Management Systems	25	75	100
26.	III	Core Practical	Practical-4	3	3	RDBMS Lab	25	75	100
27.	III	Allied II	Paper-4	4	3	(to choose any one) 1. Physics II 2. Statistical Methods and their Applications II	25	75	100
28.	III	Allied II	Practical	3	2	Physics/Statistics Practical	25	75	100
29.	IV	Skill Based Subject	Paper-2	3	2	Wireless Data Communication	25	75	100
30.	IV	Non-Major Elective	Paper-2	2	2	Internet Technology	25	75	100
		Sem. Total		30	23		200	600	800

NON-MAJOR ELECTIVE

PAPER-1

Introduction to Information Technology

OBJECTIVES:

The subject aims to build the concepts regarding:

- Major components of Computer System and its working principles.
- Role of an Operating System and basic terminologies of networks.
- How the Information Technology aids for the Current Scenario.
- To understand the Computer Software.
- To understand internet applications

UNIT-I

Introduction: Characteristics of Computers-Technological Evolution of Computers-The Computer Generations-Categories of Computer. **Data and Information:** Introduction-Types of Data-A Simple Model of a Computer-Data Processing Using a Computer-Desktop Computer. **Acquisition of Number and Textual Data:** Introduction- Input Units-Internal Representation of Numeric Data-Representation of Characters in Computers–Error-Detecting Codes.

UNIT-II

Data Storage: Introduction-Memory Cell-Physical Devices Used as Memory Cells-Random Access Memory-Read Only Memory- Secondary Memory- Floppy Disk Drive- Compact Disk Read Only Memory (CDROM)-Archival Memory. **Central Processing Unit:** The Structure of a Central Processing Unit-Specification of a CPU-Interconnection of CPU with Memory and I/O Units.

UNIT-III

Computer Networks: Introduction-Local Area Network (LAN)- Applications of LAN-Wide Area Network (WAN)–The Future of Internet Technology. **Output Devices:** Introduction- Video Display Devices-Flat Panel Displays–Printers.

UNIT-IV

Computer Software: Introduction-Operating System-Programming Languages–A Classification of Programming Languages. **Data Organization:** Introduction-Organizing a Database-Structure of a Database- Database Management System-Example of Database Design.

UNIT-V

Some Internet Applications: Introduction- E-mail- Information Browsing Service- The World Wide Web- Information Retrieval from the World WideWeb-Other Facilities Provided by Browsers - Audio on the Internet.**Societal Impactsof Information Technology:** CareersinInformation Technology.

TEXTBOOKS:

1. *Rajaraman, V.* 2008. **Introduction to Information Technology.** [Sixth Printing]. Prentice Hall of India Pvt. Limited, New Delhi. (UNIT I to V)

2. Nagpal, D.P. 2010. **Computer Fundamentals**. [First Edition, Revised]. S. Chand & Company Ltd, New Delhi. (UNIT I (Introduction: Characteristics of Computers to Categories of Computer))

REFERENCE BOOKS:

1. ITL Education Solution Limited. 2009. **Introduction to Computer Science**. [Fourth Impression]. Pearson Education, New Delhi.
2. Alexis Leon and Mathews Leon. 1999. **Fundamentals of Information Technology**. [First Edition]. Leon TECHWorld, New Delhi.

COURSE OUT COMES :

- Students understand Major components of Computer System and its working principles.
- Students learn and understand the Role of an Operating System and basic terminologies of networks.
- Students understand how the Information Technology aids for the Current Scenario.
- Students understand the Computer Software.
- Students understand internet applications

NON-MAJOR ELECTIVE
PAPER-2
INTERNET TECHNOLOGY

OBJECTIVS

The subject aims to build the concepts regarding:

- Fundamentals of Internet, Connectivity and its Resource Requirements.
- To understand the Internet Technology and its applications
- To Understand WWW and Web Browsers.
- Mailing system and applications of Internet.
- To Understand relay chat

UNIT-I

Introduction to internet: What is Internet? Evolution and History of Internet- Growth of Internet-Owners of Internet- Internet Services- How does the Internet Works?-Anatomy of Internet-Internet Addressing-Internet vs Intranet-Impact of Internet- Governance of Internet.

UNIT-II

Internet Technology and Protocol: ISO-OSI Reference Model-**Internet Connectivity:** Getting Connected- Different Types of Connections- Levels of Internet Connectivity- Internet Service Provider. **Internet Tools and Multimedia:** Current Trends on Internet- Multimedia and Animation.

UNIT-III

WWW and Web Browser: WWW-Evolution of Web-Basic Elements of WWW-Web Browsers- Search Engines- Search Criteria. **Web Publishing:** Web Publishing- Web Page Design.

UNIT-IV

Email: E-Mail Basics- E-Mail System-E-Mail Protocol-E-Mail Addresses-Structure of an E-Mail Message-E-Mail Clients&Servers-MailingList-E-MailSecurity.

UNIT-V

Usenet and Internet Relay Chat: What is Usenet?-Newsgroup Hierarchies-What is a Newsreader?- How do you Read Newsgroups?- Who Administers Usenet?- Common News reading Tasks- How to Read Articles from Network News?- Relationship between Netnews and E-Mail-What is IRC?-Channels-Nicknames- Microsoft NetMeeting. **Internet and Web Security:** Overview of Internet Security- Aspects and Need of Security-E-Mail Threats and Secure E-mail-Web Security and Privacy Concepts-Firewall.

TEXTBOOK:

1. *ISRD Group*. 2012. **Internet Technology and Web Design**. [Fourth reprint]. Tata

McGraw-Hill Education Private Limited., New Delhi.

REFERENCE BOOKS:

1. *Deitel, H.M. Deitel, P.J. and Goldberg A.B. 2008. Internet & Worldwide Web- How to Program.* [Third Edition]. PHL, New Delhi.
2. *Comdex. 2000. Teach yourself computers and the internet visually.* [First Edition]. IDG Book India (p) Ltd.
3. *Ramachandran, T.M. Nambissan. 2003. An Overview of internet and web development.* [First Edition]. T M-Dhruv Publications.

COURSE OUT COMES :

- Students understand the Fundamentals of Internet, Connectivity and its Resource Requirements.
- Students understand the Internet Technology and its applications
- Students Understand the basis of WWW and Web Browsers.
- Students learn how to Mailing system and applications of Internet.
- Students Understand relay chat that is how to read e- contents.

		Course Title	hrs /week			CIA	Uni. Exam	Total	
SEMESTER III						CIA	Uni. Exam	Total	
16.	III	Core Theory	Paper-5	6	5	Corporate Accounting I	25	75	100
17.	III	Core Theory	Paper-6	5	4	Legal Aspects of Business	25	75	100
18.	III	Core Theory	Paper-7	4	3	Business Correspondence	25	75	100
19.	III	Core Theory	Paper-8	4	3	Business Statistics and Operation Research	25	75	100
20.	III	ALLIED-2	Paper-3	6	3	Business Economics I	25	75	100
21.	IV	Skill based Subject	Paper-1	3	2	Computer Applications in Business	25	75	100
22.	IV	Non-major elective	Paper-1	2	2	General commercial Knowledge	25	75	100
				30	22		175	525	700
SEMESTER IV						CIA	Uni. Exam	Total	
23.	III	Core Theory	Paper-9	5	4	Corporate Accounting II	25	75	100
24.	III	Core Theory	Paper-10	5	4	Business Management	25	75	100
25.	III	Core Theory	Paper-11	5	3	Company Law	25	75	100
26.	III	Core Theory	Paper-12	4	3	Modern banking	25	75	100
27.	III	ALLIED-2	Paper-4	6	5	Business Economics II	25	75	100
28.	IV	Skill based Subject	Paper-2	3	2	e- Commerce	25	75	100
29.	IV	Non-major elective	Paper-2	2	2	Advertisement and Salesmanship	25	75	100
				30	23		175	525	700
SEMESTER V						CIA	Uni. Exam	Total	
	III	Core Theory	Paper-13	6	4	Cost accounting I	25	75	100
	III	Core Theory	Paper-14	5	4	Practical Auditing	25	75	100
	III	Core Theory	Paper-15	6	5	Management Accounting	25	75	100
	III	Core Theory	Paper-16	6	4	Income Tax Law and Practice I	25	75	100
	III	Elective	Paper-1	4	3	(to choose 1 out of 3) 1. Entrepreneurial Development 2. Business Environment 3. Management Information System	25	75	100
	IV	Skill based Subject	Paper-3	3	2	Principles of marketing	25	75	100
				30	22		150	450	600
SEMESTER VI						CIA	Uni. Exam	Total	
34	III	Core	Paper-17	5	4	Cost accounting II	25	75	100

Course Objective

1. To enable the students of gain basic knowledge of Trade, Commerce and Industry.

UNIT - I

Business - Commerce - Industry- Trade - Profession - Meaning- Scope - Importance- Kinds- Economic Basis of Commerce.

UNIT - II

Forms of Business organization - Sole Trade- Partnership Firm- Features- Merits- Demerits - Co-Operative Societies - Features- Types- Advantages.

UNIT - III

Joint stock Company- Features- Memorandum and Articles- Contents- Prospectus.

UNIT - IV

Stock Exchange - Function - Types - Regulation of Stock Exchanges in India.

UNIT-V

Trade association - Chamber of commerce - Functions - Objectives - Working in India.

