ISLAMIAH COLLEGE
(AUTONOMOUS)
VANIYAMBADI – 635 752

(AIDED & SELF FINANCE)

SYLLABI BOOK- VI

7th Academic Council

13th September 2015

DEPARTMENT OF ENGLISH

SYLLABUS

For

All the First Year Undergraduate Courses

SEMESTERS- I &II

FOUNDATION ENGLISH

ENVIRONMENTAL STUDIES

VALUE EDUCATION

(UNDER CBCS)

2015-2016

									MAX. MARKS		
B.A. ENGLISH											
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5EN1001	Main	CC01	Indian literature in English	5	5	3	25	75	100
	CC	U5EN1002	Main	CC02	Fiction	4	3	3	25	75	100
	CC	U5ENAL11	Allied I	CC03	Literary Forms	5	4	3	25	75	100
	EC	U5ENAL12	Allied II	EC03	The History of English Literature I [1350-1850]	4	3	3	25	75	100
					TOTAL	30	25	-	175	525	700

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tami ll/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5EN2001	Main	CC04	English Prose	5	5	3	25	75	100
	CC	U5EN2002	Main	CC05	English Drama	4	3	3	25	75	100
	CC	U5ENAL21	Allied III	CC06	The Social History of England	5	4	3	25	75	100
	EC	U5ENAL22	Allied IV	EC06	The History of English Literature II [1851-1950]	4	3	3	25	75	100
					TOTAL	30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

ISLAMIAH COLLEGE (AUTONOMOUS), VANIYAMBADI
I SEMESTER
PART II - ENGLISH I
COURSE CODE: U5FEN101

Objective:

The prime objective of this paper is to promote the linguistics competence into the minds of the young learners through teaching the basics of English and acquainting them with situational dialogues and expose the learners to the production and receptive skills.

Unit I   Grammar

Parts of Speech

1. Noun
2. Pronoun
3. Adjective
4. Verb
5. Adverb
6. Preposition
7. Conjunction
8. Interjection

A. Articles

Unit II

Infinitives
Participles
Gerunds
Auxiliaries and Modals
Subject Verb Agreement
Tenses
Language Lab –   *1 hour per week*

Unit III

Conversational Dialogues in Social Context

1. To introduce yourself
2. Making request

3. Seeking permission
4. Seeking clarification
5. Invitation

Unit IV

Conversational Dialogues at work place

1. In a shop
2. At the airport
3. Telephone banking
4. At a restaurant
5. Getting a driving license

Unit V

Writing

1. Short messages
2. Spotting errors
3. Note – making
4. Jumbled sentences
5. Comprehension

TEXT BOOKS:

1. Foundation English for Semester I – published by Islamiah College (Autonomous), Vaniyambadi, 2013.

2. Text for Environmental Studies, Erach Bharucha, University Grants Commission, New Delhi, 2004

Unit I

1. Definition
2. Scope
3. Importance
4. Awareness

Unit II

Natural Resources

1. Forest Resources
2. Water Resources
3. Mineral Resources
4. Energy Resources
5. Land Resources

Unit III

1. Food Resources
2. Energy Resources
3. Land Resources

Unit IV

1. Concept of Ecosystem
2. Types of Ecosystems
3. Forest Ecosystem

Unit V

1. Grassland Ecosystem
2. Desert Ecosystem
3. Aquatic Ecosystem

TEXT BOOK:

Environmental Studiies – UGC Syllabus – Periyar EVR College, Jayam Publications, Tiruchirapalli

SEMESTER – II

PART – II ENGLISH II
COURSE CODE: U5FEN201

Unit I Prose

1. Stephen Leacock : My Lost Dollar
2. Anita Desai   : A Devoted Son
3. R.K. Narayan   : Sweet for Angels

Unit II Poetry

1. Nissim Ezeikel   : Night of the Scorpion
2. Robert Frost   : The Road Not Taken
3. William Wordsworth: Daffodils

Unit III Grammar

1. Active and passive voice
2. Direct and indirect speech
3. Degrees of comparison

Unit IV Soft Skills

A. Time management

i.   Importance of time
ii. Characteristics of management tasks
iii. Determining time elements
iv. Time management techniques

B. Entrepreneurship

i.   Entrepreneur and its role
ii. Essentials steps to become an entrepreneur
iii. EDP training

Unit V Writing

i.   Report writing
ii. Cover letter
iii. Curriculum vitae

TEXT BOOK:

1. Foundation English for Semester II – published by Islamiah College (Autonomous), Vaniyambadi, 2013.

VALUE EDUCATION
COURSE CODE: U5VED201

Unit I

1. Definition and relevance in present day
2. Good values to be followed by individuals
3. Values related to self, society, culture, organization, country development, goodness and self-esteem

Unit II Family

1. Family and family values – responsibility of the family
2. Neutralization of anger, adjustability and threats of family life
3. Status of women in family – society, caring for needy and elders, time allotment and sharing

Unit III Ethics

1. Definition –Types – Ethical Values
2. Professional Ethics – Mass Media Ethics – Advertisement Ethics
3. Leadership qualities – personality development

Unit IV Social Values

1. Definition –faith - service - secularism – social senses and commitment
2. Students and Politics – Social Awareness – Consumer Awareness
3. Rights and Responsibility – Rights to Food and Shelter, good education, medical care and attention, to earn in right and good manner

Unit V Global Issues

1. Definition – Effect of International Affairs on values of life – Issues of Globalization
2. Environmental Issues
3. Mutual respect for different culture, religion and their values

TEXT BOOK:

Value Education: M. Uma Maheswari & K.R. Lakshmi Narayanan, Nanilam Pathipagam, Chennai

INDIAN LITERATURE IN ENGLISH
CORE PAPER-I
COURSE CODE: U5EN1001

UNIT-I: POETRY

1.   Rabindranath Tagore: Selections from Gitanjali (Lyrics 35, 36 and 50)

UNIT-II: POETRY

1.   A.K.Ramanujan : "A River"

Prescribed Text

Selections in units 1 and 2 are from The Lotus and Rose – An Anthology of Indian

Writing in English (Vol.III Poetry) – Edited by Anand Kumar Raju, Blackie & Sons.

UNIT-III: PROSE

Jawaharalal Nehru: Selections from the Discovery of India – Macmillan
G.K. Gokhale: "The Elevation of the Depressed Classes"
Nirad C Chaudhari: "The Eternal Silence of Infinite Crowds"

UNIT-IV: DRAMA

M.R. Anand: Coolie
Girish Karnad: Hayavadana – Oxford University Press

UNIT-V: FICTION

R.K. Narayan: English Teacher
Text Prescribed
For Units 1 and 2
Vol.3 Blackie and sons, 1992
For Unit 3
A.K.Raju.ed. The Lotus and Rose – An Anthology of Indian Writing In English.
Vol.4 Blackie and sons, 1992
Girish Karnad. Hayavadana Oxford: OUP.1997

Reference Books

1.   K.R.Srinivasa Iyenger: Indian Writing in English, Sterling Publishers, New Delhi

2. M.K.Naik – A History of Indian English Literature, Satitya Akademi, New Delhi.
3. H.M.Williams – Indo-Anglian Literature 1800-1970: A Survey, Orient Longman, Chennai.

FICTION
CORE PAPER-II
COURSE CODE: U5EN1002

UNIT-I
Jane Austen   – Pride and Prejudice
UNIT-II
Joesph Conard   -Heart of Darkness
UNIT-III
George Orwell   - Animal Farm
UNIT-IV
Thomas Hardy   - The Mayor of Casterbridge
UNIT-V
Graham Greene   - The Power and the Glory

LIERARY FORMS
ALLIED PAPER I
COURSE CODE: U5ENAL11

UNIT-I

The Essay, The Short Story, Biography, Autobiography

UNIT-II

The Lyric, The Sonnet, The Elegy, The Epic

UNIT-III

The Miracle and Mystery Plays, Comedy, Tragedy, Tragic-Comedy

UNIT-IV

The Dramatic Monologue, Soliloquy and Aside, The Absurd Drama, The One Act Play.

UNIT-V

The Detective Novel, The Stream of Consciousness Novel, The Realistic Novel.

Reference Books

1. William Henry Hudson: An Introduction to the Study of Literature, Kalayani Publishers, Ludhiana
2. Birjadish Prasad: A Background to the Study of English Literature (Revised Edition); Macmillan Company, Chennai.
3. R.J.Rees: English Literature – An Introduction for foreign Readers, Macmillan, London. K.R. Srinivasa Iyenger and Prema nanda kumar: introduction to the

study of the English Literature; Asia Publishing House, Bombay.

THE HISTORY OF ENGLISH LITERATURE – I (1350-1850)

ALLIED PAPER II
COURSE CODE: U5ENAL12

PROSE

Unit-1

Thomas More, Bacon, Philip Sidney, Steele, Addison, Dr. Johnson, G. K. Chesterton, George Orwell, A. G. Gardiner.

POETRY

Unit-2

Chaucer, Spencer, Shakespeare, Donne, Dryden and Pope

Unit-3

 Blake, Wordsworth, Shelley, Keats, Tennyson, Arnold, W.B. Yeats and T.S. Eliot

DRAMA

Unit-4

 Mystery play, Shakespeare, Ben Jonson, Goldsmith, Sheridan, G.B. Shaw

FICTION

Unit-5

 Defoe, Jane Austen, Walter Scott, Dickens, George Eliot, Thomas Hardy, E.M. Forster

Book for Reference;

An Outline History of English Literature - Hudson

SEMESTER-II

ENGLISH PROSE
CORE PAPER-III
COURSE CODE: U5EN2001

Unit-1

Francis Bacon   : 'Of Studies'
Francis Bacon   : 'Of Revenge'

Unit-2

Joseph Addison   : Sir Roger and Will Wimble

Unit-3

Oliver Goldsmith   : Man in Black
Charles Lamb   : Poor Relations

Unit-4

Stephen Leacock   : My Lost Dollar
George Orwell   : Sporting Spirit

Unit-5
Robert Lynd   : Pocket Money
C.E.M.Joad   : A Dialogue on Civilization

Content as in:
A collection of prose - (Compiled by) Department of English,
                         Islamiah College, Vaniyambadi

ENGLISH DRAMA
CORE PAPER-IV
COURSE CODE: U5EN2002

<u>Detailed</u>
Unit-1
Christopher Marlowe   : Doctor Faustus
Unit-2
Bernard Shaw   : Pygmalion

<u>Non-Detailed</u>
Unit-3
Oliver Goldsmith   : She Stoops to Conquer
Unit-4
Synge   : The Playboy of the Western World
Unit-5
Samuel Beckett   : Waiting for Godot

THE SOCIAL HISTORY OF ENGLAND
ALLIED PAPER III
COURSE CODE: U5ENAL21

UNIT-I (16th C)

The Reformation in England

Dissolution of the Monasteries

UNIT-II (17th C)

English Colonial Expansion

Coffee- House Life

UNIT-III (18th C)

Causes and Effects of Industrial Revolution

Agrarian Revolution

UNIT-IV (19th C)

Anti-Slavery Movement

The Influence of Science on Victorian England

UNIT-V (20th C)

Means of Communication

Education in the 20th Century

THE HISTORY OF ENGLISH LITERATURE-II (1851-1950)
ALLIED PAPER IV
COURSE CODE: U5ENAL22

UNIT-I (PROSE)

G.K. Chesterton

George Orwell

UNIT-II (POETRY)

Matthew Arnold

Alfred Lord Tennyson

UNIT-III (POETRY)

W.B. Yeats

W.H. Auden

UNIT-IV (DRAMA)

T.S. Eliot

Samuel Beckett

UNIT-V (NOVEL)

Charles Dickens

Thomas Hardy

DEPARTMENT OF BUSINESS ADMINISTRATION

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

						B.B.A						
										MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5BA1001	Main	CC01	Principles of Management	5	5	3	25	75	100
	CC	U5BA1002	Main	CC02	Business Organization	4	3	3	25	75	100
	EC	U5BAAL11	Allied I	EC03	Business Mathematics and Statistics I	5	4	3	25	75	100
	EC	U5BAAL12	Allied II	EC04	Fundamentals of Computer	4	3	3	25	75	100
				TOTAL		30	25	-	175	525	700

										MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC05	Tami lI/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC06	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5BA2001	Main	CC03	Managerial Communication	5	5	3	25	75	100
	CC	U5BA2002	Main	CC04	Banking and Financial System	4	3	3	25	75	100
	EC	U5BAAL21	Allied III	EC07	Business Mathematics and Statistics II	5	4	3	25	75	100
	EC	U5BAAL22	Allied IV	EC08	Training and Development of Employees	4	3	3	25	75	100
				TOTAL		30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

PRINCIPLES OF MANAGEMENT
COURSE CODE: U5BA1001

UNIT-1

Management-Importance-Definition-Nature and Scope of Management-Management process-Role and Function of a manager-Levels of management-Management vs. Administration-Management as an art or science-Management as a Profession-Management Approaches (Henry Fayol, F.W.Taylor, Elton Mayo's Contribution only).

UNIT-2

Planning-Nature-Importance-Steps in planning-Types of plans-Objectives-Policies-Procedures-And methods-Nature and types of policies-Decision making-Process of Decision Making-Types of Decision-Problem involved in Decision Making.

UNIT-3

Organisation-Types of organization structure-Span of control-Departmentation-Informal Organisation

UNIT-4

Authority-Delegation-Difference between Authority and Power- Decentralization-Responsibility-Staffing-Sources of Recruitment-Selection process-Training

UNIT-5

Coordination-Need of coordination-Types-Techniques-Distinction between coordination and cooperation-Requisites for Excellent coordination-Controlling-Meaning and Importance of Controls-Control process

TEXT BOOKS:
P.C Tripathi & P.N.Reddy -Priciples of Management-Tata Mc.Graw Hill
Prasad L.M- Priciples and Practice of Management
R.N. Gupta- Principles of Management- S.Chand Pub
REFERENCE BOOKS:
Guptha CB- Business Management
Peter-F, Drucker- Priciples of Management
Harold Koontz-aryasri & heniz weirich- Priciples of Management- Tata Mc.Graw Hill

BUSINESS ORGANISATION
COURSE CODE: U5BA1002

UNIT-1

Business-Meaning-Types of Business-Industry-Types of Industry-Commerce and Trade-Profession-Differences between Business and Profession- Difference between Profession and Employment-Organisation-Meaning and Principles of Business Organisation

UNIT-2

Forms of Business Organisation-Sole Trader-Partnership-Differences between Sole Trader and -Joint Stock Companies-Differences between Partnership firm and Joint stock company-Cooperatives Societies-MNC's

UNIT-3

Location of Industry-Factors Influencing Location and Size-Industrial Estate-District Industries Center

UNIT-4

Corporate Social responsibility-Business Ethics-Unethical practices in business

UNIT-5

Business combination-Causes-Types-Simple combination-Compound combination- Trade Association and Chamber of Commerce-Differences between Trade Association and Chamber of Commerce

TEXT BOOKS:

1. Bhusan Y.K- Business Organisation
2. Prakesh Jagadesh- Business Organisation and Management
3. Reddy P.N and Gulshan S.S.- Principles of Business Organisation and Management.
4. Vasudevan and Radhaswami- Business Organisation
5. M.C.Shukla- Business Organisation and Management.

BUSINESS MATHEMATICS AND STATISTICS-1
COURSE CODE: U5BAAL11

OBJECTIVES:

To apply the concepts of statistics and Mathematics in Business

UNIT-1

Statistics-Definition-Scope and Limitation-Presentation of Date-Diagrammatic and Graphical Representation of Data

UNIT-2

Measures of Central Tendency-Mean-Median and Mode-GM and HM-Advantages and Limitations

UNIT-3

Measures of Dispersion-Range-Mean Deviation-Quartile Deviation-Standard Deviation-Coefficient Variation-Measures of Skewness-Karl Pearson and Bowleys methods

UNIT-4

Mathematics for Finance-Simple and Compound Interest-Annuities-Sinking Funds-Discount and Present-Values

UNIT-5

Basic Calcus-Rules for Differentiation-Maxima and Minima and their Application to Business

Note: The proportion between theory and problems shall be 20:80

BOOK REFERENCE:
1. J.K. Sharma- Business Statistics- Pearson Publications
2. P. Naveentham- Business Statistics and Mathematics
3. P.R. Vital- Business Statistics and Mathematics

FUNDAMENTALS OF COMPUTER
COURSE CODE: U5BAAL12

Unit I Computer Fundamentals

Introduction- Characteristics of Computers- Classification (Digital, Analog, Hybrid), Micro, Mini and Super Computers - Personal and Advance Computer- Operating System

Unit II Components of Computer

Input devices-Types-Keyboard- Mouse-Output Devices-Classification of Output- Printers- Plotters- Monitors

Unit III MS Office

MS Office – Introduction – Word pad, Note pad. Standard Menu (file – edit-view- insert) -format menu-of MS Word, Excel and Power point,

Unit IV Data communication and Networking

Concept of Data Communication and Networking – Types of Network, Communication Media, Mode of transmission analysis, Digital transmission, Different Topologies

Unit V Internet

Internet basics- Basic Internet terms – Getting connected to Internet – Internet application –Electronic Mail – How E-Mail works - Searching the Web.

Books Recommended:

1. Fundamental of Computers-Rajaraman, Prentice Hall
2. Computer Today –B. Sandra
3. Fundamental of Computer –P.K. Sinha
4. Elementary Computer Applicatioin –Sharma, Upadyay and Agarwal
5. Computer Fundamentals -Sinha,P - BPB Publication , Jaipur
6. Introduction to Computers –Norton, Peter , Tata Mc Graw hills, New Delhi
7. Computer Fundamental – Anubha Jain , Deep Shikha Bhargav
8. Computer Fundamentals – V.K. Jain
9. A first course in computer – Vikas Publishing House
10. Introduction to Computer Science – ITL Education Solution Ltd.

SEMSESTER II
MANAGERIAL COMMUNICATION
COURSE CODE: U5BA2001

UNIT-1

Business Communication -Meaning- Importance- Objectives- Communication process- Types of communication- Methods of communication- Barriers to communication.

UNIT-II

Business letters -Structure of a Business letter- Qualities of a good Business letter- Letter of enquiry-Letter of Order- Execution of order letter- Cancellation of Order -Letter of Complaints- Collection letter.

UNIT-III

Circular letters -Banking Correspondence -Insurance Correspondence

UNIT-IV

Application for Situation- Secretarial Correspondence-Preparation of Agenda and Minutes-Annual Report

UNIT-V

Communication Media- Telegrams –Telephone –Telex –Fax - Cell phones- Internet.

TEXT AND REFERENCE BOOKS:
1. Rajendra pal and Korlehalli-Essentials of Business Communication
2. Pillai and Bagawathi-Modern Commercial Correspondence
3. A.N.Kapoot- Business Communication
4. Sandhanam.R- Business Communication
5. Ramesh and Patten shetty- Business English and Correspondence
6. L.Gartside- Modern Business and Correspondence

BANKING & FINANCIAL SYSTEM
COURSE CODE: U5BA2002

UNIT-I

Definition of bank - Origin of banks - -Types of bank - Unit bank- Merits and Demerits of unit bank- -Branch bank- Its merits and demerits - Mixed banking - Retail banking -Wholesale banking-Universal banking.

UNIT-II

Function of modern commercial banks-Savings accounts-Current account-Difference between savings account and current accounts- Fixed Deposit - Recurring Deposit - Granting of loan -Clean loan- Secured loan- Over draft- Cash credit.

UNIT-III

Role of Reserve Bank of India -Co-operative banks -NABARD (National Bank for Agriculture and Rural Development) - EXIM Bank.   Economic and Monetary implications of modern banking operations - Concepts of social responsibility of banks

UNIT-IV

Financial System-Components –Financial Institutions – Financial Market-Services of stock exchange – Financial Instruments (Promissory Note, Bill of Exchange and Cheque only).