Note: Questions in Sec. A, B & C - 100 % Theory.

Text Books:

S.no	Authors	Title	Publishers
1	Ghosh and Bhushan	General Commercial Knowledge	Sultan Chand & Sons, New Delhi.
2.	R.N. Gupta	Business organization & Management	S. Chand & Co. New Delhi.

Reference Books:

S.No	Authors	Title	Publishers
1.	P.N.Reddy&S.S.Gulshan	Commerce - Principles & Practice	S. Chand & Co. New

Delhi.

2. C.D.Balaji&Dr.G.Prasad Business organization Margham Publications,
Chennai.

Reference journals:

1. Arabian Journal of Business and Management Review,
2. International Public Management Journal,
3. International Small Business Journal,
4. Journal of Business and Psychology,
5. journal of International Management,

E-Materials:

1. E-book Business organization by H. E Morgan
2. Business Organisation - sbpd publication

Course Out Comes

Units	CO Statement
Unit - I After studied unit-1, the student will be able to	To gain knowledge about Commerce, Trade, Industry.
Unit - II After studied unit-2, the student will be able to	To learn about Forms of Business organization.
Unit - III After studied unit-3, the student will be able to	To acquire knowledge about Company.
Unit - IV After studied unit-4, the student will be able to	To know about Stock Exchange
Unit - V After studied unit-5, the student will be able to	To impart effective knowledge about Trade association and Chamber of commerce

SEMESTER IV

CORE PAPER - 9

CORPORATE ACCOUNTING -II

ADVERTISING AND SALESMANSHIP

Course Objectives

1. To understand the concept of advertising
2. To enable the students to have practical knowledge about advertising agencies
3. To familiarize about recent trends in advertising
4. To have knowledge on fundamental concept of salesmanship
5. To understand the duties and responsibilities of salesmanship

UNIT-I

Definition of Advertising- Origin and Development of Advertising -Objectives -Nature- Scope of Advertising- -Functions -Types -Benefits.

UNIT-II

Advertisement copy - Advertising media- Advertising Agencies.

UNIT-III

Recent trends in advertising - Economic aspects of Advertising- Social and Ethical aspects of Advertising.

UNIT-IV

Definition of Salesmanship -Features -Objectives- Recruitment of a salesman- Qualities of Good Salesman

UNIT-V

Advantages of Salesmanship- Distinction between Salesmanship and Advertising- Types of Salesmanship- Functions, Duties and Responsibilities of a Salesmanship.

TextBooks:

S.NO	AUTHORS	TITLE	PUBLISHERS
1.	R.S.N. Pillai&Bagavathi	Modern Marketing (Principles and Practices)	S. Chand & Co. New Delhi
2.	S Rajkumar, V Rajagopalan	Sales and Advertisement Management	S. Chand & Company Pvt. Ltd.
3.	Sahu and Raut	Salesmanship and Sales Management	Vikas Publishing House, Chennai.
4.	CL Tyagi&Arun Kumar	Sales Management	Atlantic publishers.

Reference Books:

S.NO	AUTHORS	TITLE	PUBLISHERS
1.	Chunawalla K.C. Sethia	Advertising (Principles and Practices)	Chunawalla K.C. Sethiax

- | | | | |
|----|-------------------------------|--|--|
| 2. | Dr. M.M. Varma, R. K. Agarwal | Advertising Management | Forward 300K Depot, New Delhi. |
| 3. | Mahendra Mohan | Advertising Management | Tata Mcgraw-hill Publishing Company Limited, New Delhi, India. |
| 4. | G.R. Basotia N. K Sharama | Advertising Marketing and Sales Management | Mangal Deep Jaipur. |
| 5. | Dr. K. Sundar | Essentials of Marketing | Vijay Nicholes Imprint Pvt. Ltd., Chennai. |

E- MATERIALS

www.slideshare.net

www.himpub.com

www.ves.ac.in

Course Out Comes

Units	CO Statement	
Unit - I	After studied unit-1, the student will be able to	Impart knowledge on advertising
Unit - II	After studied unit-2, the student will be able to	Get familiarized about advertising agencies
Unit - III	After studied unit-3, the student will be able to	Get familiarized about recent trends in advertising
Unit - IV	After studied unit-4, the student will be able to	Acquired knowledge on fundamental concept of salesmanship
Unit - V	After studied unit-5, the student will be able to	Impart knowledge on duties & responsibilities of salesmanship

SEMESTER III							CIA	Uni. Exam	Total
16.	III	Core Theory	Paper-5	5	4	Production and Materials Management	25	75	100
17.	III	Core Theory	Paper-6	5	4	Financial Accounting	25	75	100
18.	III	Core Theory	Paper-7	5	4	Human Resource Management	25	75	100
19.	III	Core Theory	Paper-8	4	4	Managerial Economics	25	75	100
20.	III	ALLIED-2	Paper-3	6	3	(to choose any 1 out of 3) A. Office Management B. Service Marketing C. Tourism Management	25	75	100
21.	IV	Skill based Subject	Paper-1	3	2	Business Communication	25	75	100
22.	IV	Non-major elective	Paper-1	2	2	Management Concepts	25	75	100
				30	23		175	525	700
SEMESTER IV							CIA	Uni. Exam	Total
23.	III	Core Theory	Paper-9	5	4	Organizational Behavior	25	75	100
24.	III	Core Theory	Paper-10	5	4	Taxation	25	75	100
25.	III	Core Theory	Papr-11	5	4	Management Accounting	25	75	100
26.	III	Core Theory	Paper 12	4	4	Operations Research	25	75	100
27.	III	ALLIED-2	Paper-4	6	5	(to choose any 1 out of 3) A. Retail Management B. Project Management C. Hotel Management	25	75	100
28.	IV	Skill based Subject	Paper-2	3	2	Entrepreneurial Development	25	75	100
29.	IV	Non-major elective	Paper-2	2	2	Training and Development	25	75	100
				30	25		175	525	700
SEMESTER V							CIA	Uni. Exam	Total
30.	III	Core Theory	Paper-13	6	4	Marketing Management	25	75	100
31.	III	Core Theory	Paper-14	6	4	Business Law	25	75	100
32.	III	Core Theory	Paper-15	5	4	Research Methodology	25	75	100
33.	III	Core Theory	Paper-16	5	4	Computer Application in Business	25	75	100
34.	III	Elective	Paper-1	5	3	(To choose any 1 out of 3) A. Industrial Relations and Labour Laws B. Reward Management C. Change Management	25	75	100
35.	IV	Skill based Subject	Paper-3	3	2	E-Business	25	75	100
				30	21		150	450	600

NON-MAJOR ELECTIVE
PAPER - 1
MANAGEMENT CONCEPTS

Course Objectives

1. To understand the concepts related to Business.
2. To learn the roles, skills and functions of management.
3. To learn the application of the knowledge in solving organizational problems.
4. To develop optimal managerial skills in planning and in taking decisions.
5. To acquire in knowledge in Communication, Leadership, Controlling, Motivation and Delegation

UNIT - I

Management - meaning and Definition - Importance - nature - scope of management process - Role and Functions of a Manager - levels of management - Taylor's contribution - Fayol's contribution - Elton Mayo's contribution - Systems approach - Contingency approach-

UNIT - II

Planning - meaning and definition of planning - Nature of planning- Purpose of planning - Steps in planning process - Types of plans - Merits and Demerits of Planning - Objectives - nature of objectives - importance of objectives - functions of objectives - MBO - meaning and definition - nature of MBO - process of MBO - Advantages and disadvantages of MBO.

UNIT - III

Organising - meaning and definition of organizing - nature and Purpose of organizing - organizational structure - types of organisation structure - Line and Staff Organisation - Committee Organisation - Departmentation - Span of Control - meaning and definition of span of control - Delegation of Authority - difference between authority and power - types of authority - uses of authority - Centralisation and Decentralisation of Authority - elements of responsibility - differences between authority and responsibility.

UNIT - IV

Directing - nature of directing - purpose of directing - Leadership - nature of leadership - importance of leadership - functions of leadership - qualities of effective leaders - styles of leadership - Motivation - nature of motivation - importance of motivation - theories of motivation - Communication - Process of Communication - principles of effective communication - Barriers of Communication.

UNIT - V

Controlling - meaning and definition of controlling - nature of controlling - objectives of controlling - importance of controlling - Control process - technique of controlling - Co-ordination - Need of coordination - Principles of coordination - technique of coordination - requisites for excellent coordination - Approaches to achieve effective Co-ordination

TEXT BOOKS

Unit 1

1. Sundar - Principles of Management - Vijay Nicole Private Limited
2. Dr.C.D. Balaji -Principles of Management -Margham Publications
3. J.R. Beulah Bharathi, & C. Arunachalam, Principles of Management, Thakur Publications Pvt Ltd

Unit 2

1. Sundar - Principles of Management -Vijay Nicole Private Limited
2. Dr.C.D. Balaji -Principles of Management -Margham Publications
3. J.R. Beulah Bharathi, & C. Arunachalam, Principles of Management, Thakur Publications Pvt Ltd

Unit 3

1. Sundar - Principles of Management -Vijay Nicole Private Limited
2. Dr.C.D. Balaji -Principles of Management -Margham Publications
3. J.R. Beulah Bharathi, & C. Arunachalam , Principles of Management, Thakur Publications Pvt Ltd

Unit 4

1. Sundar - Principles of Management -Vijay Nicole Private Limited
2. Dr.C.D. Balaji -Principles of Management -Margham Publications
3. J.R. Beulah Bharathi, & C. Arunachalam , Principles of Management, Thakur Publications Pvt Ltd

Unit 5

1. Sundar - Principles of Management -Vijay Nicole Private Limited
2. Dr.C.D. Balaji -Principles of Management -Margham Publications
3. J.R. Beulah Bharathi, & C. Arunachalam , Principles of Management, Thakur Publications Pvt Ltd

Reference Items: Books and Journals

1. L.M. Prasad - Prinicples and Practice of Management - Margham Publication.
2. R.N. Gupta - Principles of Management - S.Chand & Co.

E-Materials

- www.managementstudyguide.com
- www.managementconcepts.com
- managementhelp.org
- [www.edx.org › learn › management](http://www.edx.org/learn/management)
- https://gurukpo.com/Content/MBA/Principles_and_Practices_of_Management.pdf
- https://www.tutorialspoint.com/management_principles/management_principles_tutorial.pdf

Course Outcome

1. After studied Unit 1, the student understand the concepts related to Business.
2. After studied Unit 2, the student learns the roles, skills and functions of management.
3. After studied Unit 3, the student analyze effective application of the knowledge to solve organizational problems.

NON-MAJOR ELECTIVE
PAPER - 2
TRAINING AND DEVELOPMENT

Course Objectives

1. To know the in-depth understanding of the role of training.
2. To know the methods of training.
3. To understand the concepts of career development .
4. To know the important concepts used in management development and process and MD programme.
5. To know the institutions offering training programmes in India.

UNIT - I

Concepts of Training and development - Identifying Training Needs - Structure and Functions of Training Department - Evaluation of Training Programme - Role, Responsibilities and Challenges to Training Managers

UNIT - II

Techniques of on the job training - Coaching - Apprenticeship - Job Rotation - Job Instruction Training - Training by Supervisors - Techniques of off the job Training, Lecturers, Conferences, Group Discussion.

UNIT - III

Concept of Career - Career Stages - Career Planning - Need - Importance - Steps in Career Planning - Career Development - Characteristics - Need - Methods of Career Planning and Development.

UNIT - IV

Management Development - Meaning - Definition - Need and importance of Management Development - Characteristics - Levels - Management Development Process and Components of MD Programme.

UNIT - V

Need for Training in India - Government Policy on Training - Training Institutes in India - Management Development Institute.

TEXT BOOKS

Unit-1

Thirumaran D, V.Santhosh - Training and Development, Thakur Publishers Chennai.

Unit-2

Thirumaran D, V.Santhosh - Training and Development, Thakur Publishers Chennai.

Unit-3

Thirumaran D, V.Santhosh - Training and Development, Thakur Publishers Chennai.

Unit-4

Thirumaran D, V.Santhosh - Training and Development, Thakur Publishers Chennai.

Unit-5

Thirumaran D, V.Santhosh - Training and Development, Thakur Publishers Chennai.

Reference Items: Books and Journal

1. Lalitha Balakrishnan& Gowri Ramachandran - Training & Development - Vijay Nicole Imprints Pvt. Ltd.
2. Rao PL: HRD through In-House Training, New Delhi, Vikas Publishing House (P) Ltd.,
3. Reid M.A.: Training Interventions: managing Employee Development London, IPM, 3 rd ed., 1992.
4. Aggarwala, D.V., Manpower Planning, Selection, Training and Development, New Delhi, Deep & Deep Publications (P) Ltd., 1999.

E- Materials

- <https://www.mbaskool.com/business-concepts/human-resources-hr-terms/8685-training-and-development.html>
- <https://businessjargons.com/training-and-development.html>
- <https://corporatefinanceinstitute.com/resources/careers/soft-skills/employee-training-and-development/>
- http://ebooks.lpude.in/management/mba/term_4/DMGT518_TRAINING_AND_DEVELOPMENT_SYSTEM.pdf
- <http://www.pondiuni.edu.in/sites/default/files/training-development-260214.pdf>
- <https://www2.le.ac.uk/projects/oer/oers/psychology/oers/Training%20and%20Development%20Introduction%20and%20Overview/Training%20and%20Development%20Introduction%20and%20Over>

Course Outcomes

1. After studied unit-1, the student will be able to learn the basic concepts of training, identify training needs and functions of training department.
2. After studied unit-2, the student will be able to know the various on-the-job and off the job techniques of training.
3. After studied unit-3, the student will be able to have a clear picture about their career planning and development.
4. After studied unit-4, the student will be able to understand the different techniques of management development programme.
5. After studied unit-5, the student will be able to know the information about the different management training institutes in India.

ANNAMALAI UNIVERSITY
MASTER OF SCIENCE
M.Sc. CHEMISTRY
DEGREE COURSE
UNDER CBCS
With effect from 2020-2021

The Course of Study and the Scheme of Examinations

S. No.	Study Components		Ins. Hrs/ week	Credit	Title of the Paper	Maximum Marks		
	Course Title					CIA	Uni. Exam	Total
SEMESTER I								
1.	Core Theory	Paper-1	4	4	Organic Chemistry- I	25	75	100
2.	Core Theory	Paper-2	4	3	Inorganic Chemistry- I	25	75	100
3.	Core Theory	Paper-3	4	3	Physical Chemistry- I	25	75	100
	Core Practical	Paper-1	4	0	Organic Chemistry Practical- I	-	-	-
	Core Practical	Paper-2	4	0	Inorganic Chemistry Practical- I	-	-	-
	Core Practical	Paper-3	4	0	Physical Chemistry Practical- I	-	-	-
Internal Elective for same major students								
4.	Core Elective	Paper-1	3	3	(to choose 1 out of 3) A. Advanced Polymer Chemistry B. Heterocyclic Chemistry C. Materials Chemistry	25	75	100
External Elective for other major students (Inter/multi disciplinary papers)								
5.	Open Elective	Paper-I	3	3	(to choose 1 out of 3) A. Chemistry in Agriculture B. Food Chemistry C. Industrial chemistry-I	25	75	100
			30	16		125	375	500
SEMESTER II								
6.	Core Theory	Paper-4	3	3	Organic Chemistry- II	25	75	100
7.	Core Theory	Paper-5	3	4	Inorganic Chemistry- II	25	75	100
8.	Core Theory	Paper-6	3	3	Physical Chemistry- II	25	75	100
9.	Core Practical	Paper-1	5	3	Organic Chemistry Practical- I	25	75	100
10.	Core Practical	Paper-2	5	3	Inorganic Chemistry Practical- I	25	75	100
11.	Core Practical	Paper-3	5	3	Physical Chemistry Practical- I	25	75	100
12.	Compulsory paper		2	2	Human Rights	25	75	100
Internal Elective for same major students								
13.	Core	Paper-2	2	3	(to choose 1 out of 3)	25	75	100

	Elective				A. Green Chemistry B. Supramolecular and Nanochemistry C. Modern Separation Techniques			
External Elective for other major students (Inter/multi disciplinary papers)								
14.	Open Elective	Paper-II	2	3	(to choose 1 out of 3) A. Medicinal Chemistry B. Textile chemistry C. Dairy Chemistry	25	75	100
15.	* Field Study		-	2		-	-	100
			30	29		225	675	1000
SEMESTER III						CIA	Uni. Exam	Total
16.	Core Theory	Paper-7	3	3	Organic Chemistry- III	25	75	100
17.	Core Theory	Paper-8	4	4	Inorganic Chemistry- III	25	75	100
18.	Core Theory	Paper-9	4	4	Physical Chemistry- III	25	75	100
	Core Practical	Paper-4	5	0	Organic Chemistry Practical- II	-	-	-
	Core Practical	Paper-5	5	0	Inorganic Chemistry Practical- II	-	-	-
	Core Practical	Paper-6	5	0	Physical Chemistry Practical- II	-	-	-
Internal Elective for same major students								
19.	Core Elective	Paper-3	2	3	(to choose 1 out of 3) A. Scientific Research Methodology B. Advanced Bioinorganic Chemistry C. Advanced analytical techniques	25	75	100
External Elective for other major students (Inter/multi disciplinary papers)								
20.	Open Elective	Paper-3	2	3	(to choose 1 out of 3) A. Industrial Chemistry-II B. Science of Photography C. Energy Resources	25	75	100
21.	** MOOC Courses		-	-		0	0	100
			30	17		125	375	600
SEMESTER IV						CIA	Uni. Exam	Total
22.	Core Theory	Pape-10	4	4	Organic Chemistry- IV	25	75	100
23.	Core Theory	Paper-11	4	4	Physical Chemistry- IV	25	75	100
24.	Core Practical	Paper-4	5	3	Organic Chemistry Practical- II	25	75	100
25.	Core Practical	Paper-5	5	3	Inorganic Chemistry Practical- II	25	75	100
26.	Core Practical	Paper-6	5	3	Physical Chemistry Practical- II	25	75	100
27.	Core	Project	5	5	Project with viva voce (Compulsory)	100 (75 Project)		100

						+25 viva)		
Internal Elective for same major students								
28.	Core Elective	Paper-4	2	3	(to choose 1 out of 3) A. Inorganic Chemistry-IV B. Environmental Chemistry C. Medicinal Chemistry and Drug Design	25	75	100
External Elective for other major students (Inter/multi disciplinary papers)								
29.	Open Elective	Paper-4	2	3	(to choose 1 out of 3) A. Polymer and plastics B. Basics of Forensic science C. Health Science	25	75	100
				28		175	525	800
				90				2900

* Field Study

There will be field study which is compulsory in the first semester of all PG courses with 2 credits. This field study should be related to the subject concerned with social impact. Field and Topic should be registered by the students in the first semester of their study along with the name of a mentor before the end of the month of August. The report with problem identification and proposed solution should be written in not less than 25 pages in a standard format and it should be submitted at the end of second semester. The period for undergoing the field study is 30 hours beyond the instructional hours of the respective programme. Students shall consult their mentors within campus and experts outside the campus for selecting the field and topic of the field study. The following members may be nominated for confirming the topic and evaluating the field study report.