UNIT-V

Financial Services (Factoring, Leasing, Hire Purchase, Housing Finance, Credit Card only) E-Banking.

TEXT AND REFFERENCE BOOKS:

1. B.Santhanam, Sundaram & Varshney-Banking and financial system.

2. B.Santhanam-Banking theory law and practice

3. Kandasami.K.P.-Banking law and practice.

BUSINESS MATHEMATICS AND STATISTICS-II
COURSE CODE: U5BAAL21

OBJECTIVES

To apply the concepts of Mathematics and Statistics in Business

UNIT-1

Matrix Theory-operations of Determinants-Inverse of a Square Matrix (not more than 3rd order)

UNIT-2

Solving Simultaneous Equations using Matrix Method-Integration and thier application to business

UNIT-3

Correlation-Karl Pearson`s Correlation-Concurrent Deviation Methiod-Rank Correlation-Regression lines-Regression Coeffients-Properties of Regression Coeffient.

UNIT-4

Time Series-Components of Time Series-Measurements of Trend-Semi Average Method-Moving Average Method-Methods of Least Squares

UNIT-5

Index Numbers-Weighted and UnWeighted Index Numbers-Cost of Living Index Numbers

Note: The proportion between theory and problems shall be 20:80

BOOKS FOR REFERENCE:

1. J.K.Sharma-Business Statistics-Pearsons Publications

2. P.Navaneetham-Business Statistics & Mathematics

3. P.R.Vittal-Business Statistics & Mathematics
4. S.P.Gupta-Elementary Statistical Method.

TRAINING AND DEVELOPMENT OF EMPLOYEES
COURSE CODE: U5BAAL22

Objective:

To provide an in-depth understanding of the role of Training in the HRD and to enable the course participants to manage the Training Systems and Processes

UNIT I: Introduction

Concepts of Training and Development – Identifying Training Needs – Structure and Functions of Training Development – Evaluation of Training Programme – Role, Responsibilities and Challenges to Training Managers

UNIT II: Training Techniques:

On the Job Training Techniques – Coaching – Apprenticeship – Job Rotation – Job Instruction Training – Training by Supervisors – Off the Job Training Techniques – Lecture, Conference, Group Discussion.

UNIT III: Career Planning:

Concept of Career – Career Stages – Career Planning and Development – Steps in Career Planning – Methods of Career Planning and Development

UNIT IV: Management Development Program (MDP):

Concept of Management Development – Need and Importance – Process – Components of MDP – Management Development Institutes – Productivity Councils

UNIT V: Training Institutions:

Need for Training in India – Government Policy on Training – Training Institutes in India

TEXT BOOKS:

1. Manpower Planning, Selection, Training & Development – Aggarwala D V, Deep & Deep Publications.
2. Training for Development – Rolf Lynton & Udai Pareek, Sage Publications.

DEPARTMENT OF COMMERCE

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

					B.Com. COMMERCE						
									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5CO1001	Main	CC01	Financial Accounting I	5	5	3	25	75	100
	CC	U5CO1002	Main	CC02	Business Organisation	4	3	3	25	75	100
	EC	U5COAL11	Allied I	EC03	Business Economics I	5	4	3	25	75	100
	EC	U5COAL12	Allied II	EC04	Business Communication	4	3	3	25	75	100
					TOTAL	30	25	-	175	525	700

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC05	Tami ll/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC06	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5CO2001	Main	CC03	Financial Accounting II	5	5	3	25	75	100
	CC	U5CO2002	Main	CC04	Business Management	4	3	3	25	75	100
	EC	U5COAL21	Allied III	EC07	Business Economics II	5	4	3	25	75	100
	EC	U5COAL22	Allied IV	EC08	Business Computer Applications	4	3	3	25	75	100
					TOTAL	30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

Core Paper - I

FINANCIAL ACCOUNTING – I
(Course Code: U5CO1001)

Semester: I   **Hours: 5**   **Credits: 5**   **Marks: ESE (75) + CIA (25)**

Objective: To impart theoretical and practical knowledge of fundamental accounting principles.

UNIT – I: Introduction

Basic Accounting Concepts – Accounting Conventions – Journal – Ledger – Preparation of Trial Balance – Errors – Types and Rectification of Errors.

UNIT – II: Final Accounts

Preparation of Final Accounts – Trading Account – Profit and Loss Account – Balance Sheet – Adjustment Entries - Bank Reconciliation Statement

UNIT – III: Depreciation Accounting

Meaning of Depreciation – Causes of Depreciation – Methods of providing Depreciation – Straight Line Method – Diminishing Balance Method (Excluding change in the method of depreciation) – Annuity Method – Sinking Fund Method – Concept of Depreciation under Companies Act, 2013

UNIT IV: Average Due Date and Fire Insurance Claims

Determination of Due Date – Calculation of Interest Fire Insurance Claims – Need for fire Insurance – Computation of claim to be lodged for loss of stock – Average Clause

UNIT V: Single Entry System

Single Entry System - Objectives – Definition – Features – Limitations of Single Entry System – Differences between Single Entry System and Double Entry System– Ascertainment of profit through Networth Method (Statement of Affairs) and Conversion Method
Note: Weightage of marks: Theory 20% and Problems 80%

Reference Books:

1. M.C.Shukla, T.S.Grewal, S.C. Gupta, Advanced Accounts – Volume I, S.Chand & Co., - New Delhi.
2. S.P. Jain and K.L.Narang, Financial Accounting, Kalyani Publishers, Ludhiana.

3. R.L.Gupta and M. Radhaswamy, Financial Accounting, Sultan Chand & Sons., New Delhi.
4. Mukherji & M. Hanif, Financial Accounting, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
5. T.S. Reddy and Murthy, Financial Accounting, Margham Publications, Chennai.

Core Paper – II
BUSINESS ORGANISATION
(Course Code: U5CO1002)

Semester: I   **Hours: 4**   **Credits: 3**   **Marks: ESE (75) + CIA (25)**

Objective: To acquaint the students with the basic concepts of business and commercial organisations.

UNIT-I: Nature of Business

Business - Meaning – Characteristics – Objectives - Classification of business Activities - Industry - Commerce - Trade - Distinction between trade and commerce – E-Commerce.

UNIT-II: Size of Business Units

Criteria for measuring size of business – Factors determining the size – Classification of business according to size – Micro – Small – Medium – Large – Importance of MSME units – Benefits available to MSMEs.

UNIT-III: Forms of Business Enterprises

Forms of Business Organisation - Sole Proprietorship – HUF - Partnership Firm – Limited Liability Partnership (LLP) - Co-operative societies - Joint Stock Companies – One Person Company (OPC) - Public Utilities – Public Enterprises - Public Private Partnership (PPP) – MNCs

UNIT-IV: International Business

International Business - Meaning – Scope – Objectives – Advantages – Disadvantages - Difference between domestic trade and international trade – Recent trends in business world.

UNIT-V: Trade Associations

Business Combinations – Meaning – Advantages – Limitations – Types - Trade Association – Trade Union - Chamber of Commerce - FICCI - Difference between Trade Association and Chamber of Commerce.

Reference Books:

1. C.B.Gupta, Business Organisation and Management, Sultan Chand & Sons, New Delhi.
2. C.D.Balaji and G. Prasad, Business Organization, Margham Publications, Chennai.
3. Motihar, Business Organisation, Vrinda Publications (P) Ltd., Delhi.
4. R.N. Gupta, Business Organisation & Management, S.Chand & Co., New Delhi.
5. Y.K. Bhusan, Business Organisation, Sultan Chand & Sons, New Delhi.

Allied Paper - I

BUSINESS ECONOMICS – I
(Course Code: U5COAL11)

Semester: I   **Hours: 5**   **Credits: 4**   **Marks: ESE (75) + CIA (25)**

Objective: To familiarise students with basic concepts in economics and its application in business.

UNIT – I: Business Economics

Meaning – Definition – Characteristics –Importance – Scope – Difference between Business Economics and Economics – Differences between Micro economics and Macro economics – Role and responsibilities of a Business Economist.

UNIT – II: Utility Analysis

Meaning – Characteristics – Cardinal – Ordinal – Total utility – Marginal utility – Law of diminishing marginal utility – Law of equi-marginal utility – Indifference curve analysis

UNIT – III: Demand

Meaning – Definition – Characteristics – Types of Demand - Factors determining demand – Demand curve - Elasticity of demand – Types – Overview of Demand forecasting techniques.

UNIT – IV: Production and Costs

Production - Meaning – Factors – Production Function – Law of Variable Proportions – Economies of Scale – Cost Concepts – Break-Even Analysis.

UNIT – V: Supply

Meaning – Factors affecting supply – Supply schedule – Supply curve – Law of supply – Elasticity of supply – Determinants of elasticity of supply

Reference Books:

1. Agarwal M.D., and Som Deo, Business Economics, Ramesh Book Depot, New Delhi.
2. Mehta P.L., Managerial Economics, Sultan Chand & Sons. New Delhi.
3. Sankaran S, Business Economics, Margham Publications, Chennai.
4. Mithani. D.M., Managerial Economics – Theory and Application, Himalaya Publishing House Pvt. Ltd., Mumbai.
5. Ahuja H.L., Business Economics, S.Chand & Co. Ltd., New Delhi.

Allied Paper - II

BUSINESS COMMUNICATION
(Course Code: U5COAL12)

Semester: I   **Hours: 4**   **Credits: 3**   **Marks: ESE (75) + CIA (25)**

Objective: To familiarize students with the principles of Business Communication and to train them to draft various business letters.

UNIT – I: Communication

Communication - Meaning – Objectives – Importance of effective communication in business - Types of communication – Verbal and Non-verbal – Formal and Informal – Directions of Communication - Principles – Barriers of Communication.

UNIT – II: Business Letters

Business letter – Functions - Kinds of business letters – Essentials of an effective business letter – Lay-out of a business letter – Tips for writing an effective business letter – Etiquettes for E-Correspondence.

UNIT – III: Enquiries and Replies

Enquiries – Status Enquiry - Replies – Offers and Quotations – Important terms used in offers and Quotations – Orders and their execution – Tenders – Guidelines for drafting tender notice – Specimen of tender notice.`   .

UNIT – IV: Collection Letters

Collection letter – Effective collection letter – Collection series - Replies of debtors - Circular letters - Objectives of writing Circular Letters – Specimen of circular letter.

UNIT – V: Application Letters

Introduction – Contents – Specimen of Application Letter – Bio-Data - Curriculum Vitae – Resume - Interview Call Letter.

Reference Books:

1. Rajendra Pal, J.S. Korlahalli, Essentials of Business communication, Sulthan Chand & Sons, New Delhi.
2. Shirley Taylor, Communication for business, Pearson publication, New Delhi.
3. CB Gupta, Basic Business Communication, Sultan Chand & Sons, New Delhi.
4. Dr. Sundar, Business Communication, Vijay Nicole Publishing Co., Chennai.
5. N.S. Raghunathan, B.Santhanam, Business Comm. Margham Publication, Chennai.

Core paper - III

FINANCIAL ACCOUNTING – II
(Course Code: U5CO2001)

Semester: I   **Hours: 5**   **Credits: 5**   **Marks: ESE (75) + CIA (25)**

Objective: To impart theoretical and practical knowledge of functional aspects of Accounting.

UNIT – I: Branch Accounts

Objectives of Branch Accounts – Types of Branches – Dependent Branch – Accounting for Dependent Branches - Debtor System - Stock and Debtors System – Independent branch (Foreign Branch excluded) – Final Account System.

UNIT – II: Departmental Accounts

Distinction between Departments and Branches – Allocation of common expenses – Expenses which cannot be allocated – Preparation of Departmental Accounts - Inter-departmental transfer at cost price and selling price. (Simple problems only)

UNIT – III: Hire Purchase System & Instalment Purchase System

Hire Purchase System – Accounting Treatment – Calculation of Interest – Books of Hire Purchaser and Hire Vendor – Default and Repossession – Instalment System – Distinction between Hire Purchase and Instalment Purchase system – Accounting treatment – Books of buyer and seller.

UNIT – IV: Partnership Accounts (Admission, Retirement and Death of Partner)

Partnership – Meaning and Features – Types of Partners - Admission of a partner – Calculation of Ratios – Treatment of Goodwill – Revaluation of Assets and Liabilities – Retirement and Death of a partner.

UNIT – V: Partnership Accounts (Dissolution)

Dissolution of partnership firm – Insolvency of a Partner and Partnership Firm – Garner vs Murray – Gradual Realization and Piecemeal Distribution (Simple problems only)

Note: Weightage of marks: Theory 20% and Problems 80%

Reference Books:
1. M.C.Shukla, T.S.Grewal, S.C. Gupta, Advanced Accounts – Volume I, S.Chand & Co., New Delhi.
2. S.P. Jain and K.L.Narang, Financial Accounting, Kalyani Publishers, Ludhiana.
3. R.L.Gupta and M. Radhaswamy, Financial Accounting, Sultan Chand & Sons., New Delhi.
4. Mukherji & M. Hanif, Financial Accounting, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
5. T.S. Reddy and Murthy, Financial Accounting, Margham Publications, Chennai.

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Core Paper - IV
BUSINESS MANAGEMENT
(Course Code: U5CO2002)

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Semester: I   **Hours: 4**   **Credits: 3**   **Marks: ESE (75) + CIA (25)**

Objective: To familiarise students with the principles of management and techniques used to effectively manage a business firm.

UNIT-I: An Overview of Management

Management - Meaning - Nature - Scope - Levels - Management vs. Administration – Principles of Scientific Management by Henri Fayol and by Frederick Winslow Taylor – Contributions of Peter Ferdinand Drucker and Mary Parker Follett to the field of management - The Management Process (POSDCORB).

UNIT –II: Planning

Planning – Meaning – Nature - Importance – Limitations – Principles – Types – Components (definition of various components only) – Planning Process – Forecasting – Importance – Limitations – Process - Decision-Making – Meaning - Nature – Process.

UNIT – III: Organising

Organising – Meaning – Nature – Steps – Significance – Determinants of an Organisation structure – Types – Formal and Informal – Departmentation - Span of Management – Determinants - Authority and Responsibility

UNIT – IV: Staffing and Directing

Delegation – Importance – Process – Types - Decentralisation – Merits and Demerits – Determinants – Delegation Vs. Decentralisation. Staffing – Importance. Directing – Nature – Significance – Principles – Techniques

UNIT –V: Controlling and Coordination

Controlling - Nature - Significance – Process – Overview of Traditional and Modern Control Techniques Coordination - Nature - Importance – Types - Techniques

Reference Books:

1. C.B. Gupta, Business Management Theory and Practice – Sultan Chand & Sons, New Delhi.
2. Harold Koontz, Cyril O'Donnell, Principles of Management – An Analysis of Managerial Functions, International Student, New Delhi.
3. Peter Ferdinand Drucker, Management Cases, Harper and Row Publishers, New York.
4. L.M. Prasad, Principles and Practice of Management, Sultan Chand & Sons, New Delhi.
5. J. Jayasankar, Principles of Management, Margham Publications, Chennai.

Allied Paper - III

BUSINESS ECONOMICS – II
(Subject Code: U5COAL21)

Semester: I   **Hours: 5**   **Credits: 4**   **Marks: ESE (75) + CIA (25)**

Objective: To acquaint students with application of economic theories in National and International Economics.

UNIT – I: Market Structure

Meaning – Classification – Monopoly – Duopoly - Oligopoly - Monopolistic competition – Perfect competition (Meaning and Features only)

UNIT – II: Price and Profit

Equilibrium price – Profit maximization – Sales maximization – Theories of profit – Rent, Risk, Uncertainty, Innovations and Dynamic

UNIT –III: National Income

Definition – Circular flow – Measurement –Gross Domestic Product (GDP) – National Domestic Product (NDP) – Gross National Product (GNP) –Net National Product (NNP) – Difficulties in measurement of national income – National income and welfare

UNIT –IV: Fiscal Economics & Monetary Policy

Public revenue - Public expenditure – Fiscal Deficit - Fiscal policy - Montery policy: Meaning - Importance – Objectives - Types - Instruments

UNIT –V: International Trade

Meaning – Theories of international trade – Classical theory – Comparative cost advantage – Modern theory of international trade - Balance of trade - Balance of payment – Components

Reference Books:

1. Agarwal M.D., and Som Deo, Business Economics, Ramesh Book Depot, New Delhi.
2. Sankaran S, Business Economics, Margham Publications, Chennai.
3. Mithani. D.M., Managerial Economics – Theory and Application, Himalaya Publishing House Pvt. Ltd., Mumbai.
4. Ahuja H.L., Business Economics, S. Chand & Co. Ltd., New Delhi.
5. Mehta P.L., Managerial Economics, Sultan Chand & Sons. New Delhi.

BUSINESS COMPUTER APPLICATIONS
(Course Code: U5COAP22)

Semester: I   **Hours: 4**   **Credits: 3**   **Marks: ESE (75) + CIA (25)**

Objective: To enable the students to acquire basic theoretical and practical knowledge in Computer and Internet and its applications in various areas of business.

Unit I: Introduction to Computer

Meaning – Definition – Importance - Features - Functions of Computer - Components of Computer - Hardware and Software - Input and Output Devices. (Basics only)

Unit II: Computer Memory and Role of Computers in Business

Introduction - Meaning - Types of Computer Memory – Primary and Secondary Memories - Types of Storage Devices - Auxiliary storage - Hard Disks, Compact Disk, Pen Drive (USB) - Role of Computers in Business. (Basics only)

Unit III: Word Document

Introduction – Uses of Word Documents - Word Basics - Various parts of a word window - Formatting Text and Documents - Line spacing – Margins - Borders and Shading - Headers and Footers – Tables - Creating table – Inserting, Changing and Deleting rows – Inserting, Changing and Deleting column - Overview of Word menu options - Word basic tool bar. (Basics only)

Unit IV: Excel/Spreadsheet

Introduction to Spreadsheet – Uses of Spreadsheet in Accounting, Finance and Marketing functions of Business – Spreadsheet basics – Parts of Spreadsheet - Creating, Inserting and Deleting Rows and Columns – Drawing Bar Charts and Pie Diagram. (Basics only)

Unit V: Powerpoint and Internet Access

Powerpoint Presentations: Basics – Creating Presentations - Using blank presentation option - Using design template option - Adding a slide - Deleting a slide - Importing Images - Transition and build effects - Numbering a slide - Saving presentation - Closing presentation - Printing presentation elements – Making a Slideshow - Introduction to Internet – Advantages of Internet - Applications of internet in Business, Education and Governance.

Reference Books:
1. Alexis Leon & Mathews Leon, Computer Applications in Business, Vijay Nicole Imprints Pvt.Ltd. Chennai.

2. Srinivasa Vallabhan, Computer Applications in Business, Sultan Chand & Sons, New Delhi.
3. Ananthi Sheshasaayee & Sheshasaayee, Computer Applications in Business and Management, Margham Publications, Chennai.
4. Ed Bott, woody Leonhard, Using Microsoft Office 2007, Pearson Education, New Delhi.
5. Sanjay Saxena, Introduction to Computers & MS Office, Vikas Publishing House Pvt. Ltd., New Delhi.

DEPARTMENT OF COMMERCE [FINANCE & ACCOUNTS]

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

									MAX. MARKS		
					B.Com. [FINANCE & ACCOUNTS]						
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l /Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5FA1001	Main	CC01	Financial Accounting I	5	5	3	25	75	100
	CC	U5FA1002	Main	CC02	Industrial Law	4	3	3	25	75	100
	EC	U5FAAL11	Allied I	EC03	Business Communication	5	4	3	25	75	100
	EC	U5FAAL12	Allied II	EC04	Indian Economy	4	3	3	25	75	100
				TOTAL		30	25	-	175	525	700

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC05	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC06	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5FA2001	Main	CC03	Financial Accounting II	5	5	3	25	75	100
	CC	U5FA2002	Main	CC04	Financial Markets	4	3	3	25	75	100
	EC	U5FAAL21	Allied III	EC07	Business Law	5	4	3	25	75	100
	EC	U5FAAL22	Allied IV	EC08	Indirect Taxes	4	3	3	25	75	100
				TOTAL		30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

Core Paper – I
Financial Accounting – I
(Course Code: U5FA1001)

Semester:I   Max.Marks:75
Hours: 5
Credits: 5

Objective: To equip the students to understand basic financial accounting concepts in the background of theoritical and practical knowledge.