- (i). Head of the respective department
- (ii). Mentor
- (iii). One faculty from other department

**Mooc Courses

Inclusion of the Massive Open Online Courses (MOOCs) with zero credits available on SWAYAM, NPTEL and other such portals approved by the University Authorities.

PAPER-I
(To choose 1 out of 3)

B. FOOD CHEMISTRY

OBJECTIVE:

- *To understand the different sources of food*
- *To learn the concept of food poisoning.*
- *To understand the techniques of food preservation.*
- *To study the importance of vitamins and uses.*
- *To appreciate the different minerals needed for day to day life*

OUTCOMES:

The student will be able to

- *Appreciate the importance of various foods.*
- *Acquire knowledge of remedies for various ailments.*
- *Identify the causes for food spoilage.*
- *Reason out the deficiency of vitamins.*
- *Illustrate the importance of minerals.*

UNIT-I FOOD ADULTERATION Sources of foods, types, advantages and disadvantages, constituents of foods, carbohydrate, protein, fats and, oils, colours, flavours, natural toxicants.

UNIT-II FOOD POISONING Sources, causes and remedy- Causes and remedies for acidity, gastritis, indigestion and constipation

UNIT-III FOOD PRESERVATION AND PROCESSING Food spoilage , courses of food spoilage, types of Food spoilage, food preservation ,preservation and processing by heating-sterilisation, pasteurization.

UNIT-IV VITAMINS Sources , requirement deficiency diseases of A, C, K, E1 and B6

UNIT-V MINERALS Mineral elements in food-Principal mineral elements-source. Function-Deficiency and daily requirements-Na, K, Mg, Fe, S and P

- REFERENCE BOOKS:** 1. Seema Yadav : —Food Chemistry, Anmol publishing (P) Ltd, New Delhi
2. Car H. Synder : — The Extraordinary Chemistry for ordinary things, John Wiley & sons inc., New York, 1992.
3. Sivasankar – Food Processing and Preservation PHI. (Eastern Economy Editions)

PAPER-I
(To choose 1 out of 3)
C. INDUSTRIAL CHEMISTRY-I

OBJECTIVES:

To make the students learn about fertilizers
To understand the importance of sugar industries
To learn the importance of Chemical explosives
To study about the leather industries
To understand the importance of water industry

OUTCOMES:

The students will be able to
Acquire knowledge of fertilizers
Appreciate the importance of sugar industries in India
Acquire knowledge of Chemical explosives
Illustrate the importance of leather industries
Identify the importance of water industry

UNIT I Fertilizers : Fertilizer industries in India, Manufacture of ammonia, ammonium salts, urea, superphosphate, triple superphosphate and nitrate salts.

UNIT II Sugar : Cane sugar manufacture, recovery of sugar from molasses, sugar estimation- sugar industries in India.

UNIT III Chemical Explosives : Preparation and chemistry of lead azide, nitroglycerine, nitrocellulose, TNT, RDX, Dynamite, cordite, picric acid, gunpowder, introduction to rocket propellants.

UNIT IV Leather Industry : Curing, preservation and tanning of hides and skins, process of dehairing and dyeing. Treatment of tannery effluents.

UNIT V Water Industry: Pollution of water by fertilizers, detergents, pesticides and industrial wastes, BOD, COD, thermal pollution. Water Treatment – Ion exchange, electro dialysis, reverse osmosis, softening of hard water. 121

Reference : 1. B.N. Chakrabarty, Industrial Chemistry, Oxford & IBH Publishing Co, New Delhi, 1981.

**OPEN ELECTIVE (NON MAJOR)
PAPER-II
(To choose 1 out of 3)**

A. MEDICINAL CHEMISTRY

OBJECTIVES:

To make the students learn the concept of medicinal chemistry

To understand the various sources and classification of drugs

To learn the importance of Chemotherapy

To study about the common body ailments

To understand about health promoting drugs

OUTCOMES:

The students will be able to

Appreciate the importance of medicinal chemistry

Acquire knowledge of classification of drugs

Identify the importance of Chemotherapy

Acquire knowledge of common body ailments

Illustrate the importance of health promoting drugs

UNIT I-INTRODUCTION Common diseases – infective diseases – insect – borne, air – borne and water-borne – hereditary diseases – Terminology – drug, pharmacology, antimetabolites, absorption of drugs – factors affecting absorption – therapeutic index (Basic concepts only)

UNIT II-DRUGS Various sources of drugs, pharmacologically active constituents in plants, Indian medicinal plants – tulsi, neem, keezhanelli – their importance – Classification of drugs – biological chemical (Structure not required) Drug receptors and biological responses – factors affecting metabolism of drugs. (Basic concepts only)

UNIT III-CHEMOTHERAPY Drugs based on physiological action, definition and two examples each of anesthetics- General and local – analgesics – narcotic and synthetic – Antipyretics and anti inflammatory agents – antibiotics – Penicillin, Streptomycin, Antivirals, AIDS – symptoms, prevention, treatment – Cancer (Structure not required)

UNIT IV-COMMON BODY AILMENTS

Diabetes – Causes, hyper and hypoglycemic drugs – Blood pressure – Systolic & Diastolic Hypertensive drugs – Cardiovascular drugs – depressants and stimulants – Lipid profile – HDL, LDL cholesterol lipid lowering drugs. (Structure not required)

UNIT V-HEALTH PROMOTING DRUGS Vitamins A, B, C, D, E and K micronutrients – Na, K, Ca, Cu, Zn and I, Medicinally important inorganic compounds of Al, P, As, Hg and Fe, Examples and applications, Agents for kidney function (Aminohippuric acid). Agents for liver function (Sulfo bromophthalein), antioxidants, treatment of ulcer and skin diseases. (Structure not required)

RECOMMENDED TEXT BOOKS:

1. S.Lakshmi Pharmaceutical Chemistry, S.Chand & Sons, New Delhi, 2004
2. V.K. Ahluwalia and Madhu Chopra, —Medicinal Chemistry, Ane Books, New Delhi, 2008
3. P.Parimoo, — A Text Book of Medicinal Chemistry, CBS publishers, New Delhi, 2006

RECOMMENDED REFERENCE BOOKS

1. Ashutosh Kar, —Medicinal Chemistry, Wiley Eastern Ltd., New Delhi, 1993,
2. David William and Thomas Lemke, Foyes Principles of Medicinal Chemistry, BI Publishers.
3. Romas Nogrady, Medicinal Chemistry, Oxford Univ. Press 129

PAPER-II **(To choose 1 out of 3)**

B.TEXTILE CHEMISTRY

OBJECTIVES:

To make the students learn the concept of textile chemistry

To understand about synthetic fibres

To learn the importance of raw cotton

To study about the dyeing process

To understand about finishes given to fabrics

OUTCOMES:

Appreciate the importance of textile chemistry

Acquire knowledge of synthetic fibres

Identify the importance of raw cotton

Acquire knowledge of dyeing

Illustrate the importance of finishes given to fabrics

UNIT I : 1. General classification of fibres-chemical structure, production, properties and uses of the following natural fibres (a)natural cellulose fibres (cotton and jute) (b) natural protein fibre (wool and silk).

UNIT II : Chemical structure, production, properties and uses of the following synthetic fibres. (i) Man made cellulosic fibres (Rayon, modified cellulose fibres) (ii) Polyamide fibres (different types of nylons) (iii) Poly ester fibres.

UNIT III : Impurities in raw cotton and grey cloth, wool and silk- general principles of the removal – Scouring – bleaching – Desizing – Kierboiling- Chemicking.

UNIT IV : Dyeing - Dyeing of wool and silk –Fastness properties of dyed materials – dyeing of nylon, terylene and other synthetic fibres.

OPEN ELECTIVE PAPER-3

C.ENERGY RESOURCES

OBJECTIVES:

To make the students to understand about energy resources

To understand the importance of solar energy

To learn the importance of energy from the ocean

To study about the wind energy and hydrogen energy

To understand the importance of energy management

OUTCOMES:

The students will be able to

Identify the importance of energy resources

Appreciate the importance of solar energy

Analyze the importance of energy from the ocean

Acquire knowledge of wind energy and hydrogen energy

Identify the importance of energy management

UNIT I: INTRODUCTION TO ENERGY SOURCES

Renewable and non-renewable energy sources, energy consumption as a measure of Nation's development - strategy for meeting the future energy requirements Global and National scenarios-Prospects of renewable energy sources.

UNIT II: SOLAR ENERGY

Solar radiation - beam and diffuse radiation, solar constant, earth sun angles- attenuation and measurement of solar radiation-solar cooker, solar heating and cooling of buildings- photo voltaics - solar cells and its applications.

UNIT III: ENERGY FROM THE OCEAN

Ocean Thermal Electric Conversion (OTEC) systems like open cycle-closed cycle- Hybrid cycle- prospects of OTEC in India. Energy from tides- basic principle of tidal power- single basin and double basin tidal power plants- advantages- limitation and scope of tidal energy.

UNIT IV: WIND ENERGY AND HYDROGEN ENERGY

Principle of wind energy conversion-Basic components of wind energy conversion systems-wind mill components-various types and their constructional features Hydrogen Energy-Introduction-Hydrogen Production methods-Hydrogen storage-hydrogen transportation-utilization of hydrogen gas-hydrogen as alternative fuel for vehicles.

UNIT V: ENERGY MANAGEMENT

Energy economics-energy conservation-energy audit-general concept of total energy system-scope of alternative energy system in India.

TEXTBOOKS

1. Rai. G.D., Non-conventional energy sources, 4th Edition, Khanna Publishers, 2009.
2. Garg H.P. & Jai, Solar Energy: Fundamentals and Applications by Prakash, Tata McGraw Hill, 1977.
3. Singhal B.L., Alternative Energy Sources, 2nd Edition Tech Max Publication, 2007.

REFERENCES

1. Duffic.J.A and Beckman W.A ,Solar Engineering of Thermal Processes , 3rd Edition ,John Wiley & sons, New York, 1975.
2. Giri.N.K, Alternate energy sources and application, 2nd Edition, Khanna Publication, 2004.
3. Sukhatme S,P, Solar Energy: Principles of Thermal Collection and Storage, 3rd Edition ,Tata McGraw Hill, 2008.

**OPEN ELECTIVE
PAPER-4
(To choose 1 out of 3)**

A.POLYMER AND PLASTICS

OBJECTIVES:

- *To make the students learn the concept of polymers and plastics.*
- *To understand the classification of polymers.*
- *To understand the methods of molecular weight determination.*
- *To learn the importance of freons and rubber.*
- *To appreciate the applications of plastics*

OUTCOMES:

The student will be able to

- *Classify the different types of polymers.*
- *Illustrate the importance of stereochemistry of polymers*
- *Apply the methods for determination of molecular weight*
- *Acquire knowledge on the various types of rubber*
- *Differentiate thermoplastic and thermosetting plastic*

UNIT-I 1.1. Basic concepts : An introduction to polymers and macro molecules. Natural and synthetic polymers. Classification of Polymers-addition and condensation polymers. 1.2. General methods of preparation of polymers. Polymerization through functional groups, multiple bonds and ring opening. Coordination polymerization.

UNIT-II 2.1. Structure of polymers- linear, branched and cross linked Stereochemistry of polymers-Isotactic, Sydiotactic and Atactic. 2.2. properties of polymers : The crystalline melting point. The glassy state and glass transition temperature.

UNIT-III 3.1. Copolymerisation – Definitions – homo and copolymers. Block copolymers and Graft copolymers. 3.2. Molecular weight of polymers. Number average molecular weight and weight average molecular weight. Determination of molecular weight by Viscosity and Osmometry methods.

UNIT-IV 4.1. Poly olefins-polythene, PTFE, Freons, PVC, polypropylene and polystyrene. 4.2. Natural and synthetic rubbers.-Constitution of natural rubber. Butyl, Buna, Buna-S, Buna-N, Neoprene, SBR, Thiocol, Polyurethane and silicone rubbers. 138

UNIT-V 5.1. Plastics and Resins Definitions. Thermoplastic and thermosetting resins. Constituents of plastic-fillers, dyes, pigments, plasticizers, Lubricants and catalysts. Uses of thermoplastic resins and thermo setting resins.

REFERENCES: 1. V. R. Gowrikar ,N.V.Viswanathan : Polymer Science- Wiley Eastern Limited ,New Delhi. 1986
2. R.B.Seymour, Introduction to Polymer Chemistry, MC Craw Hill, New York 1971.
3. S.S.Dara , A Text Book in Engineering Chemistry, S.Chand & Company Ltd, New Delhi. Third Edition ,1992.

**ANNAMALAI UNIVERSITY****302. M.A. English**

Programme Structure and Scheme of Examination (under CBCS)
 (Applicable to the candidates admitted in Affiliated Colleges
 in the academic year 2022 -2023 ONLY)

Course Code	Study Components & Course Title	Hours/Week	Credit	Maximum Marks		
				CIA	ESE	Total
Semester I						
22PENG11	Core Course – I: Chaucer and Elizabethan Age	6	4	25	75	100
22PENG12	Core Course – II: Jacobean and Restoration Age	6	4	25	75	100
22PENG13	Core Course – III: Shakespeare	5	4	25	75	100
22PENG14	Core Course – IV: Phonetics and History of English Language	5	4	25	75	100
22PENG15	Core Elective – I	5	4	25	75	100
	Open Elective – I	3	3	25	75	100
	Total	30	23			600
Semester II						
22PENG21	Core Course -V: The Romantic Age	6	4	25	75	100
22PENG22	Core Course – VI: The Victorian Age	6	4	25	75	100
22PENG23	Core Course – VII: Eco Literature	6	4	25	75	100
22PENG24	Core Course – VIII: Fantasy and Horror Literature	5	4	25	75	100
22PENG25	Core Elective – II	5	4	25	75	100
22PFL26	Field Study	-	2	25	75	100
22PHUM27	Compulsory Course: Human Rights	2	2	25	75	100
	Total	30	24			700
SEMESTER- III						
22PENG31	Core Course IX: Twentieth Century British Literature	5	4	25	75	100
22PENG32	Core Course X: American Literature	5	4	25	75	100
22PENG33	Core Course XI: New Literature in English	5	4	25	75	100
22PENG34	Core Course XII: Research Methodology	5	4	25	75	100
22PENG35	Core Elective - III	5	4	25	75	100
22PENG36	Open Elective – II	5	3	25	75	100
	MOOC Courses					
	Total	30	23			600
SEMESTER – IV						
22PENG41	Core Course XIII: Indian Literature in English	6	4	25	75	100
22PENG42	Core Course XIV: Contemporary Literary Theories	6	4	25	75	100
22PENG43	Core Course XV: English Literature for Competitive Examinations	6	4	25	75	100
22PENG44	Core Project: Project	6	4	25	75	100
22PENG45	Core Elective – IV	6	4	25	75	100
	Total	30	20			500

SEMESTER: I OPEN ELECTIVE: I	22PENGO16-1: PUBLIC SPEAKING	CREDITS: 3 HOURS: 3/W
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COURSE OBJECTIVES

By introducing the course, it is intended to:

- 1) Learn to speak confidently in a variety of situations.
- 2) Learn a variety of speaking types. To become a better listener and learn what makes a speech works.
- 3) Learn to speak clearly with Proper modulation.
- 4) Motivate the students to understand the importance of public speaking.
- 5) Learn to stand straight and make eye contact.

Unit I

Production of Speech

Process of Listening

Unit II

Characteristics of Voice

Body Language

Organization of Speech

Unit III

Preparing Steps

Modes of Delivery

Speeches for Special Occasions

Unit IV

Practice Material I

- a. Pronouncing Individual Sounds
- b. Acquiring High Intonation
- c. Using Contracted Forms

Unit V

Practice Material II

- a. Mark Antony – Soliloquy (Antony and Cleopatra – Shakespeare)
- b. Martin Luther King – I have a Dream
- c. Winston Churchill –Blood, Toil, Tears and Sweat.
- d. Jawaharlal Nehru – Tryst with Destiny

COURSE OUTCOMES

At the end of the course, the students will be able to:

- 1) Inform and educate audience.
- 1) Persuade and convince the audience to change their attitudes and to accept speaker's point of view.
- 2) Inspire and motivate the audience.
- 3) Explore three types of public speaking in everyday life: Informative, persuasive, and entertaining.
- 4) Obtain oratory and rhetorical skills.

Supplementary Readings

- 1) Mohan, Krishna, and N. P. Singh. *Speaking English Effectively*. New Delhi: Macmillan, 2003.
- 2) O' Connor, J.D.O. *Better English Pronunciation*. New Delhi: Universal Books, 1997.

OUTCOME MAPPING

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	2				
CO 2		2			
CO 3			3		
CO 4				3	
CO 5					3

SEMESTER – II	2PHUMR27: HUMAN RIGHTS	CREDIT:2 HOURS:2/W
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COURSE OBJECTIVES

- 3) To understand the conceptual background of Human Rights.
- 4) To study international and regional norms and institutional mechanisms of Human Rights.
- 5) To know the international concern for Human Rights.
- 6) To explore the emerging issues in international human rights.
- 7) To study the Classification of Human Rights.

UNIT-I: CONCEPTUAL BACKGROUND OF HUMAN RIGHTS

Meaning, Nature and Scope of Human Rights - Need for the Study of Human Rights - Philosophical and Historical foundations of Human Rights - Classification of Human Rights –Major Theories of Human rights.