UNIT–I: Introduction

Basic Accounting Concepts and Conventions – Journal – Ledger – Preparation of Trial Balance – Errors – Types and Rectification of Errors

UNIT–II: Final Accounts

Preparation of Final Accounts – Trading Account – Profit and Loss Account Balance Sheet – Distinction between Capital and Revenue expenditure –Adjustments Entries – Bank Reconciliation Statement (BRS)

UNIT–III: Depreciation Accounting

Meaning of Depreciation – Causes of Depreciation – Methods of Providing Depreciation – Straight Line Method – Diminishing Balance Method – (Excluding Change in the Method of Depreciation) – Annuity Method– Sinking Fund Method – Concept of Depreciation under Companies Act 2013

UNIT–IV: Average Due date and Insurance claims

Determination of Average Due Date – Insurance claims – Loss of stock – Average clause.

UNIT–V: Single Entry system

Single Entry – Objectives – Definition – Salient features – Limitations of Single Entry – Ascertainment of Profit – Statement of Affairs Method – Conversion Method – Difference between Statement and Affairs and Balance Sheet

Note: Weightage of Marks: Theory 20% and Problems 80%

Reference Books
1. M.C. Shukla, T.S. Grewal. Advanced Accounts [Volume I] S.Chand & Co. Ltd. New Delhi.

2. T.S. Reddy & A. Murthy – Financial Accounting, Margham Publications, Chennai.
3. R.S.M. Pillai, Bagawathi & S.Uma – Advanced Accounting (Financial Accounting) Volume–I S.Chand & Co. Ltd., New Delhi
4. R. L. Gupta & V. K Gupta, Financial Accounting, Sultan Chand & Sons, New Delhi
5. S.P.Jain & K.L.Naranj, Advanced Accountancy, Kalyani Publications, New Delhi, Ludhiana.

Core Paper – II
Industrial Law
(Course Code: U5FA1002)

Semester: I
Max.Marks:75 Hours: 4
Credits: 3

Objective:
To enable the students to gain knowledge on few enactments that governs working of industries and to labour force.

UNIT – I Factories Act 1948
Factories Act 1948 – Definition and Meaning – Health, Safety and Welfare – Hazardous Process – Working Hours For Adults – Holidays – Employment of young Persons and Women – Annual Leave with Wages.

UNIT – II Workmen's Compensation Act 1923
The Workmen's Compensation Act 1923 – Definition of Scope – Rules Regarding Compensation – Amount and Distribution of Compensation – Fatal Accident – Media Examination – Insolvency of Employer – First Charge on Assets Transferred – Returns as to Compensation – Contracting out – Penalties.

UNIT – III Payment of Wages Act 1936, Minimum Wage Act 1948 & Payment of Gratuity Act 1972
The payment of Wages Act 1936 – Definition – Rules for payment of Wages – Deduction from wages – Registers and Records – Inspection – Appeal – Penalty of offence – Minimum Wage Act 1948 – Objectives – Scope – Applicability – Fixing minimum wages – Payment of Gratuity Act– Objectives – Applicability – Superannuation Vs. Retirement– Calculation of Gratuity – Forfeiture of Gratuity – Controlling Authority.

UNIT – IV Industrial Dispute Act 1947
Industrial Dispute Act 1947 – Objects and Definitions – Industrial Dispute Meaning – Reference of Disputes to Grievance – Settlement Authorities – Authorities under the Act Conciliation and Adjudication Machinery – Procedure, Powers and Duties off Authorities Strike, Lockout and Layoff – Retrenchment.

UNIT – V ESI Act 1948, Employees Provident and Miscellaneous Provisions Act 1952

Constitutions of ESI – Power and Duties – ESI Fund – Contributions– General Provisions relating to Benefits – Employers Duties and Responsibilities – Theory of Notional Extension – EPS Scheme – Contribution, Advance, Advance/ Withdrawal/Final Withdrawal – Employee Pension Scheme – Employees Deposit Linked Scheme.

Reference Books:

1. Elements of Mercantile Law, N.D. Kapoor, Sultan Chand & Sons, New Delhi.
2. Legal Aspects of Business, Saravanavel & Sumathi, Kalyani Publishers, Delhi.
3. Commercial & Industrial Law, H.K.Sahoroy& N.K.Saha,New Central Book Agency,Kolkotta.
4. Commercial and Industrial Law, M.V. Dhandapani, Sultan Chand & Sons, New Delhi.
5. Commercial and Industrial Law, Dr. M.R. Srinivasan – Margham Publications,Chennai
6. Legal Systems in Business– T.S.Ravi, Margham Publications, Chennai.

Allied paper – I

Business Communication

(Course Code: U5FAAL11)

Semester: I   MaxMarks:75
Hours: 5   Credits: 4

Objective: To familiarize students with the principles of Business Communication and to train them to draft various business letters.

UNIT – I: Communication

Communication – Meaning – Objectives – Importance of effective communication in business – Types of communication – Verbal and Non–verbal – Formal and Informal – Directions of Communication – Principles – Barriers of Communication.

UNIT – II: Business Letters

Business letter – Functions – Kinds of business letters – Essentials of an effective business letter – Lay–out of a business letter – Tips for writing an effective business letter – Etiquettes for E–Correspondence.

UNIT – III: Enquiries and Replies

Enquiries – Status Enquiry – Replies – Offers and Quotations – Important terms used in offers and Quotations – Orders and their execution – Tenders – Guidelines for drafting tender notice – Specimen of tender notice.   .

UNIT – IV: Collection Letters

Collection letter – Effective collection letter – Collection series – Replies of debtors – Circular letters – Objectives of writing Circular Letters – Specimen of circular letter.

UNIT – V: Application Letters

Introduction – Contents – Specimen of Application Letter – Bio–Data – Curriculum Vitae – Resume – Interview Call Letter.

Reference Books:

1 .Rajendra Pal, J.S. Korlahalli, Essentials of Business Communication, Sultan Chand & Sons, New Delhi
2. Shirley Taylor, Communication for Business, Pearson Publication, New Delhi
3. CB Gupta, Basic Business Communication, Sultan Chand & Sons, New Delhi
4. Dr. Sundar, Business Communication, Vijay Nicole Publishing Co., Chennai.
5. N.S. Raghunathan, B.Santhanam, Business Communication Margham Publication, Chennai

Allied paper – II

Indian Economy

(Course Code: U5FAAL12)

Semester: I   Max.Marks:75
Hours: 4   Credits: 3

Objective
To enable the students to understand the salient features of India and her occupational structure; to assess the relative share of agriculture, Industry and Service sector in the economy and to analyze the fruits of planning.
.
UNIT–I Concept of Under Development
Meaning and Characteristics of Underdevelopment – Salient Features of Indian Economy – Factors responsible for development – development as distinct from growth – Obstacles to Economic Development

UNIT–II Planning
Planning in India– Meaning – Economic Planning – Types of Planning– Major objective of Five year Plans– Twelfth Five Plan.

UNIT – III Agricultural Economy

Agriculture – Role in Indian Economy (Contribution to GNP & Employment) – Problems of Low Productivity – Land Reforms – Need and Scope– Green Revolution

UNIT – IV Industrial Economy

Industry – Importance – Role of Large Scale Industries– Role of Small and Micro Enterprises – Industrial Sickness– Causes and Measures

UNIT – V New Economic Policy

New Economic Policy and its impact on Indian Economy – Liberalisation – Privatization – Globalization

Reference Books

1. Rudar Datt & Sundaram, Indian Economy, S. Chand & Co, New Delhi.

2. Dhingra.I.C., Indian Economy, Sultan Chand & Sons, New Delhi.

3. M. L. Jhingan, Economics of Development & Planning, Konark Publishers, New Delhi.

4. Dr.S. Sankaran, Indian Economy, Margham Publications, Chennai.

5. RBI Bulletin, Pramit Chaudhury, The Indian Economy, Poverty and Development, Vikas

   Publishing House, New Delhi.

6. Velayutham Foreign Trade, Theory & Practice, S. Chand & Co., New Delhi.

Financial Accounting – II

(Course Code: U5FA2001)

Semester: II   Max.Marks:75

Hours: 5   Credits: 5

Objective: To gain knowledge of accounting in General, to understand the system of Financial Account.

UNIT – I: Branch Accounts
Branch Accounts – Objectives of Branch Accounts – Types of Branches – Dependent Branch – Debtor system – Stock and Debtor system – Independent Branch (Foreign Branch Excluded) – Final Account System.

UNIT – II: Departmental Accounts
Departmental Accounts – Distinction between Department and Branches – Allocation of expenses – Interdepartmental department transfer at Cost or Selling Price. (Simple problems only)

UNIT – III: Hire Purchase System & Installment System
Hire Purchase System – Accounting treatment – Calculation of Interest – Books of Hire Purchaser and Hire Vendor – Default and Repossession – Installment System Distinction between Hire Purchase System and Installment Purchase System – Accounting treatment – Books of Buyers and Sellers

UNIT – IV: Partnership Accounts (Admission)
Partnership– Meaning and Features– Types of Partners – Admission of a Partner – Profit & Loss Appropriation account – Adjustment in Profit Sharing Ratio.

UNIT – V: Partnership Accounts (Retirement & Dissolution)
Partnership Accounts – Treatment of Goodwill – Adjustment for Goodwill – Retirement and Death of Partners– Dissolutions of Partnership Firm– Insolvency of a Partner and Partnership Firm– Garner Vs. Murray– Gradual Realisation and Piecemeal Distribution. (Simple Problems only)

Note Weightage of Marks: Theory 20% and Problems 80%.
Reference Books
1. M.C. Shukla, T.S. Grewal, Advanced Accounts,S. Chand & Co. Ltd., New Delhi.
2. T.S. Reddy, & A. Murthy, Financial Accounting, Margham Publications, Chennai.
3. R.S.N. Pillai, Bagavathi & S. Uma, Advanced Accounting {Financial Accounting} Volume, I, S. Chand & Co. Ltd., New Delhi.
4. R.L. Gupta & V.K. Gupta, Financial Accounting, Sultan Chand & Sons, New Delhi.
5. S.P.Jain & K.L. Narang, Advanced Accountancy, Kalyani Publications, New Delhi, Ludhiana.
6. Dr. S. Ganesan, S.R. Kalavathy, Thirumalai Publications, Nagarkoil.

Core Paper – IV
Financial Markets
(Course Code: U5FA2002)

Semester: II   Max.Marks:75

Hours: 4   Credits: 3

Objective

To know the basic ideas of Indian capital market and understand the functioning of primary and secondary markets, further to familiarize the student about stock trading.

UNIT: I   Financial System in India

Functions of Financial System– Capital Markets – its Importance – Money Market – Development of Financial System in India – Weaknesses of Indian Financial System – Money Market Vs. Capital Market.

UNIT: II Primary Market

Meaning – SEBI Functions – Stock Exchange – Functions of New Issues Market – Methods of Floating New Issues – Guidelines – Steps – Instruments – Players – Recent trends – Advantages of New Issues.

UNIT: III Secondary Market

Control of Secondary Market – Recognition and Services of Stock Exchanges – Organisation of Stock Exchanges in India – Traditional Structure of Indian Stock Exchanges – Listing of Securities – A, B and C Group of Shares – Advantages, Drawbacks, Procedure, Criteria and Obligations of Listing.

UNIT: IV Trading

Registration, Procedure, Code of Conduct and Functions of Brokers – Kinds of Brokers – Method of Trading in Stock Exchange – Online Trading – NSE–NEAT System – Carryover or Badla– Genuine Trading Vs. Speculative Transactions – Stock Indices – Recent Developments**.**

UNIT: V Financial Derivatives

Meaning – Definition– Kinds of Financial Derivatives – Forwards, Futures, Options and Swaps

Allied Paper – III
Business Law
(Course Code: U5FAAL21)

Semester: II   Max.Marks:75
Hours: 5   Credits: 4

Objective

To gain a comprehensive knowledge on all aspects of legal rules as to contracts & sale of goods

UNIT – I Formation of Contracts

Essential Elements of Contracts – Types of Contract and Agreement, Rules as to offer, Acceptance and Consideration – Capacity to Contract.

UNIT – II Performance of Contract

Performance of Contract – Discharge of Contract – Breach of Contract and Remedies – Quasi Contracts

UNIT – III Indemnity and Guarantee

Indemnity and Guarantee – Features and Distinctions – Extent of Surety's Liability, Rights and Discharge of Surety – Bailment and Pledge – Features – Difference – Right and Duties of Bailor and Bailee –Right and Duties of Pawnor and Pawnee.

UNIT – IV Contract of Agency

 Definition and Meaning – Creation – Ratification and Requisite – Rights of Principal and Agent – Personal Liability of Agent – Termination of Agency – Irrevocable Agency

UNIT – V Sale of Goods Act 1930

Definition of Sale – Sale Vs. Agreement to Sell – Subject Matter – Express and Implied Conditions and Warranties – Caveat Emptor and Exceptions.

Reference Books:

 1. Business Laws, N.D.Kapoor, Sultan Chand & Sons, New Delhi.

 2. Business Laws, M.C.Dhandapani, Sultan Chand & Sons, New Delhi.

 3. Mercantile Law, M.C. Shukla, S.Chand & Co, New Delhi.

 4. Business Laws, R.S.N.Pillai & Bagavathi, S.Chand & Co, New Delhi.

 5. Business Laws, P.C.Tulsian, Tata McGraw Hill, New Delhi.

 6. Premavathi N, Business Law, Srivishnu Publications, Chennai.

Allied Paper – IV
Indirect Taxes
(Course Code: U5FAAL22)

Semester: II   Max.Marks:75
Hours: 4   Credits: 3

Objective
To gain a comprehensive knowledge on all aspects indirect taxes viz., central excise, customs, VAT and service taxes.

UNIT–I CONCEPT OF TAXTATION

Constitution of India – Taxation under Constitution – Objectives of Taxation – Canons of Taxation– Direct and Indirect Taxes –Merits– Demerits.

UNIT–II CENTRAL EXCISE DUTIES

Nature –Types – Classification of Goods – Valuation under Central Excise – Registration and Filing returns– Excise and Exports– Excise and Small Scale Industries

UNIT–III SERVICE TAX

Meaning – Characteristics– Nature of Service Tax– Service Provider and Service Receiver – Different services on which tax is payable – Exempted Services– Service Tax procedures.

UNIT–IV CUSTOM DUTIES

Scope – Types – Valuation under Customs – Custom Procedures – Import & Export Procedures – Baggage–Import & Export through Courier – Post Parcel – Exemption – Refunds.

UNIT–V VALUE ADDED TAX

Meaning – Justifications of VAT– Objectives– Advantages– Disadvantages – Types of VAT Registration – Filing of Returns – Refunds

Reference Books
1. Dr. R.K. Leki, Dr. Jogindhar Singh, Public Finance, Kalyani Publishers, New Delhi.
2. T.S. Reddy, & Y.Hari Prasad Reddy – Indirect Taxes, Margham Publications, Chennai
3. K.T. Nagabhushan Swamy, The Tamilnadu VAT Act, 2006, Nagas Publications, Chennai.
4. www.indiaimage.nic.in
5. www.cbec.gov.in
6. www.incometaxindia.gov.in
7. www.taxmann.com.

DEPARTMENT OF COMMERCE [COMPUTER APPLICATION]

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

B.Com. [COMPUTER APPLICATION]											
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	MAX. MARKS		
									CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami I/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5CA1001	Main	CC01	Financial Accounting I	5	5	3	25	75	100
	CC	U5CA1002	Main	CC02	Principles of Management	4	3	3	25	75	100
	EC	U5CAAL11	Allied I	EC03	Introduction to Information Technology	5	4	3	25	75	100
	EC	U5CAAP12	Allied II	EC04	MS Office Practical I	4	3	3	25	75	100
			TOTAL			30	25	-	175	525	700

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC05	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC06	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5CA2001	Main	CC03	Financial Accounting II	5	5	3	25	75	100
	CC	U5CA2002	Main	CC04	Business Economics	4	3	3	25	75	100
	EC	U5CAAL21	Allied III	EC07	Tally [Theory]	5	4	3	25	75	100
	EC	U5CAAP22	Allied IV	EC08	Tally [Practical]	4	3	3	25	75	100
			TOTAL			30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

Object:
  * To provide knowledge on the fundamental aspects of financial accounting.
  * To expose the students to various aspects of financial accounting and its current applications.

UNIT-I:

Definition of accounting – Advantages and Limitations of accounting- Need, concepts and conventions - Accounting Equation –Journal, Ledger and Preparation of Trail Balance - Rectification of errors - Self balancing ledgers.

UNIT-II:

Final Accounts - Introduction - Manufacturing Account -Trading Account - Distinction between Capital and Revenue expenditure - Profit and Loss Account - Balance Sheet - Various adjustments - Classification of Assets and Liabilities.

UNIT-III:

Depreciation, Reserves and Provisions - Depreciation, Depletion and Amortization - Objectives of providing depreciation - causes of depreciation - methods of recording depreciation - straight line method - Diminishing Balance Method

UNIT-IV:

Account current - Average Due Date - Insurance claim - Loss of stock - Average clause.

UNIT-V:

Single Entry - Objectives - Definition - Salient features - Limitations of Single Entry - Ascertainment of Profit - Statement of Affairs Method - Conversion Method - Differences between Statement and Affairs and Balance Sheet

REFERENCE BOOKS:

1. M.C.Shukla, T.S.Grewal. Advanced Accounts (volume I) S.Chand & Co., Ltd., New Delhi
2. T.S.Reddy & A.Murthy - Financial Accounting - Marghan Publications, Chennai.
3. R.S.N. Pillai, Bagawathi & S.Uma - Advanced Accounting (Financial Accounting) volume I, S.Chand & Co. Ltd., New Delhi.
4. R.L. Gupta & V.K. Gupta, Financial Accounting, Sultan Chand & Sons, New Delhi
5. S.P. Jain & K.L. Naranj, Advanced Accountancy, Kalyani Publications, New Delhi, Ludhiana.

CORE PAPER II
PRINCIPLES OF MANAGEMENT
COURSE CODE: U5CA1002

Object:

- To introduce the students to the various management concepts
- To explain the various functions of management.

UNIT-I

Concept of Management - Meaning and Definitions - Nature and Characteristics of Management - Management Vs Administration - Levels of Management - Importance of Management and Scope of Management - Principles

UNIT-II

Process of Management - Planning - Its Nature, Need Characteristics, Objectives and Importance of Planning - Types of Planning - Principles of Planning - Steps in Planning Process - Planning Premises - Forecasting - Decision Making.

UNIT-III

Organizing - Principles of Organization - Staffing Functions and Importance of Staffing - Departmentation - Authority and Responsibility - Organization Charts and Manual - Job Analysis and Job Evaluation.

UNIT-IV

Directing: Principles of Delegation - Delegation Vs Decentralization - Principles and Techniques of Directing - Span of Supervision - Fundamentals of Effective Supervision - Role of Communication

UNIT-V

Leadership - Qualities of Good Leader - Types of Leadership - Co-ordination and Control - Problems in Co-ordination - Steps Involved in Control Process.