UNIT-II: INTERNATIONAL HUMAN RIGHTS NORMS AND MECHANISMS

UN Charter - Universal Declaration of Human Rights - International Covenant on Civil and Political Rights - International Covenant on Economic, Social and Cultural Rights - Other Major instruments on Human rights (Conventions on Racial Discrimination. Women and Child Rights. Torture, Apartheid and Refugees) -UN High Commissioner for Human Rights and its Sub-Commissions - Geneva Conventions and Protocols - UN High Commission for Refugees -Humanitarian Interventions of UN

UNIT-III: REGIONAL HUMAN RIGHTS STANDARDS AND MECHANISMS

European Convention on the protection of Human Rights - European Commission on Human Rights -American Convention on Human Rights - American Commission and Court of Human Rights - African Charter on Human and People’s Rights -African Commission and African Court for Human Rights- Universal Islamic Declaration of Human rights (1981)

UNIT-IV: ISSUES

Violence against Women and Children - Refugees & Internally Displaced People’s rights - Racism - Rights of Prisoners, Rights of Prisoners of War - Rights of Disabled, Aged, and Homeless Persons - Cyber Crimes and Human Rights -Euthanasia Debate- Bio-Technology and Human Rights (Human Cloning. Feticide and Medical Termination of Pregnancy, Surrogate Parenthood, Sale of Human Organs. Drugs and Technologies)

UNIT V: EMERGING DIMENSIONS

Third Generation Human Rights: Right to Water, Food, Health, Clothing, Housing, and Sanitation- Right to Education – Right to Peace and Prosperity - Right to have Clean Environment.

COURSE OUTCOMES

At the end of the course, the student

- 8) will have knowledge about the conceptual background of Human Rights.
- 9) can apprise on International Human Rights norms and mechanisms.
- 10) can understand the emerging dimensions of Human Rights in international forum.
- 11) can explain about the Third Generation Human Rights
- 12) can discuss about Right to Clean Environment.

Text Books

- 13) M.P. Tandon. Anand. V.K. International Law and Human Rights. Haryana. Allahabad Law house, Allahabad, 2013.
- 14) N. Sanjauba. Human Rights in the New Millennium, New Delhi Manas Publications, 2011.
- 15) S.K. Kapoor. Human Rights under International Law and Indian Law. Allahabad: Central Law Agency. 2012,
- 16) Danien Kings Lurge & Leena Avonius. Ed. Human Rights in Asia, London. Maemillan Publishers. 2016.

Supplementary Readings

- 17) Todd, Land Man, ed., Human Rights. London. Sage Publications. 2018.
- 18) G. Van Bueren, The International Law on the Rights of the child. Dordrecht: Martinus Nijhoff Publishers, 2011.
- 19) B.S. Waghmnre. ed. Human Rights. Problems and Prospects. Delhi. Lalinga Publications. 2011.

OUT COME MAPPING

CO/PO	PO				
	PO1	PO2	PO3	PO4	PO5
CO1	2	2	3	3	2
CO2	1	2	2	3	3
CO3	2	2	3	2	2
CO4	2	3	3	2	3
CO5	2	2	2	3	3

***1-Low *2-Medium *3-Strong**

ANNAMALAI UNIVERSITY
MASTER OF SCIENCE
M.Sc. CHEMISTRY
DEGREE COURSE
UNDER CBCS
With effect from 2020-2021

The Course of Study and the Scheme of Examinations

S. No.	Study Components		Ins. Hrs/ week	Credit	Title of the Paper	Maximum Marks		
	Course Title					CIA	Uni. Exam	Total
SEMESTER I								
1.	Core Theory	Paper-1	4	4	Organic Chemistry- I	25	75	100
2.	Core Theory	Paper-2	4	3	Inorganic Chemistry- I	25	75	100
3.	Core Theory	Paper-3	4	3	Physical Chemistry- I	25	75	100
	Core Practical	Paper-1	4	0	Organic Chemistry Practical- I	-	-	-
	Core Practical	Paper-2	4	0	Inorganic Chemistry Practical- I	-	-	-
	Core Practical	Paper-3	4	0	Physical Chemistry Practical- I	-	-	-
Internal Elective for same major students								
4.	Core Elective	Paper-1	3	3	(to choose 1 out of 3) A. Advanced Polymer Chemistry B. Heterocyclic Chemistry C. Materials Chemistry	25	75	100
External Elective for other major students (Inter/multi disciplinary papers)								
5.	Open Elective	Paper-I	3	3	(to choose 1 out of 3) A. Chemistry in Agriculture B. Food Chemistry C. Industrial chemistry-I	25	75	100
			30	16		125	375	500
SEMESTER II								
6.	Core Theory	Paper-4	3	3	Organic Chemistry- II	25	75	100
7.	Core Theory	Paper-5	3	4	Inorganic Chemistry- II	25	75	100
8.	Core Theory	Paper-6	3	3	Physical Chemistry- II	25	75	100
9.	Core Practical	Paper-1	5	3	Organic Chemistry Practical- I	25	75	100
10.	Core Practical	Paper-2	5	3	Inorganic Chemistry Practical- I	25	75	100
11.	Core Practical	Paper-3	5	3	Physical Chemistry Practical- I	25	75	100
12.	Compulsory paper		2	2	Human Rights	25	75	100
Internal Elective for same major students								
13.	Core	Paper-2	2	3	(to choose 1 out of 3)	25	75	100

	Elective				A. Green Chemistry B. Supramolecular and Nanochemistry C. Modern Separation Techniques			
External Elective for other major students (Inter/multi disciplinary papers)								
14.	Open Elective	Paper-II	2	3	(to choose 1 out of 3) A. Medicinal Chemistry B. Textile chemistry C. Dairy Chemistry	25	75	100
15.	* Field Study		-	2		-	-	100
			30	29		225	675	1000
SEMESTER III						CIA	Uni. Exam	Total
16.	Core Theory	Paper-7	3	3	Organic Chemistry- III	25	75	100
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Internal Elective for same major students								
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20.	Open Elective	Paper-3	2	3	(to choose 1 out of 3) A. Industrial Chemistry-II B. Science of Photography C. Energy Resources	25	75	100
21.	** MOOC Courses		-	-		0	0	100
			30	17		125	375	600
SEMESTER IV						CIA	Uni. Exam	Total
22.	Core Theory	Pape-10	4	4	Organic Chemistry- IV	25	75	100
23.	Core Theory	Paper-11	4	4	Physical Chemistry- IV	25	75	100
24.	Core Practical	Paper-4	5	3	Organic Chemistry Practical- II	25	75	100
25.	Core Practical	Paper-5	5	3	Inorganic Chemistry Practical- II	25	75	100
26.	Core Practical	Paper-6	5	3	Physical Chemistry Practical- II	25	75	100
27.	Core	Project	5	5	Project with viva voce (Compulsory)	100 (75 Project)		100

						+25 viva)		
Internal Elective for same major students								
28.	Core Elective	Paper-4	2	3	(to choose 1 out of 3) A. Inorganic Chemistry-IV B. Environmental Chemistry C. Medicinal Chemistry and Drug Design	25	75	100
External Elective for other major students (Inter/multi disciplinary papers)								
29.	Open Elective	Paper-4	2	3	(to choose 1 out of 3) A. Polymer and plastics B. Basics of Forensic science C. Health Science	25	75	100
				28		175	525	800
				90				2900

*** Field Study**

There will be field study which is compulsory in the first semester of all PG courses with 2 credits. This field study should be related to the subject concerned with social impact. Field and Topic should be registered by the students in the first semester of their study along with the name of a mentor before the end of the month of August. The report with problem identification and proposed solution should be written in not less than 25 pages in a standard format and it should be submitted at the end of second semester. The period for undergoing the field study is 30 hours beyond the instructional hours of the respective programme. Students shall consult their mentors within campus and experts outside the campus for selecting the field and topic of the field study. The following members may be nominated for confirming the topic and evaluating the field study report.

- (i). Head of the respective department
- (ii). Mentor
- (iii). One faculty from other department

****Mooc Courses**

Inclusion of the Massive Open Online Courses (MOOCs) with zero credits available on SWAYAM, NPTEL and other such portals approved by the University Authorities.

PAPER-I
(To choose 1 out of 3)

B. FOOD CHEMISTRY

OBJECTIVE:

- *To understand the different sources of food*
- *To learn the concept of food poisoning.*
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- *To study the importance of vitamins and uses.*
- *To appreciate the different minerals needed for day to day life*

OUTCOMES:

The student will be able to

- *Appreciate the importance of various foods.*
- *Acquire knowledge of remedies for various ailments.*
- *Identify the causes for food spoilage.*
- *Reason out the deficiency of vitamins.*
- *Illustrate the importance of minerals.*

UNIT-I FOOD ADULTERATION Sources of foods, types, advantages and disadvantages, constituents of foods, carbohydrate, protein, fats and, oils, colours, flavours, natural toxicants.

UNIT-II FOOD POISONING Sources, causes and remedy- Causes and remedies for acidity, gastritis, indigestion and constipation

UNIT-III FOOD PRESERVATION AND PROCESSING Food spoilage , courses of food spoilage, types of Food spoilage, food preservation ,preservation and processing by heating-sterilisation, pasteurization.

UNIT-IV VITAMINS Sources , requirement deficiency diseases of A, C, K, E1 and B6

UNIT-V MINERALS Mineral elements in food-Principal mineral elements-source. Function-Deficiency and daily requirements-Na, K, Mg, Fe, S and P

- REFERENCE BOOKS:** 1. Seema Yadav : —Food Chemistry, Anmol publishing (P) Ltd, New Delhi
2. Car H. Synder : — The Extraordinary Chemistry for ordinary things, John Wiley & sons inc., New York, 1992.
3. Sivasankar – Food Processing and Preservation PHI. (Eastern Economy Editions)

PAPER-I
(To choose 1 out of 3)
C. INDUSTRIAL CHEMISTRY-I

OBJECTIVES:

To make the students learn about fertilizers
To understand the importance of sugar industries
To learn the importance of Chemical explosives
To study about the leather industries
To understand the importance of water industry

OUTCOMES:

The students will be able to
Acquire knowledge of fertilizers
Appreciate the importance of sugar industries in India
Acquire knowledge of Chemical explosives
Illustrate the importance of leather industries
Identify the importance of water industry

UNIT I Fertilizers : Fertilizer industries in India, Manufacture of ammonia, ammonium salts, urea, superphosphate, triple superphosphate and nitrate salts.

UNIT II Sugar : Cane sugar manufacture, recovery of sugar from molasses, sugar estimation- sugar industries in India.

UNIT III Chemical Explosives : Preparation and chemistry of lead azide, nitroglycerine, nitrocellulose, TNT, RDX, Dynamite, cordite, picric acid, gunpowder, introduction to rocket propellants.

UNIT IV Leather Industry : Curing, preservation and tanning of hides and skins, process of dehairing and dyeing. Treatment of tannery effluents.

UNIT V Water Industry: Pollution of water by fertilizers, detergents, pesticides and industrial wastes, BOD, COD, thermal pollution. Water Treatment – Ion exchange, electro dialysis, reverse osmosis, softening of hard water. 121

Reference : 1. B.N. Chakrabarty, Industrial Chemistry, Oxford & IBH Publishing Co, New Delhi, 1981.

OPEN ELECTIVE (NON MAJOR)
PAPER-II
(To choose 1 out of 3)

A. MEDICINAL CHEMISTRY

OBJECTIVES:

To make the students learn the concept of medicinal chemistry
To understand the various sources and classification of drugs
To learn the importance of Chemotherapy
To study about the common body ailments
To understand about health promoting drugs

OUTCOMES:

The students will be able to
Appreciate the importance of medicinal chemistry
Acquire knowledge of classification of drugs
Identify the importance of Chemotherapy
Acquire knowledge of common body ailments
Illustrate the importance of health promoting drugs

UNIT I-INTRODUCTION Common diseases – infective diseases – insect – borne, air – borne and water-borne – hereditary diseases – Terminology – drug, pharmacology, antimetabolites, absorption of drugs – factors affecting absorption – therapeutic index (Basic concepts only)

UNIT II-DRUGS Various sources of drugs, pharmacologically active constituents in plants, Indian medicinal plants – tulsi, neem, keezhanelli – their importance – Classification of drugs – biological chemical (Structure not required) Drug receptors and biological responses – factors affecting metabolism of drugs. (Basic concepts only)

UNIT III-CHEMOTHERAPY Drugs based on physiological action, definition and two examples each of anesthetics- General and local – analgesics – narcotic and synthetic – Antipyretics and anti inflammatory agents – antibiotics – Penicillin, Streptomycin, Antivirals, AIDS – symptoms, prevention, treatment – Cancer (Structure not required)

UNIT IV-COMMON BODY AILMENTS

Diabetes – Causes, hyper and hypoglycemic drugs – Blood pressure – Systolic & Diastolic Hypertensive drugs – Cardiovascular drugs – depressants and stimulants – Lipid profile – HDL, LDL cholesterol lipid lowering drugs. (Structure not required)

UNIT V-HEALTH PROMOTING DRUGS Vitamins A, B, C, D, E and K micronutrients – Na, K, Ca, Cu, Zn and I, Medicinally important inorganic compounds of Al, P, As, Hg and Fe, Examples and applications, Agents for kidney function (Aminohippuric acid). Agents for liver function (Sulfo bromophthalein), antioxidants, treatment of ulcer and skin diseases. (Structure not required)

RECOMMENDED TEXT BOOKS:

1. S.Lakshmi Pharmaceutical Chemistry, S.Chand & Sons, New Delhi, 2004
2. V.K. Ahluwalia and Madhu Chopra, —Medicinal Chemistry, Ane Books, New Delhi, 2008
3. P.Parimoo, — A Text Book of Medicinal Chemistry, CBS publishers, New Delhi, 2006

RECOMMENDED REFERENCE BOOKS

1. Ashutosh Kar, —Medicinal Chemistry, Wiley Eastern Ltd., New Delhi, 1993,
2. David William and Thomas Lemke, Foyes Principles of Medicinal Chemistry, BI Publishers.
3. Romas Nogrady, Medicinal Chemistry, Oxford Univ. Press 129

PAPER-II **(To choose 1 out of 3)**

B.TEXTILE CHEMISTRY

OBJECTIVES:

To make the students learn the concept of textile chemistry

To understand about synthetic fibres

To learn the importance of raw cotton

To study about the dyeing process

To understand about finishes given to fabrics

OUTCOMES:

Appreciate the importance of textile chemistry

Acquire knowledge of synthetic fibres

Identify the importance of raw cotton

Acquire knowledge of dyeing

Illustrate the importance of finishes given to fabrics

UNIT I : 1. General classification of fibres-chemical structure, production, properties and uses of the following natural fibres (a)natural cellulose fibres (cotton and jute) (b) natural protein fibre (wool and silk).

UNIT II : Chemical structure, production, properties and uses of the following synthetic fibres. (i) Man made cellulosic fibres (Rayon, modified cellulose fibres) (ii) Polyamide fibres (different types of nylons) (iii) Poly ester fibres.

UNIT III : Impurities in raw cotton and grey cloth, wool and silk- general principles of the removal – Scouring – bleaching – Desizing – Kierboiling- Chemicking.

UNIT IV : Dyeing - Dyeing of wool and silk –Fastness properties of dyed materials – dyeing of nylon, terylene and other synthetic fibres.

OPEN ELECTIVE PAPER-3

C.ENERGY RESOURCES

OBJECTIVES:

To make the students to understand about energy resources

To understand the importance of solar energy

To learn the importance of energy from the ocean

To study about the wind energy and hydrogen energy

To understand the importance of energy management

OUTCOMES:

The students will be able to

Identify the importance of energy resources

Appreciate the importance of solar energy

Analyze the importance of energy from the ocean

Acquire knowledge of wind energy and hydrogen energy

Identify the importance of energy management

UNIT I: INTRODUCTION TO ENERGY SOURCES

Renewable and non-renewable energy sources, energy consumption as a measure of Nation's development - strategy for meeting the future energy requirements Global and National scenarios-Prospects of renewable energy sources.

UNIT II: SOLAR ENERGY

Solar radiation - beam and diffuse radiation, solar constant, earth sun angles- attenuation and measurement of solar radiation-solar cooker, solar heating and cooling of buildings- photo voltaics - solar cells and its applications.

UNIT III: ENERGY FROM THE OCEAN

Ocean Thermal Electric Conversion (OTEC) systems like open cycle-closed cycle- Hybrid cycle- prospects of OTEC in India. Energy from tides- basic principle of tidal power- single basin and double basin tidal power plants- advantages- limitation and scope of tidal energy.

UNIT IV: WIND ENERGY AND HYDROGEN ENERGY

Principle of wind energy conversion-Basic components of wind energy conversion systems-wind mill components-various types and their constructional features Hydrogen Energy-Introduction-Hydrogen Production methods-Hydrogen storage-hydrogen transportation-utilization of hydrogen gas-hydrogen as alternative fuel for vehicles.

UNIT V: ENERGY MANAGEMENT

Energy economics-energy conservation-energy audit-general concept of total energy system-scope of alternative energy system in India.

TEXTBOOKS

1. Rai. G.D., Non-conventional energy sources, 4th Edition, Khanna Publishers, 2009.
2. Garg H.P. & Jai, Solar Energy: Fundamentals and Applications by Prakash, Tata McGraw Hill, 1977.
3. Singhal B.L., Alternative Energy Sources, 2nd Edition Tech Max Publication, 2007.

REFERENCES

1. Duffic.J.A and Beckman W.A ,Solar Engineering of Thermal Processes , 3rd Edition ,John Wiley & sons, New York, 1975.
2. Giri.N.K, Alternate energy sources and application, 2nd Edition, Khanna Publication, 2004.
3. Sukhatme S,P, Solar Energy: Principles of Thermal Collection and Storage, 3rd Edition ,Tata McGraw Hill, 2008.

**OPEN ELECTIVE
PAPER-4
(To choose 1 out of 3)**

A.POLYMER AND PLASTICS

OBJECTIVES:

- *To make the students learn the concept of polymers and plastics.*
- *To understand the classification of polymers.*
- *To understand the methods of molecular weight determination.*
- *To learn the importance of freons and rubber.*
- *To appreciate the applications of plastics*

OUTCOMES:

The student will be able to

- *Classify the different types of polymers.*
- *Illustrate the importance of stereochemistry of polymers*
- *Apply the methods for determination of molecular weight*
- *Acquire knowledge on the various types of rubber*
- *Differentiate thermoplastic and thermosetting plastic*

UNIT-I 1.1. Basic concepts : An introduction to polymers and macro molecules. Natural and synthetic polymers. Classification of Polymers-addition and condensation polymers. 1.2. General methods of preparation of polymers. Polymerization through functional groups, multiple bonds and ring opening. Coordination polymerization.