REFERENCE BOOKS:

1. Business Management - Dr.C.B.Gupta - Sultan Chand & Sons
2. Management principles and Practices - Lallan Prasad & S.S.Gulshan & S.Chand & Co.
3. Principles of management - Koontz, Weihrich and Aryasri & Tata McGraw hill
4. Principles & Practice of Management - Dr.H.C. Das Gupta & Sahitya Bhawan Agra

INTRODUCTION TO INFORMATION TECHNOLOGY
COURSE CODE: U5CAAL11

Objective:

- To provide basic knowledge of information technology and its applications.

UNIT-I:

Introduction: History of Computer parts of Computer System, Hardware devices - Software operating system - Examples of operating system - Computer Networking - Visual Editor.

UNIT-II:

Word processing with Ms Word - starting Ms Word - Ms Environment - working with word documents - working with text - working with tables - checking spelling and grammar - printing document - spreadsheets and Ms Excel - starting Ms Excel - Ms Excel Environment - working with Excel - workbook - working with work.

UNIT-III:

Making presentation with Ms Power point - starting Ms Power point - Ms Power point Environment - working with power point - working with different views - designing presentations - printing in power point

UNIT-IV:

MS-Access: Creating a Data Base –Table –Creating forms using wizard –Generating Reports (Simple).

UNIT-V:

Computer networking basics –Networking Topology –LAN –WAN –Net working Devices –Information System Management –Information Concepts –Planning issues and the MIS Organizing issues and the MIS –Control issues and the MIS –Decision Support System.

REFERENCE BOOKS:

1. Edward Willeh, David Crower & Rohanda Crowder "MS Office 2000 Bible", IDG Books & India -2000.

2. Sanjay Saxsena, "A First Course in Computer", Vikas Publishing House, 2000

3. Sanjay saxsena, "MS Office 2000", Vikas Publishing House, 2000.

4. Linda Tway, Sapphiro Pacific Lajolla, "Multimedia in Action", Academic Press, 1995.

ALLIED PAPER II
MS OFFICE (PRACTICALS)
COURSE CODE: U5CAAP11

Objective:

- To impart basic knowledge of MS-Office to the students so that the students can prepare text documents and Excel sheets and ppt's for presentation.

(A) MS-WORD

1. Usage of Numbering, Bullets, Tools and Headers

2. Usage of Spell Check and Find and Replace

3. Text Formatting

4. Picture Insertion and Alignment

5. Mail Merge Concept

6. Creation of Tables, Formatting Tables

7. Splitting the Screen

8. Inserting Symbols in Documents

(B) MS-EXCEL

1. Changing of Column Width and Row Height (Column and Range of Column)

2. Moving, copying, Inserting and Deleting Rows and Columns

3. Creating Chart.

4. Using Excel Function (Date, Time)

5. Using Excel Function (Statistical Mathematics)

6. Using Excel Function (Financial)

(C) MS-POWER POINT

Working with Slides

1.Creating, saving, Running Slides

2. Adding Headers and footers

3. Changing slide layout

4. Working fonts and bullets

5. Inserting Clipart

II SEMESTER
CORE PAPER III
FINANCIAL ACCOUNTING – II
COURSE CODE: U5CA2001

Objectives:

- To understand the preparation of accounting for branch and departments
- To understand the treatment of partnership accounting.

UNIT-I

Branch Accounting: Meaning –Objectives –Types of Branch –Debtors System –Stock and Debtors System –Wholesale Branch –Independent Branch (Foreign Branches Excluded).

UNIT-II

Departmental Accounting: Meaning –Need –Advantages –Difference between Branch and Department Account-Apportionment of Expense- Inter Department Transfer.

UNIT-III

Hire Purchase and Installment System: Definition-Feature –Distinction –Accounting Treatment –Calculation of Interest and Cash Price-Default and Repossession –Hire Purchase Trading Account –Installment Purchase System –Meaning –Accounting Treatment.

UNIT-IV

Partnership Account: Definition –Partnership Deed –Past Adjustments and Guarantee – Admission of a Partner –Profit Sharing Ratio and Sacrificing Ratio –Preparation of New Balances Sheet Retirement of a partner Death of Partner

UNIT-V

Dissolution of a Firm: Meaning –Modes of Dissolution –Insolvency of a Partner – Garner Vs Murray's Principles –Insolvency of all partners –Piecemeal Distribution – Proportionate Capital Method –Maximum loss Method.

Reference Books:

1. R.L. Gupta & V.K. Gupta- Advanced Accounting- Sultan Chand- New Delhi.
2. T.S. Reddy & A. Murthy- Financial Accounting- Margham Publication- Chennai
3. Shulka & Grewal- Advanced Accounting- S Chand – New Delhi
4. Jain & Narang- Financial Accounting, Kalyani Publications, New Delhi
5. Jawahar Lal, Seema, Financial accounting, S. Chand & Company, New Delhi

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CORE PAPER IV
BUSINESS ECONOMICS
COURSE CODE: U5CA2002

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Objective:

To make the students understand the Law of demand, Demand forecasting, Cost concepts and Market structure.

UNIT – I

Nature and scope of economics – Meaning of Business economics - objectives and scope of business economics – Role and Responsibilities of a business economist Meaning of law of demand – exceptions, changes in demand – demand determinants – importance – elasticity of demand – types - measurement – its importance – demand forecasting

UNIT – II

Meaning of production – Production function – Short run and long run – economies and diseconomies of scale – Supply – determinants

UNIT- III

Cost concepts – Kinds of Cost – Cost and output relationship – revenue – total revenue – average revenue – Marginal revenue -curves under perfect & imperfect competition – Break even analysis.

UNIT – IV

Market structure – Pricing under perfect competition – Monopoly – Monopolistic competition

UNIT – V

Inflation – Trade cycle – causes – effects – Monetary policy – Fiscal Policy.

REFERENCE BOOKS

1. Business Economics - S.Sankaran

2. Business Economics - P.N.Reddy and H.R.Appanniah

3. Managerial Economics- R.L.Varasheney and K.L.Maheswari

4. Modern Economic Theory- K.K.Dewett

ALLIED PAPER III
TALLY (THEORY)
COURSE CODE: U5CAAL21

UNIT: I

Introduction to Accountancy – Introduction to Tally fundamentals – Maintenance of company Data – Concept of Ledger – Configuration of chart of Accounts – Maintaining Stock Details - How to make entries in Cash book – Purchase book – Sales book – Invoice – Purchase return book – Sales return book – Petty cash book – Configuration in tally

UNIT: II

Introduction to Bills – Details of bills – Description of: Accounting vouchers – Inventory vouchers – Cost centers and Cost categories – Entries in Trail balance – How to create new groups – master configuration – Accounts masters – readymade creation – List of groups – How to alter groups – creation of primary groups – Secondary group creation

UNIT: III

Introduction to VAT – VAT activation and classification – Creating of ledger – Stationary ledger – Display the created ledger – concepts of voucher – Creation of receipt voucher – Payment voucher – Credit note – Remove the voucher – Print the voucher – Accounting input credit on opening stock – Accounting of interstate branch transfer – VAT computation – VAT Form – CST introduction – Ledger Creation – Creating vouchers – CST reports

UNIT: IV

TDS Introduction – Configuration of Tally for TDS - Creation of balance sheets – concept of trial balance in tally – balance sheet – sales registers – Purchase registers – Sales vouchers – concept of ageing – receivable ageing – receivable ageing – TDS Report – Configuring Tally for Service Tax – Master Creation – Service Tax Reports

UNIT: V

Bank reconciliation – Concept of inventory – Inventory in tally – creation of stock category – stock groups – creation of multi stock item – inventory vouchers – Inventory reports – Printing Reports – Consolidation of Accounts and other reports – Security control

BOOKS RECOMMENDED:

1.   TALLY, Sridharan, Narmadha publications, May 2003.

2.   E-Commerce, a guidance, Rajamalar, Narmadha publications, May 2003.

ALLIED PAPER IV

TALLY PRACTICAL
COURSE CODE: U5CAAP21

1.   Create a group in Tally

2.   How to create a primary group? Explain with your own example

3.   Create Ledger with your own entries from the books already available

4.   Explain how to create Voucher entries including preparation of final accounts.

5.   Explain how to remove voucher entries.

6.   Print the Voucher you have created with all necessary entries

7.   Explain how to create stock category.

8.   Explain how to create groups with your own entries.

9.   Explain – Multi Stock Item

10.   Creation of Delivery Note – Explain with your entries.

DEPARTMENT OF HISTORY

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
					B.A. HISTORY						
									MAX. MARKS		
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tamil I/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5HI1001	Main	CC01	History of India Upto 1206 AD	5	5	3	25	75	100
	CC	U5HI1002	Main	CC02	History of Tamil Nadu from Sangam Age to Imperial Cholas	4	3	3	25	75	100
	CC	U5HIAL11	Allied I	CC03	Tourism Principles and Policies	5	4	3	25	75	100
	EC	U5HIAL12	Allied II	EC03	Intellectual History of 20th Century India	4	3	3	25	75	100
					TOTAL	30	25	-	175	525	700

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
									MAX. MARKS		
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tamil II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5HI2001	Main	CC04	History of India from 1206 to 1707 AD	5	5	3	25	75	100
	CC	U5HI2002	Main	CC05	History of Tamil Nadu from Second Pandiyan Empire to 1806 AD	4	3	3	25	75	100
	CC	U5HIAL21	Allied III	CC06	Tourism Resources of India	5	4	3	25	75	100
	EC	U5HIAL22	Allied IV	EC06	Intellectual History of 20th Century Tamil Nadu	4	3	3	25	75	100
					TOTAL	30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

I SEMESTER   **CORE PAPER I**

HISTORY OF INDIA UPTO A.D. 1206

(Hrs/Week: 5, Credit: 5)

COURSE CODE: U5HI1001

UNIT - I

Meaning, Nature and Scope of History – Ancient Indian Historiography – Sources of Indian History – Geographical Features and Its Influence on Indian History

UNIT - II

Indus Valley Civilization**:** Indus Script, Great Bath and Granary, Town Planning, Economy and Trade, Religious Life – Early Vedic Period**:** Political, Social and Economic Life – Status of Women – Religion – Later Vedic Period**:** Political, Social and Economic Life – Status of Women – Education – Religion

UNIT - III

Jainism: Mahavira and His Teachings, Jain Literature – Buddhism: Gautama Buddha and His Teachings, Buddhist Literature – Alexander's Invasion

UNIT - IV

Mauryan Empire**:** Chandragupta, Asoka, Decline of Mauryas – Gupta Empire: Chandra Gupta I, Samudra Gupta, Chandra Gupta II – Decline of Guptas – Harsha Vardhana and His Times

UNIT - V

Chalukyas – Rashtrakutas – Kakatiyas – Arab Invasion of Sindh – Turko-Afghan Invasion: Mahmud Ghazni, Muhammad Ghori

Maps:

1. Sites of Indus Valley Civilization
2. Route of Alexander's Invasion
3. Samudra Gupta's Empire
4. Ashoka's Empire

5. Harsha's Empire

Books for Reference:

1. R.C. Majumdar, H.C. Raychaudhuri & K. Duttta: An Advance History of India, Macmillan India Limited., 2004, New Delhi
2. Romila Thapar: Ancient India, Penguin India Ltd., New Delhi,1998
3. D.N. Jha: Ancient India, Manohar Publishers, New Delhi, 2004
4. J.C. Agarwal: Ancient Indian History, S.Chand & Co., New Delhi
5. A.L. Basham: The Wonder That Was India, OUP, New Delhi
6. L. Mukerjee: Ancient India, New Delhi

I SEMESTER   **CORE PAPER II**

HISTORY OF TAMIL NADU
FROM SANGAM AGE TO THE IMPERIAL CHOLAS
(Hrs/Week: 4, Credit: 3)
COURSE CODE: U5HI1002

UNIT - I

Influence of Geography and Topography on the history of Tamil Nadu – Sources – Races and Tribes – Dravidians – Pre History of the Tamils – Aryanization.

UNIT - II

Physical features of Tamil Nadu in the Sangam Age – Sangam Age: Early Chera, Chola and Pandyas – Sangam Literature – The Chieftains – Socio and economic condition of Sangam people

UNIT - III

The period of Kalabrahs – Religious Practices and Culture – The Rise of Pallavas

UNIT - IV

Later Pallavas – Pandyas of Madurai – The Pallava-Chalukya conflicts – The Pallava Rashtrakuta conflicts – Decline of the Pallavas – Administration and Social life – Literature – The Pallava Art and Architecture – Bakthi Movement

UNIT - V

The Rise of the Imperial Cholas – The Chola-Pandya conflicts – The Chalukya Cholas – The Chola Overseas Empire – Decline of the Cholas – Administration and Social life – Art and Architecture

Books for Reference

1. Dikshidar V.R.R.: Studies in Tamil literature and History
2. Gopalan. A.: Pallavas of Kanchi
3. Gilbert Stater: Dravidian elements in Indian culture
4. Kanagasabai.V: The Tamils in1800 years ago
5. Krishnasamy Aiyangar.S: Beginnings of South Indian History
6. Dr. Meenakshi C: Administration and social life under the Pallavas, University of Madras, Madras 1977.
7. Sadasivapandarathar: Previous history of Cholas.
8. Sadasivapandarathar: History of Pandyas.
9. Rajamanickam Pillai: Pallava History
10. Rajamanickam Pillai: History of Cholas.

I SEMESTER   **ALLIED PAPER I**

TOURISM PRINCIPLES AND POLICIES

(Hrs/Week: 5, Credit: 4)

COURSE CODE: U5HIAL11

UNIT - I

History of Tourism – Definition, Nature, Scope and Importance of Tourism – National Tourism Action Plan 1992

UNIT - II

Kinds of Tourism: Historical Tourism – Cultural Tourism – Religious Tourism – Medical Tourism – Adventure Tourism

UNIT - III

Components of Tourism: Travel Agents – Tour Operators – Tourist Information and Guiding Service – Transportation – Accommodation and Catering – Attractions

UNIT - IV

Tourism Organizations: World Tourism Organization, International Air Travelers Association, Pacific Asia Travel Association, Indian Association of Tour Operators

UNIT - V

Tourism as an Industry: Government Policies – Tourism and Economy – Social, Cultural and Environmental Impact of Tourism

Books for Reference:

1. Bhatia, A.K.: Tourism Development: Principles and Practices, Sterling Publishers Pvt., Ltd., New Delhi, 1989
2. Bhatia, A.K.: International Tourism Management, Sterling Publishers Pvt., Ltd., New Delhi, 1992

3. Burkart A.J. and Madlik: Tourism, Past, Present and Future, Heinemann, London, 1994

4. Sinha P.C.: Tourism Evolution, Scope, Nature and Organization, Anmol Publications Pvt., Ltd., New Delhi

5. Panda Tapan, K, Srikantha Mishra and Birsaj Bhusan Parida (Eds.): Tourism Development: The Socio-Economic and Ecological Perspective, Universities Press, Hyderabad, 2004

6. Karthik C. Roy, Clement A. Tisdell: Tourism in India and India's Economic Development, Nova Science Publishers, USA, 1998

7. Arun Kumar Sarkar: Action of Plan and Priorities in Tourism Development, Kanishka Publishers, New Delhi

8. Kaul R.H.: Dynamics of Tourism: A Trilogy, Sterling Publishers Pvt., Ltd., New Delhi

INTELLECTUAL HISTORY OF 20TH CENTURY INDIA
(Hrs/Week: 4, Credit: 3)
COURSE CODE: U5HIAL12

UNIT - I

India at the beginning of the 20th Century-Political Condition – Social Condition – Economic Condition- Course of Freedom Movement.

UNIT - II

Political Thought: B.G.Tilak – Mahatma Gandhi – B.R.Ambedkar – S.V. Patel – Subash Chandra Bose – Jawaharlal Nehru- Jayaprakash Narayan- Maulana Abul kalam Azad.

UNIT - III

Social Thought: Vinoba Bhave – Dr. Muthulakshmi Reddy – Periyar E.V.R – Mother Theresa.

UNIT - IV

Socialist and Communist: M.N.Roy – S.A. Dange – Ram Manohar Lohia – E.M.S. Namboodiripad.

UNIT - V

Literatures: Rabindranath Tagore – Muhammed Iqbal – Subramanya Bharathi – Thiru Vi. Ka-Sarojini Naidu-Bharathidasan

Books for Reference:

1. Naravane, V.S.: Modern Indian Thought, Orient Longman, New Delhi.

2. Grover, B.L. & Grover,S: A New Look at Modern Indian History (from1707 to the Modern times)

3. Nanda, B.R: Jawaharlal Nehru, Rebel and statesman, Oxford University Press, Delhi 1995.

4. Gopalakrishnan,M.D.: Periyar, Father of Tamil Race, Emerald Publishers, Chennai.

5. Bharathi: Mahatma Gandhi, Man of theMillenium, S.Chand&co, New Delhi,2000.

II SEMESTER   **CORE PAPER III**

HISTORY OF INDIA FROM A.D. 1206 TO A.D. 1707
(Hrs/Week: 5, Credit: 5)
COURSE CODE: U5HI2001

UNIT - I

The Slave Dynasty: Qutbuddin Aibak – Iltutmish – Razia Sultan – Balban

The Khilji Dynasty: Alauddin Khilji – His Southern Expedition – His Market Reforms

The Tugluq Dynasty: Muhammad bin Tugluq – His Schemes – Firoz Shah Tugluq – His Reforms - Timur's Invasion – The Sayyids – The Lodis

UNIT - II

Delhi Sultanate: Administration – Art and Architecture – Downfall

UNIT - III

The Great Mughals: Babar – First Battle of Panipat – Humayun – Second Battle of Panipat – Sher Shah – His Administration – Akbar – Din-e-Ilahi – Jahangir and Noor Jahan

UNIT - IV

Shah Jahan – Golden Age of the Mughals – Aurangzeb – His Deccan Policy

UNIT - V

Mughal Administration – Art and Architecture – Rise of Shivaji – His Administration – Birth of Sikhism – Guru Nanak

Maps:

Alauddin Khilji's Empire

Malik Kafur's Southern Expedition

Muhammad bin Tughluq's Empire

Mughal Empire under Akbar

Mughal Empire under Aurangzeb

Books for Reference:

1. Majumdar, H.C. Raychaudhuri & K. Duttta: An Advance History of India, Macmillan India   Limited. 2004, New Delhi

2. Charusis: Medieval History of India, Kings Books, Delhi

3. Sharam: The Crescent in India, Lakshmi Narain Agarwal, 1983

4. L.P. Sharma: History of Medieval India, Konark Publishers Pvt., Ltd., 1997, Delhi

II SEMESTER   **CORE PAPER IV**

HISTORY OF TAMIL NADU
FROM SECOND PANDYAN EMPIRE TO A.D. 1806
(Hrs/Week: 4, Credit: 3)
COURSE CODE: U5HI2002

UNIT - I

Second Pandyan Empire – The Chola-Pandya conflict – Hoysala and Rashtrakuta interference in Tamil Nadu – Invasions of Malik Kafur and Ulugu Khan – Fall of The Pandyan Empire – Account of Marcopolo and Abdullah Wassaf – Administration and Social life – Art and Architecture

UNIT - II

The founding of the Sultanate of Madurai – Jalaluddin Hasan Sha – The Rise of Vijaya Nagar Empire – Kumarakampana – Decline of the Madurai Sultanate – Impact of Islam – Administration – Art and Architecture – Social life and Cultural Expansion

UNIT - III

The Fall of Vijayanagar Empire – The Rise of Nayaks of Madurai – Gingee – Tanjore – Vellore – Administration – Art and Architecture – Social life and Cultural Expansion

UNIT - IV

The Mughal Invasion – Zulfiqar Khan – Nawabs of Arcot – Poligar System – The Marathas of Gingee and Tanjore – The Rise of Sultanat-e-khudadat – Hyder Ali and Tipu Sultan – Society – Literature – Art and Architecture

UNIT - V

The Coming of the Europeans – European Settlements in Tamil Nadu – British East India Company – Carnatic Wars – Mysore Wars – Virapandiya Katta Bomman – Marudhu Brothers – Poligar Rebellion – South Indian Confederacy and the Rebellion – Vellore Mutiny of 1806

Books for Reference

1. Majumder. R.C: The History and culture of Indian People. Vols.VI to X
   B.V.Bhavan – Bombay – 1976
2. Rajayyan K.: History of Madurai 1736 – 1801.
3. Rajayyan K. : South Indian Rebellion, The First war of Independence
4. Rajayyan K. : Administration and Society in the Carnatic
5. Rajayyan K. : Rise and fall of the Poligars of Tamil Nadu
6. Sathiyanathaier.R. : Tamilaham in the 17th Century Madras – 1956
7. Sathiyanathaier.R. A History of the Nayakas of Madurai – Ananda Book Deopt.
8. Srinivasachari.C: A History of Gingee and its Rulers – Annamalai Nagar.