UNIT-II 2.1. Structure of polymers- linear, branched and cross linked Stereochemistry of polymers-Isotactic, Sydiotactic and Atactic. 2.2. properties of polymers : The crystalline melting point. The glassy state and glass transition temperature.

UNIT-III 3.1. Copolymerisation – Definitions – homo and copolymers. Block copolymers and Graft copolymers. 3.2. Molecular weight of polymers. Number average molecular weight and weight average molecular weight. Determination of molecular weight by Viscosity and Osmometry methods.

UNIT-IV 4.1. Poly olefins-polythene, PTFE, Freons, PVC, polypropylene and polystyrene. 4.2. Natural and synthetic rubbers.-Constitution of natural rubber. Butyl, Buna, Buna-S, Buna-N, Neoprene, SBR, Thiocol, Polyurethane and silicone rubbers. 138

UNIT-V 5.1. Plastics and Resins Definitions. Thermoplastic and thermosetting resins. Constituents of plastic-fillers, dyes, pigments, plasticizers, Lubricants and catalysts.Uses of thermoplastic resins and thermo setting resins.

REFERENCES: 1. V. R. Gowrikar ,N.V.Viswanathan : Polymer Science- Wiley Eastern Limited ,New Delhi. 1986
2. R.B.Seymour, Introduction to Polymer Chemistry, MC Craw Hill, New York 1971.
3. S.S.Dara , A Text Book in Engineering Chemistry, S.Chand & Company Ltd, New Delhi. Third Edition ,1992.

		30		25				1000
SEMESTER III						CIA	Uni. Exam	Total
19.	Core	Paper -7	5	4	Distributed Operating System	25	75	100
20.	Core	Paper -8	5	4	XML and Web Services	25	75	100
21.	Core	Paper -9	5	3	Programming using Python	25	75	100
22.	Practical	Paper -7	3	2	Practical 7: Unix	25	75	100
23.	Practical	Paper -8	3	2	Practical 8: XML and Web Services	25	75	100
24.	Practical	Paper -9	3	2	Practical 9: Programming using Python	25	75	100
Internal Elective for same major students								
25.	Core Elective	Paper -3	3	3	(To choose one out of 3) A. Block chain Technology B. Internet of Things C. Network Security	25	75	100
External Major for other major Students (Inter/multi-disciplinary papers)								
26.	Open Elective	Paper - 3	3	3	(To choose one out of 3) A. Programming using C B. Programming using C++ C. Programming using Python	25	75	100
27.	**MOOC Courses		-	-				100
			30	23		200	600	900
SEMESTER IV						CIA	Uni. Exam	Total
28.	Core	Paper-10	5	4	Mobile Application Development	25	75	100
29.	Core	Paper-11	6	4	Software Project Management	25	75	100
30.	Practical	Paper-10	3	2	Practical 1: Mobile Application Development	25	75	100
31.	Core	Project	10	5	Project with viva voce (Compulsory)	100 (75 Project + 25 viva)		100
Internal Elective for same major students (Choose any one)								
32.	Core Elective	Paper - 4	3	3	(To choose one out of 3) A. Big Data Analysis B. Artificial Intelligence C. Machine Learning	25	75	100
External Major for other major Students (Inter/multi-disciplinary papers)								
33.	Open Elective	Paper - 4	3	3	(To choose one out of 3) A. Cyber Security B. Decision Support system C. Research Methods & Ethics	25	75	100
			30	21		125	375	600
			120	90				3300

* Field Study

There will be field study which is compulsory in the first semester of all PG courses with 2 credits. This field study should be related to the subject concerned with social impact. Field and Topic should be registered by the students in the first semester of their study along with the name of a mentor before the end of the month of August. The report with problem identification and proposed solution should be written in not less than 25 pages in a standard format and it should be submitted at the end of second semester. The period for undergoing the field study is 30 hours beyond the instructional hours of the respective programme. Students shall consult their mentors within campus and experts outside the campus for selecting the field and topic of the field study. The following members may be nominated for confirming the topic and evaluating the field study report.

OPEN ELECTIVE

PAPER - 3

B. PROGRAMMING USING C++

COURSE OBJECTIVES

- To understand object oriented programming and advanced C++ concepts.
- To understand the various functions and arguments in object oriented programming.
- To understand the classes and objects in C++.
- To be familiar with inheritance and polymorphisms.
- To be able to understand the concepts of files and exception handling.

COURSE OUTCOMES

CO1 - Students are able to understand object oriented programming and advanced C++ concepts.

CO2 - Students are able to understand the various functions and arguments in object oriented programming.

CO3 - Students are able to understand the classes and objects in C++.

CO4 - Students are able to familiarize with inheritance and polymorphisms.

CO5 - Students are able to understand the concepts files and exception handling.

UNIT – I: BASIC CONCEPTS

A look at Procedure Oriented Programming – Object Oriented Programming Paradigm – Basic Concepts of Object Oriented Programming – Benefits of OOP – Object Oriented Languages – Beginning With C++ - A Simple C++ Program – Structure of C++ Program – Tokens – Basic Data Types – Scope Resolution Operator – Manipulators – Expressions – Control Structures.

UNIT – II: FUNCTIONS

Functions – Function Prototyping – Call by Value – Call by Reference – Inline Functions – Default Arguments – Passing Arrays to Functions – Passing Structures to Functions – Recursion – Pointers – Function Overloading – Friend Functions.

UNIT – III: CLASSES AND OBJECTS

Defining Member Functions – Private Member Function – Data Members – Member Functions – Arrays of Objects – Objects as Function Arguments – Friendly Functions – Constructors and Destructors – Object Pointers.

UNIT – IV: INHERITANCE AND POLYMORPHISM

Operator Overloading – Inheritance – Single Inheritance – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance – Virtual Base Classes – Abstract Classes – Polymorphism – Virtual Functions.

UNIT – V: EXCEPTION HANDLING AND FILES

Exception Handling – File I/O Stream – File Stream Operations – Opening and Closing a File – Sequential Access.

TEXT

1. E Balagurusamy, “Object Oriented Programming with C++”, 5th Edition, McGraw Hill Education India Pvt Ltd. 2012.

REFERENCES

1. Andrew C. Staugaard JR, “Structured and Object-Oriented Problem Solving Using C++”, 3rd Edition, Prentice Hall, 2002.
2. Herbert Schildt, “C++: The Complete Reference”, 3rd Edition, Tata McGraw Hill, 1999.

WEB REFERENCES

<http://www.doc.ic.ac.uk/~wjk/C++Intro/>

<http://www.ideone.com/>

<http://www.compilr.com/c-compiler>

OPEN ELECTIVE

PAPER - 4

C. RESEARCH METHODS AND ETHICS

COURSE OBJECTIVES

- To demonstrate the knowledge of research processes (reading, evaluating, and developing);
- To perform literature reviews using print and online databases;
- To identify, explain, compare, and prepare the key elements of a research proposal/report;
- To compare and contrast quantitative and qualitative research

COURSE OUTCOMES

CO1 - Students are able to demonstrate knowledge of research processes (reading, evaluating, and developing);

CO2 - Students are able to perform literature reviews using print and online databases;

CO3 - Students are able to identify, explain, compare, and prepare the key elements of a research proposal/report;

CO4 - Students are able to compare and contrast quantitative and qualitative research

UNIT I: FOUNDATIONS OF RESEARCH

Meaning – Objectives – Motivation - Utility. Concept of theory – empiricism - deductive and inductive theory. Characteristics of scientific method –Understanding the language of research –Concept – Construct – Definition –Variable - Research Process.

UNIT II: PROBLEM IDENTIFICATION & FORMULATION

Research Question–Investigation Question –Measurement Issues –Hypothesis –Qualities of a good Hypothesis –Null Hypothesis & Alternative Hypothesis. Hypothesis Testing –Logic & Importance.

UNIT III: RESEARCH DESIGN

Concept and Importance in Research –Features of a good research design –Exploratory Research Design –concept, types and uses, Descriptive Research Designs –concept,types and uses. Experimental Design: Concept of Independent & Dependent variables.

UNIT IV: QUALITATIVE AND QUANTITATIVE RESEARCH

Qualitative research –Quantitative research –Concept of measurement, causality, generalization, replication. Merging the two approaches.

UNIT V: MEASUREMENT

Concept of measurement–what is measured? Problems in measurement in research –Validity and Reliability. Levels of measurement –Nominal, Ordinal, Interval, Ratio.

TEXT BOOK

1. C. R. Kothari: Research Methodology: Methods & Technology, New Age Int. Publ.

REFERENCES

1. Gupta Gupta : Research Methodology: Texts and cases with SPSS Application (2011 edn.), International Book House, New Delhi.
2. A.K.P.C.Swain : A Text Book of Research Methodology, Kalyani Publishers.

WEB REFERENCES

<https://libguides.wits.ac.za/c.php?g=693518&p=4914913>

<https://www.scribbr.com/dissertation/methodology/>

<https://www.intechopen.com/online-first/research-design-and-methodology>