TOURISM RESOURCES OF INDIA
(Hrs/Week: 5, Credit: 4)
COURSE CODE: U5HIAL21

UNIT - I
Historical Resources: Qutub Minar, Red Fort, India Gate, Jantar Mantar, Teen Murti Bhavan, Taj Mahal, Fatehpur Sikiri. Hawa Mahal, **Religious Resources:** Char Dham Yatra, Vaishnavadevi Temple, Haridwar, Bodhgaya, Mount Abu, Jamia Masjid Delhi, Ajmer Shareef, Golden Temple

UNIT - II
National Parks and Wildlife Sanctuaries: Corbett National Park, Kanha National Park, Sanjay Gandhi National Park, Kaziranga National Park, Gir Wildlife Sanctuary, Mudumalai Wildlife Sanctuary

UNIT - III
Bird Sanctuaries: Salim Ali Bird Sanctuary, Porbandar Bird Sanctuary, Nawab Ganj Bird Sanctuary, Nalsarovar Bird Sanctuary, Vedanthangal Bird Sanctuary – **Waterfalls:** Kunchikal Waterfalls, Jog Falls, Meenmutti Waterfalls, Hognekkal Waterfalls, Kutralam Waterfalls

UNIT – IV
Hill Stations: Shimla, Darjeeling, Nainital, Srinagar, Mussorie, Ooty – **Seaside Resorts:** Goa Beaches, Havelock Beach, Paradise Beach, Marina Beach, Kovalam Beach

UNIT - V

Luxury Trains and Spas: Palace on Wheels, Golden Chariot, Deccan Odyssey, Fairy Queen –**Fairs and Festivals:** Id-ul-Fitr, Id-ul-Azha, Pongal, Dassehra, Holi, Durga Puja, Diwali, Christmas, Kumbh Mela, Pushkar, Baishakhi

Books for Reference:

1.   Michael George: Monuments of India, Vol.1 and 2, London, 1988
2.   Percy Brown: Indian Architecture: Buddhist and Hindu, Bombay, 1972
3.   Percy Brown: Indian Architecture: Islamic Architecture, Bombay, 1972
4.   Oki Morihiro: Fairs and Festivals, World Friendship Association, Tokyo, 1988
5.   Vikram Bhat: Hill Stations of India, Grantha, U.K.
6.   Bikram Grewal(Ed.): Indian Wildlife
7.   Michael Coltman: Tourism Marketing, Van Nostrand Reinhold, New York, 1989
8.   Sinha, P.C.: Tourism Marketing, Anmol Publishers, New Delhi, 2002

IV SEMESTER   **ALLIED PAPER IV**

INTELLECUAL HISTORY OF 20TH CENTURY TAMIL NADU

(Hrs/Week: 4, Credit: 3)

COURSE CODE: U5HIAL22

UNIT – I

Political**:** Pasumpon Muthuramalinga Thevar- Thillaiyadi Valliammai- Rettamalai Srinivasan- M.C.Raja- Rajaji- E.V.Ramaswamy Naicker-
UNIT - II

Social: Ramalinga Adigal- Vallal Alagappar- Bharathidasan- Arcot Brothers- Ida Scudder- Jamal Mohammed
UNIT - III

Religious: Joseph Constantine Beschi-Vaikuntha Swamigal- Mrs. Annie Besant- Umaru Pulavar- Kirubananda Variyar- Swami Shajananda
UNIT - IV

Cultural : Seethakadi- Ayodhya Dasa pandithar- G.Subramania Iyer- M.S. Subbulakshmi-Pattukottai Kalyana Sundaram- Kannadasan- Padma Subramaniam- Justice M.M. Ismail
UNIT – V

Scientific: G.D. Naidu – M.S. Swaminathan- Rangarajan (Sujatha)- - Dr. Abdul kalam- Mayilsamy Annadurai

Books for Reference

1. Paramarthalingam.C. Religion and Social Reform in Tamil Nadu, Rajkumari Publications, Madurai, 1997

2. Sen, S.P. (Ed.), Social and Religious Reform Movements in the 19th and 20th centuries, Calcutta Institute of Historical Studies, 1979.

3. Pillai K.K.: Tamilagavaralarum, MakkalumPanpadum (Tamil) Internationalinstitute of TamilStudies, Chennai 2004

4. Rajayyan.k. History ofTamilNadu (1585- 1982), Raj Publishers, Madurai 1982

5. Vishwanathan, E.Sa: The Political Career of E.V.R., Ravi& Vasanth Publications, Madras, 1983

6. Sivagnanam M.P.   ViduthalaiPoril Tamilagam (Tamil) Vol. I&II, Poongkodi Pathippagam, Chennai 2005

DEPARTMENT OF MATHEMATICS

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL

B.Sc. MATHEMATICS

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5MS1001	Main	CC01	Algebra and Trigonometry	7	7	3	25	75	100
	CC	U5MS1002	Main/ Main Pract.	CC02	Computational Laboratory I	2	1	3	25	75	100
	CC	U5MSAL11	Allied	CC03	Numerical Methods I	7	6	3	25	75	100
	EC	U5MSAP11	Allied Pract.	EC03	Problem Solving Techniques I	2	1	3	25	75	100
		TOTAL				30	25	-	175	525	700

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5MS2001	Main	CC04	Calculus & Solid Geometry	7	7	3	25	75	100
	CC	U5MS2002	Main Pract.	CC05	Computational Laboratory II	2	1	3	25	75	100
	CC	U5MSAL21	Allied	CC06	Numerical Methods II	7	6	3	25	75	100
	EC	U5MSAP21	Allied Pract.	EC06	Problem Solving Techniques II	2	1	3	25	75	100
		TOTAL				30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

| Paper I | **ALGEBRA AND TRIGONOMETRY** | Code : U5MS1001 |

Objectives: Students are exposed to topics like Theory of Equations, Summation of Series, Matrices, Expansions of trigonometric functions, hyperbolic and inverse hyperbolic functions. It develops logical and systematic computational skills.

UNIT– I: THEORY OF EQUATIONS

Polynomial Equations – Imaginary and Irrational roots – Symmetric functions of roots in terms of Coefficients – Sum of rth powers of roots – Reciprocal Equations – Transformation of Equations – Approximate Solutions of Polynomials by Newton's method and Horner's method.

UNIT–II: SUMMATION OF SERIES

Summation of series using Binomial, Exponential and Logarithmic series (Theorems without proof) – Approximations

UNIT–III: MATRICES

Symmetric, Skew Symmetric – Hermitian, Skew Hermitian – Orthogonal and Unitary Matrices –Cayley Hamilton Theorem (without proof) – Eigen Values – Eigen Vectors – Diagonalization – Simple Problems.

UNIT– IV: EXPANSIONS

Expansions of $\sin n\theta$ and $\cos n\theta$ – Expansion of $\tan n\theta$ in terms of $\tan \theta$ – Powers of Sines and Cosines of θ in terms of functions of multiples of θ – Expansions of $\sin^n\theta$, $\cos^n\theta$ in a series of ascending powers of θ

UNIT – V: HYPERBOLIC AND INVERSE HYPERBOLIC FUNCTIONS

Definition – Relations between Hyperbolic functions and Circular functions – Inverse Hyperbolic functions – Simple Problems.

RECOMMENDED TEXT:

1. ALGEBRA Vol. – I & II, *T. K. Manickavachagompillay, T. N. Natarajan and K. S. Ganapathy*, (2007), S. Viswanathan Printers & Publishers Pvt. Ltd, Chennai.
2. MATHEMATICS FOR B.SC. Vol. –I, II, III & IV, *P. Kandasamy and K. Thilagavathy*, (2004), S. Chand &Company Ltd, New Delhi.

3. TRIGONOMETRY, *S. Narayanan and T. K. Manickavachagom Pillay,* (2004),

S.Viswanathan Printers & Publishers Pvt. Ltd, Chennai.

REFERENCES:
1. ALGEBRA, *S. Arumugam,* (2003), New Gamma Publishing House.
2. ALGEBRA AND TRIGONOMETRY, Vol. I & II, Meenakshi Agency.

SEMESTER   I

Main Practical I	Computational Laboratory I	Code : U5MSPR11

List of Exercises

1. Finding the roots of polynomial equations
2. Finding sum of infinite series
3. Matrix manipulations
4. Rank of a matrix
5. Evaluation of Determinant
6. Finding Eigen values
7. Finding Eigen vectors

REFERENCES:

MATLAB MANUAL

Allied Paper I	NUMERICAL METHODS – I	Code : U5MSAL11

Objectives: This course covers the basic method for forming difference table, essence of interpolation techniques, solving algebraic equations and system of linear equations.

UNIT – I: FINITE DIFFERENCES AND OPERATORS

First and Higher order differences – Forward and Backward difference – Properties of operators – Difference of a polynomial – Factorial polynomials – Operator E–Relation between Δ, ∇ and E.

UNIT – II: INTERPOLATION FOR EQUAL INTERVALS

Newton Gregory Forward and Backward interpolation formulae – Guass forward and backward difference formulae – Stirling's formula – Bessel's formula – Problems based on them.

UNIT – III: INTERPOLATION FOR UNEQUAL INTERVALS

Divided differences – Newton's divided differences formula and Lagrange's formula – Estimating the missing terms (with one or two missing values)

UNIT – IV: INVERSE INTERPOLATION

Lagrange's method and Reversion of series method (Using Newton's forward formula only) – Summation of series – Sum to n terms of the series whose general term is the first difference of a function

UNIT –V: SOLUTIONS OF SMULTANIOUS LINEAR EQUATIONS

Guass Elimination method – Matrix inversion method, Guass Jordon method – Gauss Seidal Method (upto three unknowns only)

RECOMMENDED TEXT:

NUMERICAL ANALYSIS, *B. D. Gupta*, (2001), Konark Pub. Ltd., Delhi.

REFERENCES:

1. FINITE DIFFERENCES AND NUMERICAL ANALYSIS, *H. C. Saxena*, (1991), S. Chand & Co Ltd., New Delhi.
2. CALCULUS OF FINITE DIFFERENCES AND NUMERICAL ANALYSIS, P.*Kandasamy, K. Thilagavathy,* (2003), S. Chand & Co Ltd., New Delhi.

Allied Practical I	Problem Solving Techniques I	Code : U5MSAP11

List of Exercises

1. Computing expressions
2. Operations on Vectors
3. Operations on Sets
4. Permutation and Combinations
5. Differential Calculus

REFERENCES:

MATLAB MANUAL

SEMESTER II

Paper II	CALCULUS AND SOLID GEOMETRY	Code : U5MS2001

Objectives: The course introduces students to the fundamental principles, concepts and knowledge in the areas of Differential, Integral Calculus and Analytical Geometry of Three Dimensions. This prepares the students to apply these fundamental concepts and working knowledge to other courses.

UNIT – I Differential Calculus

n^{th} Derivative – Leibnitz's theorem (without Proof) and   its application –Jacobians– Total Differentiation – Maxima and Minima functions of two and three independent variable –Lagrange's method (without proof), problems.

UNIT – II Applications of Differential Calculus

Curvature, Radius of Curvature in Cartesian and Polar coordinates – p–r equation – Evolutes and Envelopes – Asymptotes: Methods (without proof) of finding Asymptotes of rational algebraic curves with special cases.

UNIT – III   Integral Calculus – I

Integration – Definite integral – Properties of definite integrals – Method of integration – integral of functions involving $a^2 \pm X^2$ - integral of function of the form

$\int \{f(x)\}^n \ f'(x)dx$ and $\int F[f(x)] \ f'(x)dx$ - Integration of rational algebraic Functions – integration of irrational functions.

UNIT – IV   Integral Calculus – II

Integration by Parts – Reduction formula – Bernoulli's formula – Double and triple integrals – Transformation of coordinates – Cylindrical polar coordinates – Change of order of integration – Application of multiple integrals – Beta and Gamma functions– Relation between Gamma and Beta function.

UNIT – V Analytical Geometry

Planes and Straight lines – Symmetrical form of straight line, Coplanar lines, Skew lines, intersection of a plane and a line – Sphere: Section of a sphere by a plane – Tangent plane– Orthogonal Spheres – Cone : Equation of cone – Cone whose vertex is at the origin – Quadratic Cone with the vertex at the origin – Right circular cone.

RECOMMENDED TEXTS:

1. CALCULUS, *S. Narayanan and T. K. ManickavachagomPillay,* (2004), S.Viswanathan Printers & Publishers, Chennai.

2. MATHEMATICS FOR B.SC. Vol. I, II, III & IV, *P. Kandasamy and K. Thilagavathy*, (2004), S. Chand & Co., Ltd, New Delhi.

3. ANALYTICAL   GEOMETRY   (TWO   AND   THREE   DIMENSIONS), T.K.ManickavachagomPillay& *others,* (2007), S.Viswanathan Printers & Publishers, Chennai.

REFERENCES:

1. DIFFERENTIAL CALCULUS, *Shanti Narayan,* (2001), S. Chand & Co., New Delhi.

2. CALCULUS AND ANALYTICAL GEOMETRY, *G. B. Thomas and R. L. Finney*, (1998), Addison Wesley (9th Edition).

3. ANALYTICAL   GEOMETRY   (TWO   AND   THREE   DIMENSIONS), *P. Duraipandiyan and Laxmi Duraipandiyan,* Asia Publishing Company.

Main Practical II	Computational Laboratory II	Code : U5MSPR21

List of Exercises

1. Differentiation

2. Finding Maxima and minima of functions of two and three variables

3. Jacobians

4. Radius of curvature

5. Plotting Straight lines, planes, sphere and cone

6. Visualization of intersection of Plane and Line; Sphere and plane.

REFERENCES:

MATLAB MANUAL

SEMESTER II

Allied Paper II	NUMERICAL METHODS – II	Code : U5MSAL21

Objectives: This course will cover advanced methods for numerical differentiation, numerical integration and numerical solution of ordinary differential equations.

UNIT – I: NUMERICAL DIFFERENTIATION
Newton's forward and backward differences to compute the derivatives – Derivative using divided difference formula – Maxima and Minima using the above formulae

UNIT –II: NUMERICAL INTEGRATION
General Quadrature formula – Trapeziodal rule – Simpson's 1/3 rd rule – Simpson's 3/8th rule – Weddle's rule

UNIT –III: DIFFERENCE EQUATIONS
Linear difference equations – Linear homogeneous difference equation with constants coefficient – Particular integrals of the form $a^x, x^m sinax, x^m cosax$.

UNIT –IV: SOLUTION OF ALGEBRAIC AND TRANSCENDENTAL EQUATIONS

Bisection method– Iteration method – Regula falsi method– Newton Raphson's method

UNIT –V: NUMERICAL SOLUTIONS OF ORDINARY DIFFERNTIAL EQUATIONS

Euler's method – Modified Euler's method – Picard's method – Taylor's method – Runge Kutta methods

RECOMMENDED TEXT:

NUMERICAL ANALYSIS, *B. D. Gupta*, (2001), Konark Pub. Ltd., Delhi
REFERENCES:

FINITE DIFFERENCE AND NUMERICAL ANALYSIS, *H.C. Saxena*, (1991), S. Chand & Co. Delhi.

SEMESTER   II

Allied Practical II	Problem Solving Techniques II	Code : U5MSAP21

List of Exercises

1. Matrices Manipulations
2. Testing Consistency of System of Equations
3. Integration
4. Applications of Integration to Area and volume
5. Plotting of 2D and 3D objects.

REFERENCES:

MATLAB MANUAL

DEPARTMENT OF PHYSICS

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

									MAX. MARKS		
									B.Sc PHYSICS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami I/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5PY1001	Main	CC01	Properties of Matter and Acoustics	5	5	3	25	75	100
	CC	U5PYPR11	Main Pract.	CC02	Main Practical I	4	3	3	25	75	100
	CC	U5PYAL11	Allied	CC03	Chemistry I	7	6	3	25	75	100
	EC	U5PYAP11	Allied Pract.	EC03	Chemistry Practical I	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5PY2001	Main	CC04	Thermal Physics	5	5	3	25	75	100
	CC	U5PYPR21	Main Pract.	CC05	Main Practical II	4	3	3	25	75	100
	CC	U5PYAL21	Allied	CC06	Chemistry II	7	6	3	25	75	100
	EC	U5PYAP21	Allied Pract.	EC06	Chemistry Practical II	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

CORE PAPER I
(For students admitted during the academic year 2015-16)

PROPERTIES OF MATTER AND ACOUSTICS

COURSE CODE: U5PY1001

Objective: It is aimed at exposing the undergraduate students to study the physical properties of materials and fundamentals of acoustics

Unit I -Elasticity

Hooke's law – Modulus of Elasticity – Relation between elastic constants – Poisson's Ratio–Expression for Poisson's ratio in terms of elastic constants – Work done in stretching and work done in twisting a wire – Torsional pendulum (with & without masses) – Bending of beams - Expression for bending moment – Cantilever – Expression for depression at the loaded end - oscillations of a Cantilever – Expression for time period- Determination of young's modulus by Koenig's method – Uniform bending

Unit II – Viscosity and Low Pressure

Newton's law- Poiseuille's flow – Stokes flow – Rotation Viscosmeter - Comparison of viscosity of two liquids using Ostwald's Viscometer – Meyer's formula for Viscosity of gas – Rankine's method – Effect of temperature and pressure on viscosity - Rotary pump – Knudsen absolute gauge – Pirani gauge – Detection of leakage.

Unit III - Surface Tension

Molecular interpretation - Surface energy – Pressure difference across curved surface – Excess of pressure in liquid drops and air bubbles – Shapes of liquid meniscus in capillary tube – Angle of contact – Variation of Surface tension with temperature – Jaegar's method – Drop weight method- Vapour pressure over flat and curved surfaces

Unit IV - Waves and oscillations

Simple harmonic motion – Free, damped, forced vibrations and resonance – Velocity of Transverse wave in a stretched string – Energy in wave motion – Superposition of waves – Interference, reflection and transmission of wave – Sound waves in gases – Organ pipes -Beats – Doppler effect.

Unit V – Ultrasonics and Acoustics
Ultrasonic waves – Piezo-electric effect - Piezoelectric generator - Magnetostriction Oscillator – Detection and applications of Ultrasonics – Acoustics – Reverberation time and its measurements - Sabine's formula - Absorption coefficient and its determination –

Conditions for good acoustical design of auditorium – Noise and its measurements - Noise reduction

Books for study
1. Properties of matter by Murugeshan R, S Chand & Co. Pvt. Ltd., New Delhi
2. Properties of matter by Brij Lal & Subramaniam, N Eurasia publishing Co., New Delhi, 1989
3. Text book of sound by Brij Lal & Subramaniam, N Vikas Publishing House, New Delhi, 1982
4. Text book of sound by M N Srinivasan – Himalaya Publications (1991)
5. Science and technology of Ultrasonics by Bladevraj, Narosa (2004)

Books for Reference
1. Elements of Properties of Matter by Mathur D S, Shyamlal Charitable Trust, New Delhi, 1993
2. Fundamentals of General Properties of Matter by Gulati H R, R Chand & Co. New Delhi, 1982
3. Waves & Oscillations by Subrahmanyam N & Brij Lal, Vikas Publishing House Pvt. Ltd., New Delhi, 1994
4. A Textbook of Sound by Khanna D R & Bedi R S, atma Ram & Sons, New Delhi 1985
5. Fundamentals of Physics, 6th Edition by D Halliday, R Resnick and J Walker, Wiley NY 2001.

I B.Sc- Main Practical- I

COURSE CODE: U5PYPR11

Objective: It is aimed at exposing the under graduate students to the technique of handling simple measuring instruments and also make them measure certain mechanical and thermal properties of matter.

List of Experiments (All ten experiments compulsory)

1. Young's modulus – non uniform bending – pin and microscope.
2. Young's modulus – non uniform bending – optic lever – Scale and Telescope.
3. Surface tension and interfacial surface tension – by drop weight method.
4. Sonometer – frequency of a tuning fork.
5. Sonometer – Determination of AC frequency Using steel wire (Electromagnet)
6. Specific heat capacity of a liquid – Method of mixtures.
7. Focal length of convex lens.
8. Spectrometer – Hollow prism - μ of a liquid.
9. Potentiometer – Calibration of low range voltmeter.
10. Characteristic of Junction diode

Books for Reference

1. M.N. Srinivasan, S. Balasubramanian, R. Ranganathan,A Textbook of practical Physics, Sultan Chand & Sons
2. C.C Ouseph, G. Rangarajan, R. Balakrishnan- A Textbook of practical Physics- S. Viswanathan Publisher-PartII (1996)

CLASS: I B.Sc CHEMISTRY

COURSE CODE: U5CHAL11

Objective: This paper is offered to the students of mathematics, Chemistry and Computer Science as allied Subjects. The logical reasoning behind the description of the physics problem and obtaining the solution to such problems are taught in this paper.

UNIT I - PROPERTIES OF MATTER (2 Hrs)

Elasticity: Hooke's law-Elastic constants – bending of beam – Bending moment – cantilever Depression at the loaded end of a cantilever – determination of Young's modulus by non-uniform bending.

Torsion: Torsion couple – Potential energy in a twisted wire – Torsional pendulum – Time period – Rigidity Modulus – Determination of rigidity modulus by Torsional oscillation (without masses) .

Viscosity: viscosity of a liquid – Viscous force – Co–efficient of viscosity of a liquid – comparison of viscosities of two liquids by graduated burette method.

Surface Tension: Surface Tension –interfacial tension – determination of surface tension and interfacial tension by the method of drops.

UNIT II – Heat (1 Hrs)

Specific heat – Callender's Barne's method to determine the specific heat of a liquid – Newton's law of cooling – determination of specific heat of a liquid using Newton's law of cooling – Emissivity and Emissive power- Kirchoff's laws of radiation

UNIT – III – Electricity and Magnetism (2 Hrs)

Electricity: Potentiometer – Principle – Calibration of low range voltmeter - Measurement of internal resistance of cell – measurement of an unknown resistance-Capacitance of a conductor - Capacitance of spherical and parallel plate capacitor – energy of a charge capacitor - Loss of energy due to sharing of charges

Magnetic effect of electric current: Biot- Savart law – Magnetic flux- Magnetic Induction at a point due to a straight conductor carrying current –Moving coil ballistic galvanometer.

Magnetism –Moment and pole strength of a magnet – Deflection magnetometer – Tan C position – Vibration magnetometer – Theory – period of oscillation

UNIT IV- SOUND AND ACOUSTICS OF BUILDING (1 Hrs)

Sound: Transverse vibration of strings – Vibration of strings – Velocity and frequency of vibrations of a stretched string – laws of vibrations along a stretched string – sonometer – A.C. Frequency - Steel wire – Brass wire. Ultrasonics – Production by Piezo – electric method – properties and uses

Acoustics of buildings: Reverberation – Reverberation time – Sabine's formula [definition only] – Sound absorption co-efficient of surface – conditions for the perfect acoustics.

UNIT V- OPTICS (1 Hrs)

Physical Optics: Interference –Air Wedge –description - Determination of diameter of a thin wire by air wedge.

Diffraction: Theory of transmission grating – Normal Incidence – Determination of Wavelength of monochromatic source and Wavelength of mercury lines using a grating by normal Incidence.

Polarisation: Optical activity –specific rotatory power – Polarimeter – Determination of specific rotatory power of a solution using the polarimeter.

Books for study:

1. Allied Physics **–** R. Murugesan S. Chand & Co. First Edition (2005)
2. Allied Physics - Dr. K. Thangaraj, Dr. D. Jayaraman Popular Book department, Chennai.
3. Allied Physics – Prof. Dhanalakshmi and others.
4. Elements of Properties of Matter – D.S Mathur, S. Chand & Co. (1999).
5. Heat and Thermodynamics   - N. Brijlal and Subramaniam S. Chand & Co.
6. A text book of Sound – by M. Narayanamoorthy and other National Publishing companies (1986).

Books for Reference:

1. Modern Physics –R. Murugesan S. Chand & Co.(2004)
2. Electronic Principles and applications – A. B. Bhattacharya, New Central Book Agency, Culcutta.
3. Introduction to Solid state Physics – C. Kittel, 5th Edition Wiley Eastern Ltd.
4. Renewable & sustainable energy sources – Agarwal.
5. Introduction to Fiber optics by K. Thyagarajan and Ajay Ghatak, Cambridge, University Press (1999)

Semester I

Allied Practical Physics Paper-I

CLASS: I B.Sc CHEMISTRY

COURSE CODE: U5CHAP11

Objective: It is aimed at exposing the Allied students to the technique of handling simple measuring instruments and also makes them measure certain mechanical and thermal properties of matter.

List of Experiments (All ten experiments compulsory)

1. Young's Modulus – Non-uniform bending method using Pin and Microscope.
2. Rigidity Modulus – Torsional oscillation method (without symmetric masses)
3. Surface tension and interfacial surface tension – by drop weight method.
4. Determination of Co-efficient of viscosity – Graduated Burette.
5. Specific heat capacity of a liquid – Method of mixtures.
6. Sonometer — Determination of frequency of tuning fork (Screw Gauge is given)
7. Newton's Rings – Radius of curvature of the convex lens.
8. Spectrometer- Refractive index of a glass prim (minimum deviation)
9. Potentiometer – calibration of low range voltmeter.
10. Determination of M and B_H using Deflection magnetometer in Tan C position and vibration magnetometer.

Books for Reference

1. M.N. Srinivasan, S. Balasubramanian, R. Ranganathan,A Textbook of practical Physics, Sultan Chand & Sons
2. C.C Ouseph, G. Rangarajan, R. Balakrishnan- A Textbook of practical Physics- S. Viswanathan Publisher-PartII (1996)

SEMESTER II – CORE PAPER II

THERMAL PHYSICS

COURSE CODE: U5PY2001

Objective: This paper aims to impart the understanding of heat flow, its related Phenomenon and the distribution of particles in systems

Unit I -Thermometry and Calorimetry

Platinum resistance thermometer - Callender & Griffith's bridge - Thermistor - Specific heat capacity of solids - Dulong & Petit's law - Specific heat capacity of liquid - method of mixtures - Barton's correction – Newton's law of cooling and verification - Specific heat of capacity of gases – Meyar's relation - C_p and C_v by Regnault's and Callender and Barne's methods

Unit II -Thermodynamics

Zeroth law of thermodynamics-First law of thermodynamics - Heat engines - petrol and diesel engines - reversible and irreversible processes - second law of thermodynamics - thermodynamic scale of temperature - entropy- change of entropy in reversible and irreversible processes - temperature - entropy diagram - third law of thermodynamics - Maxwell's thermo dynamical relations - derivation - Clausius - Clapeyran equation - Specific heat relation.

Unit III - Low temperature Physics

Joule Kelvin effect – Liquefaction of hydrogen- Liquefaction of helium – Kammerling and Onnes method – Helium I and II- Lambda point - Joule-Thomson effect - porous plug experiment: - liquefaction of gases –Production of low temperature by adiabatic demagnetisation - applications of low temperatures - refrigerating machines — Superconductors – Type I and Type II – Meissner effect – Super conducting magnets.

Unit IV -Conduction

Definition of thermal conductivity – Determination of K- Thermal diffusivity- Steady state - Forbes method- Thermal conductivity of a good conductor- Lee's disc method- thermal conductivity of bad conductor - thermal conductivity of rubber- Wiedmann Franz law.

Unit V -Radiation

Black body radiation - Wien's law, Rayleigh-Jean's law and Planck's law - Stefan's law - Determination of Stefan's constant - Newton's law of cooling from Stefan's law –

Planck's quantum theory of radiations- solar constant - solar energy- Angstrom pyroheliometer –Temperature of Sun- applications

Books for Study

1. Heat and Thermodynarnics - D.S.Mathur
2. Heat and Thermodynamics - Brij Lal and Subramaniam, S Chand & Co 16th Edition
3. Elementary statistics - Gupta and Kumar

Books for Reference

1. Heat and Thermodynamics - J. B. Rajam & C. L. Arora
2. Thermodynamics and statistical Physics - Sharma & Sarkar
3. Statistical Mechanics - Sathya Prakash & C.Agarwal
4. Fundamentals of Physics, 6th Edition, by D.Halliday, R.Resnick and J.Walker, Wiley, NY,   2001.
5. Thermal Physics, A.B. Gupta and H. Roy, Books and Allied (P) Ltd., (2002.)
6. Physics, 4th Edition, Vols I, II & II Extended by D.Halliday, R.Resnick and K.S.Krane, Wiley,   NY, 1994..
7. CRC Handbook of Physics & Chemistry, 80th Ed., CRS Press, NY, 1999.
8. The Feynman Lectures on Physics, VoIs. I, II, and III, by R P. Feynman, R B Leighton and M   Sands, Narosa, New Delhi, 1998.

SEMESTER-II

I B.Sc- Main Practical- II

COURSE CODE: U5PYPR21

Objective: It is aimed at exposing the under graduate students to the technique of handling simple measuring instruments and also make them measure certain mechanical and thermal properties of matter.

List of Experiments (All ten experiments compulsory)

1. Rigidity modulus – Torsional pendulum – without masses.
2. Rigidity modulus and moment of inertia – Torsional pendulum – with identical masses
3. Coefficient of viscosity of a liquid – graduated burette - Radius of capillary tube by mercury pellet method.
4. Specific heat capacity – Joules calorimeter
5. Specific heat capacity of a liquid – Newton's law of cooling.
6. Sonometer – Determination of AC frequency Using brass wire (Barmagnet)
7. Sonometer – Comparison of radii of the given wires.
8. Spectrometer – Refractive index of a glass prim (minimum deviation)
9. Post office box – temperature coefficient of resistance of the coil.
10. Unregulated and Zener regulated power supply. (full wave)

TEXT BOOKS:-

1. C.C Ouseph, G.Rangarajan- A Text Book of Practical Physics- S. Viswanathan Publisher-Part I (1990)

2. C.C Ouseph, C.Rangarajan, R.Balakrishnan- A Text Book of Practical Physics- S.ViswanathanPublisher-Part II (1996)

Books for Reference

1. S.L Gupta and V.Kumar- Practical Physics- Pragati Prakashan – 250th Edition (2002)
2. M.N. Srinivasan, S. Balasubramanian, R. Ranganathan,A Textbook of practical Physics, Sultan Chand & Sons

Semester II
ALLIED PAPER- II
ALLIED PHYSICS
CLASS: I B.Sc CHEMISTRY

COURSE CODE: U5CHAL21

Objective: This paper is offered to the students of mathematics, Chemistry and Computer Science as allied Subjects. The logical reasoning behind the description of the physics problem and obtaining the solution to such problems are taught in this paper.

Unit I - Atomic physics (2 Hrs)

Discovery of cathode Rays- Properties – Determination of e/m by Thomson's parabola method- Positive Rays – Discovery – Properties – Dempster's mass Spectrograph

Atom model - vector Atom model- electron spin and spatial quantization - quantum numbers - Pauli's exclusion principle - excitation and ionization potentials- experimental determination-Franck and Hertz method

Unit II - Nuclear Physics (2 Hrs)

Particle Accelerator- Linear accelerator, cyclotron – Particle detectors – GM counter – Transmutation – Types – The Q value equation for a nuclear reaction – Types of nuclear reaction – Basic concepts of fission and fusion – Nuclear reactor – Harmful effects of nuclear radiation - Prevention. Discovery of cosmic rays – Latitude effect – The east west effect – Altitude effect- primary cosmic rays – secondary cosmic rays – cosmic rays showers – Discovery of Positrons – The mesons – origin of cosmic rays

Unit III –Electromagnetism and Transient current (1 Hr)

Faraday's laws of electromagnetic induction - vector form – Lenz's law – self and mutual inductance – Determination of coefficient of self inductance – Rayleigh's method – Induction coil – Growth and Decay of current in LR circuit – Growth and Decay of charge in RC circuit – Determination of High Resistance by Leakage method.

Unit IV - Crystallography and Fibre Optics (1 Hr)

Types of Solids - Crystalline - and amorphous - Crystalline matter - Periodic Array of Atoms - The crystal structure - Unit cell - Miller indices – Determination - Bragg's law. Types of bonding in crystal-Principle and propagation of light within the fiber - classification of optical fiber - fiber optic communication system block diagram.

Unit V – Electronics (1 Hr)

Basic Electronics: Junction Diode - LED - Zener diode - voltage regulator - Junction transistor - Characteristics of Transistor - common base - common emitter mode

Digital electronics: AND, OR, NOT gates - construction using diodes and transistors - NAND and NOR gates - Universal building Blocks. Boolean algebra - Demorgan's theorem – verification

Books for study:

1. Allied Physics by Dr.R.Sabesan and Dr.Mrs.Dhanalakshmi
2. Allied Physics by Mr. Kamalakkannan and Jayraman.
3. Text book of optics by Brijal and Subramanian
4. Modern Physics by R. Murugeshan S.Chand & Co.

Books for Reference:

1. Physics, 4th Edition, Vols I, II & II Extended by D.Halliday, R.Resnick and K.S.Krane, Wiley, NY, 1994.
2. Digital Principles and Application - Malvino & Leach.
3. Basic Electronics, 6th Edition by B. Grob, McGraw- Hill, NY, 1989.

Semester II
Allied Physics Practical -II
CLASS: I B.Sc CHEMISTRY
COURSE CODE: U5CHAP21

Objective: It is aimed at exposing the Allied students to the technique of handling simple measuring instruments and also makes them measure certain mechanical and thermalproperties of matter

List of Experiments (All ten experiments compulsory)

1. Young's Modulus – Non-uniform bending method using Scale and Telescope.
2. Rigidity Modulus – Torsional oscillation method (with symmetric masses)
3. Specific heat capacity of a liquid – by Newton's law of cooling
4. Sonometer – Determination of AC frequency Using steel wire (Electromagnet)
5. Spectrometer Grating – Normal incidence – Wavelength of mercury spectral lines.
6. Potentiometer – calibration of low range ammeter.
7. Figure of merit –Current Sensitiveness and voltage sensitiveness of a galvanometer.
8. Construction of AND, OR gates using diodes and NOT by transistors.
9. Characteristics of Zener diode.
10. Verification of Demorgan's Theorem.

Books for Reference

1. M.N. Srinivasan, S. Balasubramanian, R. Ranganathan,A Textbook of practical Physics, Sultan Chand & Sons
2. C.C Ouseph, G. Rangarajan, R. Balakrishnan- A Textbook of practical Physics-S. Viswanathan Publisher-PartII (1996)

DEPARTMENT OF CHEMISTRY

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

B.Sc CHEMISTRY

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
									MAX. MARKS		
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5CH1001	Main	CC01	General Chemistry I	7	7	3	25	75	100
	CC	U5CHPR11	Main Pract.	CC02	Volumetric Estimation I	2	1	3	25	75	100
	CC	U5CHAL11	Allied	CC03	Allied Physics I	7	6	3	25	75	100
	EC	U5CHAP11	Allied Pract.	EC03	Allied Physics Practical I	2	1	3	25	75	100
			TOTAL			30	25	-	175	525	700

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
									MAX. MARKS		
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5CH2001	Main	CC04	General Chemistry II	7	7	3	25	75	100
	CC	U5CHPR21	Main Pract.	CC05	Volumetric Estimation II	2	1	3	25	75	100
	CC	U5CHAL21	Allied	CC06	Allied Physics II	7	6	3	25	75	100
	EC	U5CHAP21	Allied Pract.	EC06	Allied Physics Practical II	2	1	3	25	75	100
			TOTAL			30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

I SEMESTER
CORE PAPER – I
General Chemistry – I
COURSE CODE: U5CH1001

OBJECTIVE: 105 Hours

Basic concepts regarding atomic structure, periodic properties, bonding concepts, quantum chemistry, solids, liquids, gases, hydrocarbons, nomenclature, reactions, principles of volumetric analysis derivation of equations, related problems, and applications wherever necessary are to be taught for I-Semester.

UNIT – 1 21 Hours

1.1 Atomic structure – Quantum number n, l, m and s – Pauli exclusion principle – Energy distribution and orbitals – Hund's rule of maximum multiplicity – Aufbau's Principle – Electronic configurations of elements – Stability of half – filled and completely filled orbitals.

1.2 s, p, d and f block elements – Classification and characteristic properties – Periodicity of properties – Definition and periodicity of the following properties – Atomic radii – factors affecting atomic radii – Ionic radii – factors affecting ionic radii.

1.3 Ionization potential – factors affecting ionization potential – Electron affinity – factors affecting electron affinity – Electronegativity – factors affecting electronegativity – Pauling scale – Mulliken electro negativity scale – Alfred and Rochow scale – Diagonal relationship with examples – Summary of horizontal, vertical and diagonal relationships in the periodic table.

UNIT – II 21 Hours

2.1 Classification of organic compounds – Nomenclature of organic compounds –Functional groups – Homologous series – IUPAC recommendations for naming simple aliphatic – Alicyclic and aromatic compounds – Polyfunctional compounds – Heterocyclic compounds.

2.2 Basic concepts of bonding in organic chemistry – Hybridisation – tetravalency of carbon – geometry of molecules – methane, ethane, ethylene,

acetylene and benzene – Factors affecting covalent bond. Electron displacement affects – inductive –mesomeric – electromeric – resonance – hyperconjugation and steric effects.

2.3 Alkanes – Methods of preparation of alkanes – Physcial and chemical properties of alkanes – Mechanism of free radical substitution in alkanes - Alkenes – Properties of alkenes – Electrophilic and Free radical addition.

UNIT – III   21 Hours

3.1 Quantum chemistry – Quantum theory of radiation – Planck's theory – Photoelectric effect - Compton effect – Wave mechanical concept of the atom – de Broglie's relationship – wave nature of electron – Heisenberg's uncertainty principle – Schrodinger wave equation [without derivation] – Significance of wave functions, ψ and ψ^2 – probability distribution of electrons – radial probability distribution curves.

3.2 Gaseous state – Kinetic gas equation – derivation – Gas laws from the kinetic gas equation – kinds of velocities – mean, RMS and most probable velocities – calculation of molecular velocities – transport properties-viscosity – thermal conductivity – diffusion.

3.3 Maxwell's distribution of molecular velocities [no derivation] – Effect of temperature on velocity distribution – equipartition of energy – heat capacity on molecular basis - Virial equation of state - Boyle temperature – coefficient of compressibility and thermal expansion.

UNIT – IV   21 Hours

4.1 Definitions of molarity – normality – molality and mole fraction – their calculations – definition and examples for primary and secondary standards. Calculation of equivalent weights

4.2 Addition reactions of alkenes with hydrogen and halogens - Mechanism – hydrogen halide [Markownikoff's rule] and Mechanism – hydrogen bromide [peroxide effect] and Mechanism – sulphuric acid – water and Mechanism – hydroboration – ozonolysis – hydroxylation with $KMnO_4$ – allylic substitution by NBS - Epoxidation and Mechanism – Oxidation – reduction – Self-addition or polymerization – Detection of C=C bond.

4.3 Liquid crystals – classification and molecular arrangements – liquid state – density – diffusion – Viscosity – evaporation. Surface tension – effect of

temperature on surface tension – parachor – definition and applications only – Coefficient of viscosity – effect of temperature – effect of pressure

UNIT – V   21 Hours

5.1   Theories of acid-base – redox – complexometric, iodimetric and iodometric titirations. Theories of indicators – acid-base – redox – metal ion and adsorption indicators and choice of indicators.

5.2   Types of organic reactions – Cleavage of bonds - Homolytic and Heterolytic fission of carbon-carbon bond – Methods for determining reaction mechanism – Reaction intermediates – Structure and stability of Carbocations – Carbanions and Free radicals.

5.3   Solid State – Crystal lattices – Laws of crystallography – Elements of symmetry – crystal systems – unit cell – space lattice – Bravis's lattices – structure of NaCl - structure of CsCl – Miller's indices.

Text Books:

- ❖ Text book of Organic Chemistry by Arun Bahl & B.S. Bahl - S.Chand.
- ❖ Text book of Inorganic Chemistry by P.L. Soni – S. Chand.
- ❖ Principles of Physical Chemistry by Puri, Sharma – Vishal Publication.
- ❖ Advanced Organic Chemistry by Morrison & Boyd.
- ❖ Text book of Inorganic Chemistry by R.D. Madan

Reference Book

- ❖ Advance Organic Chemistry by I.L. Finor.
- ❖ Advance Inorganic Chemistry by J. D. Lee.
- ❖ Physical Chemistry by Rajaram Kuriakose.

Core Practical - I
SEMESTER – 1
COURSE CODE: U5CHPR11
VOLUMETRIC ESTIMATION - I

30 Hours

Objective: To learn the practical techniques of Acidimetry, Iodimetry & Iodometry.

ACIDIMETRY

1. Estimation of **B**orax – Standard Sodium Carbonate.
2. Estimation of Sodium Hydroxide – Standard Sodium Carbonate.

IODIMETRY

3. Estimation of Arsenious oxide.

IODOMETRY

4. Estimation of Copper – Standard Copper Sulphate.
5. Estimation of Potassium dichromate – Standard Potassium dichromate.

Students must write short procedure for the given estimation in ten minutes during the examinations and submit the paper for evaluation.

Reference Book:

1. Inorganic Quantitative Analysis by Vogel.

Marks 75

1. Short procedure   10 Marks
2. Titration 1   15 Marks
3. Titration 2   15 Marks
4. Result   20 Marks
5. Record   10 Marks
6. Viva-voce   05 Marks

Error Calculation:

< 2%	-	20 Marks
2 – 3%	-	15 Marks
3 – 4%	-	10 Marks
>4%	-	05 Marks

I SEMESTER

ALLIED CHEMISTRY - I
(for I year B.Sc. Physics & Bio-Chemistry)
Paper – I

COURSE CODE FOR PHYSICS U5PYAL11
COURSE CODE FOR BIOCHEMISTRY U5BIAL11

105 Hours

Objective: To learn the concepts of organic inorganic and physical chemistry.

UNIT – I   **21 Hours**

1.1   Extraction of Metals. Mineral and ore difference – Minerals of Iron, Aluminum and Copper – Ore Dressing or Concentration of Ore – Types of Ore Dressing Froth Floatation and Magnetic separation.

1.2   Refining of Metals – Types of Refining – Electrolytic, Van Arkel and Zone Refining. Extraction of Uranium and Thorium.

1.3   Periodic properties – ionization potential, electron affinity and electro negativity – variation in the periodic table.

UNIT – II   **21 Hours**

2.1   Aromaticity – Conditions – Huckel's rule – aromaticity of benzene.

2.2   Cyclo-alkanes preparation properties of Cyclohexane – Bayers strain theory. Polarization – Inductive effect, mesomeric effect and steric effect - [Acid and Base strength]

2.3   Stereo isomerism – Types, Causes of optical activity of Lactic acid and tartaric acid – Racemisation – Resolution – Geometrical isomerism – maleic and fumaric acid.

UNIT – III   **21 Hours**

3.1   Chemical Kinetics – Distinction between Order and Molecularity – derivation of First order rate equation – half life period of first order reaction – determination of rate constant of hydrolysis of ester.

3.2 Catalysis – catalyst – auto catalyst – enzyme catalyst – Promoters – catalytic poisoning – Active center – Distinction between homogeneous and heterogeneous catalysts – Industrial application of catalysts.

3.3 Photochemistry – Grothus Drapers law, Stark Einsteine's law – quantum yield – Photosynthesis, phosphorescence – fluorescence – chemiluminescence – photosensitization.

UNIT – IV   21 Hours

4.1 VSEPR Theory – Shapes of simple Molecules BF_3, PCl_5 SF_6 and XeF_6.

4.2 Naphthalene – Preparations, Properties and uses of Naphthalene – Structure of Naphthalene.

4.3 Phase Rule: Phase, Component, Degree of freedom, Phase Rule – Definition. One component system – Water system Osmosis - Osmotic pressure – reverse osmosis – desalination of sea water

UNIT – V   21 Hours

5.1 Nuclear Chemistry – Definition of Half life period – Group displacement law – Radioactive series. Nuclear Fission and Fusion – Applications of nuclear Chemistry in Medicine, agriculture and industries – C^{14} dating

5.2 Crude Oil – Petroleum – Petroleum Refining - Cracking – Applications of Cracking. Fuels – Calorific value of fuels – Non-conventional fuels – need of solar energy – Applications – Bio-fuels.

5.3 Elements of symmetry – unit cell – crystal lattice – types of cubic lattice – one example for each.

Text Book:

- Allied Chemistry by Dr. S. Sundaram
- Allied Chemistry by Gopalan

Reference Book

- Advance Organic Chemistry by Bahl and Arun Bahl. 19th Edition., 2005 - Sulthan Chand company, New Delhi.

- Principles of Inorganic Chemistry by B.R. Puri and L.R. Sharma. Shoban Lal Nagin Chand and Co. New Delhi 2000.
- Principles of Physical Chemistry by B.R. Puri, L.R. Sharma and S. Pathania. Shoban Lal Nagin Chand and Co. New Delhi 2001.

SEMESTER – 1

ALLIED CHEMISTRY PRACTICAL I
(for I year B.Sc. Physics & Bio-Chemistry)

COURSE CODE FOR PHYSICS U5PYAP11
COURSE CODE FOR BIOCHEMISTRY U5BIAP11

Objective: to learn the techniques of Volumetric Analysis   30 Hours

VOLUMETRIC ANALYSIS 1

1. Estimation of hydrochloric acid using std. Sulphuric acid.
2. Estimation of Borax using std. Sodium carbonate.
3. Estimation of $FeSO_4$ using Std. Mohr Salt Solution.
4. Estimation of Oxalic acid using Std. $KMnO_4$ Solution.
5. Estimation of $K_2Cr_2O_7$ using Std. $K_2Cr_2O_7$.
6. Estimation of Copper using Std. Copper Sulphate.

Reference Book:

1. Inorganic Quantitative Analysis by Vogel.

Practical Book:

2. Practical Book by Thomas.

Marks 75

1. Short procedure   10 Marks
2. Titration 1   15 Marks
3. Titration 2   15 Marks
4. Result   20 Marks

| 5. | Record | 10 Marks |
| 6. | Viva-voce | 05 Marks |

II SEMESTER

CORE PAPER – II
General Chemistry – II

COURSE CODE: U5CH2001

OBJECTIVES: **105 Hours**

Basic concepts regarding ionic bond, covalent bond, MO theory, cyclo alkanes, dienes, thermochemistry, thermodynamics, derivation of equations, related problems, s-block elements, group study, polymerisation, mechanism and applications.

UNIT – I   **21 Hours**

5.3 Ionic bond – Electronic theory of valence – Conditions for the formation of ionic bond – General properties - Radius ratio rule and its limitations – Energetics of formation of NaCl form Na and Cl – Hydration energy and lattice energy and their applications – Born - Haber cycle. Fajan's rules – Characteristics of electrovalent compounds – Valence bond theory – Conditions for the formation of covalent bond – General properties – Polarity of bonds – Orbital overlap - Bond lengths and bond energies – hybridization – sigma and pi bonds.

5.4 VSEPR theory geometries of BO_3^{3-}, NH_4^+, ClF_3, PCl_5, IF_7, and XeF_6 molecules – partial ionic character of covalent bond – percentage of ionic character.

1.3 Molecular Orbital theory – Bonding, anti-bonding orbitals – Relative order of energies of molecular orbitals – MO diagrams of H_2, He_2, N_2, O_2, O_2^+, O_2^- and CO – Bond order – stability and magnetic property of the molecules – Comparison of VB and MO theories.

UNIT – II   21 Hours

2.1   Alkynes – Acidity of alkynes – Addition of hydrogen – Hydroboration – Hydrohalogenation – Addition of hypohalous acid - Hydration – addition of water with $HgSO_4$ catalyst – Addition of alcohols and carboxylic acids.

2.2   Formation of acetylides – alkylation of alkynes with mechanism – oxidation with $KMnO_4$ – ozonolysis – Polymerisation to benzene – Oxidative coupling – Isomerization.

2.3   Cycloalkanes – preparation using Wurtz's reaction – Dieckmann's ring closure and reduction of aromatic hydrocarbons – Substitution and ring opening reactions.

UNIT – III   21 Hours

3.1   Thermodynamics – Definition and explanation of terms – System, boundary, surroundings – Homogeneous and heterogeneous system – Isolated system – Closed system – Open system – Intensive and extensive properties – State of a system – Independent state variables – Dependent state variables - Thermodynamic functions – State and path functions.

3.2   Thermodynamic processes – types of processes – cyclic – reversible – irreversible – isothermal – adiabatic. Exact and inexact differentials – Cyclic rule – concept of heat and work - Zeroth law of thermodynamics.

3.3   First law of thermodynamics – Statement and equation – relationship – Calculation of w, q, ΔE and ΔH for the expansion of ideal gases under reversible – isothermal and adiabatic conditions.

UNIT – IV   21 Hours

4.1   Alkali metals – Li, Na, K, Rb and Cs – Occurrence – Comparative study of elements – oxides, halides, hydroxides and carbonates – Exceptional property of Lithium – Diagonal relationship of Li with Mg.

4.2   1,2 and 1,4 additions with mechanism – Free radical addition – polymerization of dienes – Synthesis of dienes – 1,3 butadiene – Isoprene and chloroprene – Allenes.

4.2 Joule's law – Joule-Thomson effect – Joule-Thomson coefficient and its derivation – inversion temperature, its significance and its derivation.

5.5 Alkaline earth metals – Be, Mg, Ca, Sr and Ba – Occurrence – comparative study of the elements with respect to oxides, hydroxides, halides, sulphates and carbonates -   Exceptional property of Beryllium – Diagonal relationship of Be with Al – Comparison of alkaline earth metals with alkai metals – Magnesium resemblance with zinc.

5.6 Polymerisation – Types of polymerisation – mechanism of polymerisation - Distinction between addition and condensation polymerisation – free radical – Cationic and anionic polymerisations - addition polymers and condensation polymers with examples – thermoplastic and thermosetting polymers.

5.7 Thermochemistry – Heat of reaction – Exothermic and endothermic reaction – Calculation of ΔH from ΔE and vice versa – Thermochemical equations – bond dissociation energy – Calculation from thermochemical data - variation of heat of a reaction with temperature – Kirchoff's equation and its significance.

Text Book:

- ❖ Text book of Organic Chemistry by Arun Bahl & B.S. Bahl - S.Chand.
- ❖ Text book of Inorganic Chemistry by P.L. Soni – S. Chand.
- ❖ Principles of Physical Chemistry by Puri, Sharma – Vishal Publication.
- ❖ Advanced Organic Chemistry by Morrison & Boyd.
- ❖ Text book of Inorganic Chemistry by R.D. Madan

Reference Book

1. **Advance Organic Chemistry by I.L. Finor.**
2. **Advance Inorganic Chemistry by J.D. Lee.**
3. **Physical Chemistry by Rajaram Kuriakose.**

Core Practical – 2
SEMESTER – 2
VOLUMETRIC ESTIMATION – II
COURSE CODE: U5CHPR21

30 Hours

Objective: To learn the practical techniques of Complexometry, Dichrometry & Precipitation Titrations.

COMPLEXOMETRY:

1. Estimation of Magnesium using EDTA.
2. Estimation Zinc using EDTA.
3. Estimation of Nickel using EDTA.
4. Estimation of Calcium using EDTA.
5. Determination of total hardness.

DICHROMETRY

Estimation of ferrous iron using Diphenyl amine /N-Phenylanthranillic acid as indicator

PRECIPITATION TITRATION

6. Estimation of Chloride in neutral medium. [Demonstration – Experiment].
Students must write short procedure for the given estimation in ten minutes during the examinations and submit the paper for evaluation.

Reference Book:

1. Inorganic Quantitative Analysis by Vogel.

Marks 75

7. Short procedure   10 Marks
8. Titration 1   15 Marks
9. Titration 2   15 Marks
10. Result   20 Marks
11. Record   10 Marks
12. Viva-voce   05 Marks

Error Calculation:
< 2%   -   20 Marks
2 – 3%   -   15 Marks
3 – 4%   -   10 Marks
>4%   -   05 Marks

II SEMESTER

ALLIED CHEMISTRY-II   105 Hour
(for I year B.Sc. Physics & Bio-Chemistry)

COURSE CODE FOR PHYSICS U5PYAL21
COURSE CODE FOR BIOCHEMISTRY U5BIAL21

Objective: To learn concepts of organic inorganic and physical chemistry.

UNIT – I   **21 Hours**

1.1   Nomenclature of coordination compounds – Werner Theory of Coordination Compound – Chelation – Functions and structure of Haemoglobin and Chlorophyll.

1.2   Fertilizers and manures – Bio-fertilizers – Organic Manures and their importance – Role of NPK in plants – preparation and uses of Urea, Ammonium nitrate, potassium nitrate and super phosphate of lime.

1.3   Composition of Match sticks and match box – Industrial making of safety matches. Preparation and uses of chloroform, DDT, Gamhexane and Freon.

UNIT – II   **21 Hours**

2.1   Classification – Structure of glucose – Properties and uses of starch – uses of Cellulose Nitrate – Cellulose acetate.

2.2   Classification of Amino Acids – preparation and properties of Glycine – Classification of Protein based on physical properties and biological functions. Primary and Secondary structures of protein [Elementary Treatment only] composition of RNA and DNA and their biological role.

2.3   Substitution reaction – Nitration, halogenation, sulphonation and Fredal crafts alkylation of benzene.

UNIT – III   **21 Hours**

3.1   Specific and equivalent conductance – their determination – effect of dilution.

3.2   Kohlrauch's law – Determination of equivalent conductance of weak electrolyte – Conduct metric Titrations - HCl Vs NaOH and CH_3COOH Vs NaOH. Electrochemical corrosion and its prevention

3.3 P^H and its determination by indicator method – Buffer solutions – Buffer action – importance of buffer in the living system – Derivation of Henderson equation.

UNIT – IV   21 Hours

4.1   Paints – Pigments – Components of Paint – Requisites of a good paint. Colour and Dyes – Classification based on constitution and application

4.2   Biological activities and deficiency diseases of Vitamin A, B, C, D, E and K – Hormones – Functions of insulin and adrenalin

4.3   Chromatography – Principles and application of Column, paper and thin layer chromatography.

UNIT – V   21 Hours

5.1   Drugs - Sulpha Drugs – Uses and Mode of action of Sulpha Drugs – Antibiotics – Uses of Penicillin, Chloramphenicaol, Streptomycin. Drug abuse and their implication

5.2   General and Local Anaesthetics – Antiseptics – Example and their application. Definition and one example each for analgesics antipyretics, tranquilizers and sedatives - causes for diabetes, cancer and AIDS

5.3   Colloids - Types and classification of colloidal system, Lyophilic and Lyophobic Sols – Dialysis, Electro-dialysis, Ultrafiltration. Emulsion – types – preparation

References:

- Advance Organic Chemistry by Bahl and Arun Bahl. 19th Edition., 2005 - Sulthan and Chand company, New Delhi.
- Principles of Inorganic Chemistry by B.R. Puri and L.R. Sharma. Shoban Lal Nagin Chand and Co. New Delhi 2000.
- Principles of Physical Chemistry by B.R. Puri, L.R. Sharma and S. Pathania. Shoban Lal Nagin Chand and Co. New Delhi 2001.
- P.L. Soni – "Text book of inorganic Chemistry. S. Chand & Co., New Delhi 1999.

ALLIED CHEMISTRY PRACTICAL - II
(for I year B.Sc. Physics & Bio-Chemistry)
(Allied Chemistry Practical)

COURSE CODE FOR PHYSICS U5PYAP21
COURSE CODE FOR BIOCHEMISTRY U5BIAP21

30 Hours

Objective: To learn the techniques in Organic Analysis

ORGANIC ANALYSIS:

Reactions of aldehyde [aromatic], carbohydrate, carboxylic acid [mono and dicarboxylic], phenol, aromatic primary amine, amide and diamide Systematic analysis of organic compounds containing one functional group and characterisation by confirmatory tests

Reference Book:

1. Advance Practical Chemistry by R. Mukhopadhyay.

Practical Book:

1. Practical Book by Thomas.

Marks 75

1.	Procedure	20 Marks
2.	Elements	10 Marks
3.	Aromatic, Aliphatic	10 Marks
4.	Saturation & Unsaturation	10 Marks
5.	Functional Group	10 Marks
6.	Record	10 Marks
7.	Viva-voce	05Marks

DEPARTMENT OF BIOCHEMISTRY

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

									MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL

B.Sc BIOCHEMISTRY

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tamil I/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5BI1001	Main	CC01	Biological Macromolecules I	7	7	3	25	75	100
	CC	U5BIPR11	Main Pract.	CC02	Quantitative & Qualitative Analysis I	2	1	3	25	75	100
	CC	U5BIAL11	Allied	CC03	Allied Chemistry I	7	6	3	25	75	100
	EC	U5BIAP11	Allied Pract.	EC03	Allied Chemistry Practical I	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tamil II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5BI2001	Main	CC04	Biological Macromolecules II	7	7	3	25	75	100
	CC	U5BIPR21	Main Pract.	CC05	Quantitative & Qualitative Analysis II	2	1	3	25	75	100
	CC	U5BIAL21	Allied	CC06	Allied Chemistry II	7	6	3	25	75	100
	EC	U5BIAP21	Allied Pract.	EC06	Allied Chemistry Practical II	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

CORE PAPER I
COURSE CODE: U5BI1001
Biological Macromolecules– I

Objectives

To understand the structure, properties & functions of various biological macromolecules

UNIT –I Carbohydrates – I   **22Hrs**

Classifications of carbohydrates, isomerism exhibited by carbohydrates (DL, +/-, αβ, epimers), ring structure and mutarotation. Reactions of carbohydrates due to the presence of hydroxyl, aldehyde and ketone groups.Occurrence, Structure and Biological importance of monosaccharides, disaccharides

UNIT – II Carbohydrates – II   **22Hrs**

Polysaccharides - Starch, Glycogen, Cellulose, Chitin and Agar An introduction to mucopolysaccharidechoindroitinsulphate, dermatansulphate, keratin sulphate, hyaluronic acid, heparin, heparin sulphate, Proteoglycan, bacterial cell wall polysaccharides. Glycoproteins – blood group polysaccharides.

UNIT – III Amino acids   **20Hrs**

Standard amino acids – Classification, structure, physical and chemical properties, zwitter ions.Stereo and Optical isomerism, Essential and non-Essential & non-protein amino acids.Amino acids useful as drugs

UNIT –IV Proteins   **25Hrs**

Classification – IUPAC, function & nutritional.Structure of proteins-primary, secondary-, tertiary and quarternary (Peptide bond, α-helix, β-pleated sheets, collagen).Bonds responsible for protein structure.Biologically important peptides-structure and function (insulin, glutathione, vasopressin).Denaturation of proteins

UNIT –VPorphyrins   **16 Hrs**

Phorphyrin nucleus and classifications – important metalloporphyrins chlorophyll &heme.Bilepigments – chemical nature and physiological significance

TEXT BOOKS

1. Fundamentals of Biochemistry-J. L. Jain, S. Chand & Company, 7th edition (2014).

2. Harper's Biochemistry –RoberK.Murray, McGraw Hill, Lange Medical Books.30th edition (2015).

REFERENCES

1. Fundamentals of Biochemistry –A.C.Deb., Jain Book Depot Publisher.9th ed. (2009)
2. Biochemistry-Dr.Ambikashanmugam, Published by Lippincott, Williams & Wilkins.7th ed.(2012)
3. Biochemistry –Dr.Amit Krishna De, S.Chand & Co., Ltd.
4. Lehninger Principles of Biochemistry- Nelson & Cox, W.H.Freeman, 6th edition (2012).
5. Harper's Biochemistry –Murray, McGraw Hill, Lange Medical Books.25th Ed (1999).

SEMESTER – I

CORE PRACTICAL - I

Quantitative & Qualitative Analysis – I

COURSE CODE: U5BIPR11

Total – 30Hrs

Objectives:

1. Student should know the principles, theory and calculation of each experiment.
2. They should know to prepare all the solutions by themselves. They should standardize their solutions individually.

I. Quantitative Analysis

    i) Estimation of amino acids by formal titration method.

    ii) Determination of Saponification value of edible oil.

    iii) Determination of Acid number of edible oil.

    iv) Iodine value of oil.

II. Qualitative Analysis

    i) Reaction of simple sugars including glucose, fructose, galactose, mannose,

       pentose, maltose, sucrose, lactose, starch, glycogen and dextrin.

Text Books

1. Practical Clinical Biochemistry – Harold Varley, CBS, New Delhi

2. Medical Laboratory Technology – Kanai L. Mukherjee, Tata McGraw Hill., Vol. I, II, III.

References

1. Laboratory manual in Biochemistry – Jayaraman

2. Biochemical methods – S.Sadasivan and Manickam

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II SEMESTER
CORE PAPER II
Biological Macromolecules – II
COURSE CODE: U5BI2001
</div>

Objectives

To understand the structure, properties & functions of various biological macromolecules

UNIT –I Lipids - I   22Hrs

Introduction, definition of fatty acids.Classification, nomenclatures, structures, properties of fatty acids [Essential &Non essential Fatty Acids].Structure and function of tri-acyl glycerol.Properties of fats - (Saponification value, iodine no, Acid no, rancidity of fats, Reichert -Meissel No) Antioxidants.Structure and functions of phospholipids - Lecithin, Cephalin, phosphotidyl inositol and phosphotidyl serine, Spingomyelin, plasmologens.

UNIT – II Lipids - II   22Hrs

Structure and function of glycolipids (Cerebrosides, gangliosides), cholesterol, lipoproteins, steroids (steroid hormones, bile acids, bile salts), Structure and function of prostaglandins, leukotrienes, membrane lipids, liposomes, general formula for carotenoids & terpenes.

UNIT – III Nucleic acids   25Hrs

Structure of purine and pyrimidine bases, sugars, nucleoside, and nucleotide, purine and pyrimidine & nucleotide analogs.Structure of DNA – polymorphisms- A, B & Z Properties of DNA – denaturation, annealing, Tm, hypo & hyper chromicity Structure of RNA & Types Cellular RNA and their functions.Ribozymes

UNIT –IV Vitamins and Trace Elements   20 Hrs

Fat soluble & water soluble vitamins – structure, source, daily requirements, deficiency symptoms, biological significance, and their coenzyme structure Biological importance of cuppor, zinc, iron, selenium, iodine and chromium

UNIT –V Heterocyclic compounds   16Hrs

Heterocyclic rings of biological importance – pyridine, pyrrole, quinolone, pteridine, thiazole, imidazole, indole with examples.

Antibiotics – structure and functions of penicillin, streptomycin and Chloromycetin

TEXT BOOKS

1. Fundamentals of Biochemistry-J. L. Jain, S. Chand & Company, 7th edition (2014).
2. Biochemistry-Dr.Ambikashanmugam, Published by Lippincott, Williams & Wilkins.7thed.(2012)

REFERENCES

1. Biochemistry –Dr. Amit Krishna De, S. Chand & Co., Ltd.
2. Lehninger Principles of Biochemistry- Nelson & Cox, W.H.Freeman, 6th edition (2012).
3. Harper's Biochemistry- Murray, McGraw Hill, Lange Medical Books.25th ed (1999).

Quantitative & Qualitative Analysis – II

Total – 30Hrs

Objectives:

1. Student should know the principles, theory and calculation of each experiment.
2. They should know to prepare all the solutions by themselves. They should standardize their solutions individually.

I. Quantitative Analysis

i.   Estimation of ascorbic acid by titrimertic method using 2, 6 – Dichlorophenol indophenol.

ii. Estimation of reducing sugar from biological fluids by Benedict's titrimetric method.

iii. Estimation of reducing sugar by iodimetry

II. Qualitative Analysis

i.   Reaction of Proteins – Solubility, Denaturation, precipitation by acidic reagents, pH change. Biuret, Millons, Xanthoproteic test. Colour reaction of amino acids like typtophan. Tyrosine, cystine, Methonine. Arginine, Proline and histidine.

ii. Reactions of lipids – Solublity, Saponification test for unsaturation, Liebermann Burchard test for cholesterol.

Text Books

1. Practical Clinical Biochemistry – Harold Varley, CBS, New Delhi
2. Medical Laboratory Technology – Kanai L. Mukherjee, Tata McGraw Hill., Vol. I, II, III.

References

1. Laboratory manual inBiochemistry – Jayaraman
2. Biochemical methods – S.Sadasivan and Manickam

DEPARTMENT OF BIOTECHNOLOGY

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

									MAX. MARKS		
						B.Sc BIOTECHNOLOGY					
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami l/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5BT1001	Main	CC01	Molecular Biology	7	7	3	25	75	100
	CC	U5BTPR11	Main Pract.	CC02	Molecular Biology Practical	2	1	3	25	75	100
	CC	U5BTAL11	Allied	CC03	Biochemistry and Biophysics	7	6	3	25	75	100
	EC	U5BTAP11	Allied Pract.	EC03	Biochemistry and Biophysics Practical	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

										MAX. MARKS		
Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC04	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC05	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5BT2001	Main	CC04	Microbiology	7	7	3	25	75	100
	CC	U5BTPR21	Main Pract.	CC05	Microbiology Practical	2	1	3	25	75	100
	CC	U5BTAL21	Allied	CC06	Bio-Diversity	7	6	3	25	75	100
	EC	U5BIAP21	Allied Pract.	EC06	Bio-Diversity Practical	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

Core Paper I – Molecular Biology

Semester: 1   **COURSE CODE: U5BT1001**

Objective:

Unit 1: Cell – General Organization of Eukaryotic cell – Types of cell: Prokaryotes, Eukaryotes, sub-cellular organelles. Cell membrane and its architecture Cancer cell – type, Tumor and Malignant, Apoptosis / Necrosis

Unit 2: Ultra structure of cells- subs cellular organization – structure and function of cell membranes, cytosol/ Endoplasmic reticulum, nucleus, cytoskeleton, ribosome, mitochondria, lysosome. Cell Division – Cell cycle – Mitosis, Meiosis

Unit 3: Cell chemical nature and macromolecular protein structure and function; Structure of DNA and RNA. DNA replication, Genetic code – Operon concept – LAC – Protein synthesis

Unit 4: Genetic – structure of chromosome and types multiple alleles – Blood types, HLA-Chromosome aberrations- Addition, Deletion, Duplication, Translocation, Substitution, Polyploidy and Aneuploidy.

Unit 5: Microbial Genetics – Conjugation – Hfr, Transformation – Griffith effect, Transduction – Gene specialized.

Reference:

1. Molecular cell biology - Harvey lodish, David Baltimore, 2000.
2. Molecular Biotechnology – Principles and Application of recombinant DNA – Glick, Pasternak, 2002, Panima Pub.
3. Microbial Genetics (2nd Edition) – Maloy, Cronan, Frieifelder, Jones. Bartlett Pub.
4. Concept of Genetics (4th Edition) – William S.Klug & Micheal R. Cummings.
5. Cytology. 2005 by Verma and Agarval
6. Molecular Biology 2002 – David P.Clark.

CORE PRACTICAL I: MOLECULAR BIOLOGY

Semester 1   **Course Code: U5BTPR11**

1. Observation of Mitosis in Onion root tip
2. Observation of Giant chromosome in Chiranamous larva
3. Types of cells – Columar, Ciliated, Squash, …
4. Cell measurement – micrometry
5. Buccal smear preparation
6. Observation of chromosomes – Human (Demo)
7. Bacterial Transformation – Demo.
8. Subcellular Fractionation of cellular components.

ALLIED 1: BIOCHEMISTRY AND BIOPHYSICS

Semester: 1   **Course Code: U5BTAL11**

Objective:

Unit 1: Structure and Biological importance of Biomolecules – Carbohydrate, Protein, Lipid and Vitamin.

Unit 2: Enzymes – classification – physic chemical proterties – Mechanism of enzyme action – factors affecting enzyme activity. Enzyme kinetics, immobilized enzymes.

Unit 3: Clinical biochemistry – Hypo and Hyper glycemia, Diabetes – Type I and II, GTT, GTT-curve, obesity, CHD, LDL, HDL, Inborn errors of Metabolism – Alkaptonuria, Phemylketonuria, albinism and Sickle cell anemia.

Unit 4: Bioenergetics – Energy and its forms – Energy rich compound – laws of thermodynamics (First, Second) – enthalpy and entropy – redox potential – redox coupling and Redox reaction.

Unit 5: Radio isotope technologies – Units of radio activity. Geiger Muller counter, Scintillation counter, Autoradiography.

Reference:

1. Biochemistry (4th Edition) – L. Stryer Freeman Co. NY
2. Biochemistry (Revised Edition) – N. Arumugam et. al. 2010. Saras Pub.
3. Elements of Biochemistry – H.S. Srivanstava, Rostogi Pub.
4. Biochemistry – Satyanarayana, Books and Allied publications,2006
5. Biophysics (Rev. Edition) – N. Arumugam et. al. 2010. Saras Pub.
6. Biochemistry and Biophysics -
7. Enzymes by Ashok.

ALLIED PRACTICAL - 1: BIOCHEMISTRY AND BIOPHYSICS

Semester 1   **Course Code: U5BTPR11**

1. Estimation of pH using pH meter in various biological samples

2. Qualitative analysis of Glucose, Protein and Lipid

3. Estimation of Blood glucose level

4. Estimation of Blood Hemoglobin

5. Estimation of Blood Cholesterol

6. Enzyme activity – amylase / catalase.

CORE PAPER 2: MICROBIOLOGY

Semester 2   **Course Code: U5BT2001**

Unit 1: Scope of Microbiology – classification of microbes. Five kingdom concept, Eight Kingdom concept Major features of Bacteria – Structure of Bacteria– Bacterial Cell wall, Ultra structure of E.Coli – Capsule.

Unit 2: Distinctive features of Prokaryotic and Eukaryotic micro organism. Morphology, Ultra structure, Reproduction, life cycle of Algae (Diatom) - Morphology, Ultra structure, Reproduction, life cycle of Fungi (Penicillium) - Morphology, Ultra structure, Reproduction, life cycle of Virus -TMV, HPLV.

Unit 3: Bacterial Growth- Growth Rate – Growth curve – Measurement of Bacterial Growth – Factors affecting Bacterial growth – culture medium –Culture Techniques - culture of Bacteria – Batch culture – Plate culture – Differential culture – Maintenance of Bacterial Culture.

Unit 4: Observation of Microorganisms – Simple microscope – Compound microscope – Oil immersion objective – Phase contrast microscope – Fluorescence microscope - Electron microscopes(TEM and SEM). Staining Technique – Microbiological stains – Types of staining – simple staining – Negative staining – Gram staining – Acid Fast staining

Unit 5: Microorganisms involved in food products –some characteristics of Fermented milk – Micro organisms used as food sources -Algae, Single cell protein, Bacteria, Actinomycetes and Fungi. Role of microbes in food spoilage

Reference:

1. Microbiology –concept and applications, Pelzer, Chang and Krieg 1993, McGraw Hill NY.
2. Microbiology fundamentals and applications REnald, M.Atlas 1987. Prentice Hill
3. Microbiology – U.Satyanarayana 2008. Uppala Author Pub.
4. General Microbiology, Stainer, 1995, Mc. Millan Pub. Co
5. Microbiology: General and Applied – A.Mani and N. Arumugam 2011. Saras Pub.
6. Microbiology – Dubey.
7. Microbiology – Presscott.

CORE PRACTICAL 2: MICROBIOLOGY

Semester 2   **Course Code: U5BTPR21**

1. Sterilization techniques- Glassware, etc.
2. Media Preparation methods – Nutrient broth, Nutrient Agar, Plates, Slants and Butt.
3. Staining techniques – Simple and Gram.
4. Culture techniques – Spread plate, pour plate, streak plate and serial dilution
5. Enumeration of bacteria from soil and water samples.
6. Bacterial Growth curve.
7. Fungal staining.
8. MBAR test for Milk quality.

Allied Paper II: Biodiversity

Semester 2   **Course Code: U5BTAL21**

Unit 1: General aspects of Biodiversity, types of Biodiversity, Global Biodiversity, Biodiversity in India and State. Species Biodiversity, Hotspots in India

Unit 2: General Characters of Algae, General Characters of Fungi, General Characters of Bryophytes, General Characters of Pteridophytes, General Characters of Gymnosperms and General Characters of Angiosperms.

Unit 3: General Characters of Protozoa, General Characters of Porifera, General Characters of Coelenterata, General Characters of Helminthes, General Characters of Annalids, General Characters of Arthropods, General Characters of Molluscs and General Characters of Echinoderms.

Unit 4: General Characters of Prochordates, General Characters of Chordates, General Characters of Pisces, General Characters of Amphibia, General Characters of Reptilia, General Characters of Aves and General Characters of Mammalia.

Unit 5: Biodiversity – value of Biodiversity and conservations. Endangered species Importance of Ecosystem Economic importance of Algae, Fungi, Earthworm and Prawn

Reference:

1. Plant Diversity vol.1 – Annie and V. Kumaresan 2012. Saras Pub.
2. Environmental Biodiversity – P.R. Dadav 1995.
3. Invertebrata – Phylum – R.L.Kotpal Series, Rastragi Pub. Meerut 2000.
4. Manual of Zoology – E. Ayyar. Madras Pub.1995.
5. Comparative vertebrate Zoology. Waterman ET. Al. Mac Millan and Co. 1971.

Allied Practical II: Biodiversity

Semester II   **Course Code: U5BTAP21**

1. Plant diversity in campus

2. Animal diversity in campus

3. Microbial diversity in campus

4. Herbarium

5. Insect Box

6. Economically importance of plants and Animals

7. Observation of mouth parts of honey bee and Mosquito

8. Calculation of Biodiversity index – Shannon-weigher index.

9. Field visit to Hotspot.

DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS COMMON TO

B.Sc. (COMPUTER SCIENCE)
B.Sc. (SOFTWARE COMPUTER SCIENCE)
BACHELOR OF COMPUTER APPLICATION

SEMESTERS- I &II

(UNDER CBCS)

2015-2016

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
					B.Sc. (COMPUTER SCIENCE), B.Sc. (SOFTWARE COMPUTER SCIENCE)& BACHELOR OF COMPUTER APPLICATION				**MAX. MARKS**		
I	EC	U5FUR101/ U5FAR101/ U5FHD101/ U5FTA101	Language	EC01	Tami I/Urdu I/ Arabic I/Hindi I/	6	5	3	25	75	100
	EC	U5FEN101	English	EC02	English I	4	4	3	25	75	100
	AEC	U5ENV101		AEC1	Environmental Studies	2	1	3	25	75	100
	CC	U5CC1001	Main	CC01	Digital Logic Fundamentals	7	7	3	25	75	100
	CC	U5CCPR11	Main Pract.	CC02	Office Software Lab	2	1	3	25	75	100
	EC	U5CCAL11	Allied I	EC03	Mathematical Foundations I	7	6	3	25	75	100
	EC	U5CCAP12	Allied II	EC04	Problem Solving Technique I- Lab	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

Sem	Part	Course Code	Course	Course No	Course Title	Hrs./Week	Credit	Exam. Hrs	CIA	ESE	TOTAL
									MAX. MARKS		
II	EC	U5FUR201/ U5FAR201/ U5FHD201/ U5FTA201	Language	EC05	Tami II/Urdu II/ Arabic II/Hindi II/	6	5	3	25	75	100
	EC	U5FEN201	English	EC06	English II	4	4	3	25	75	100
	AEC	U5VED201		AEC2	Value Education	2	1	3	25	75	100
	CC	U5CC2001	Main	CC03	Programming in C	7	7	3	25	75	100
	CC	U5CCPR21	Main Pract.	CC04	Programming in C Lab.	2	1	3	25	75	100
	EC	U5CCAL21	Allied III	EC07	Mathematical Foundations II	7	6	3	25	75	100
	EC	U5CCAP22	Allied IV	EC08	Problem Solving Technique II- Lab	2	1	3	25	75	100
				TOTAL		30	25	-	175	525	700

CC- Core Course, EC- Elective Course, AEC- Ability Enhancement Course

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

I Year – First Semester

(For Candidates admitted from 2015 onwards)

DIGITAL LOGIC FUNDAMENTALS

OBJECTIVES:

To understand number systems, logic fundamentals and circuits, organization of computers, operating systems such as Windows and Linux

Unit I   **10 Hours**

Number Systems -Decimal, Binary, Octal, Hexadecimal and their inter conversions, - Binary Arithmetic -1's complement, 2's complement and 9's complement Binary codes - BCD, Excess-3, Gray code. (Chapter 1:1.1 to 1.9)

Unit II   **10 Hours**

Boolean Algebra : Boolean Laws - Simplification of Boolean Functions - Logic gates and Truth Table – Universal Gates (NAND and NOR) - The K-map method up to five variables, don't care conditions, POS & SOP forms.(Chapter 2::2.1 to 2.4,Chapter 3:3.1-3.8)

Unit III   **15 Hours**

Combinational Logic: Half/Full adder/subtractor, code conversion, Multiplexers, demultiplexers, encoders, decoders, Combinational design using MUX & DEMUX. BCD adder, magnitude comparator (Chapter 4:4.1 to 4.9)

Unit IV   **15 Hours**

Sequential logic: Flip flops (RS, Clocked RS, D, JK, JK Master Slave)-Counters & types Synchronous and Asynchronous counters- Registers, Shift registers and their types. (Chapter 6:: 6.1 to 6.4, Chapter 7:7.2-7.7)

Unit V   **10 Hours**

Computer Organisation : Peripheral Devices ,I/O Interfaces-Mode of Transfer -DMA-Input-Output Processor(IOP)-**Memory Organization**: Memory Hierarchy-Main Memory-Auxiliary   Memory-Cache   Memory-Virtual   Memory   (Chapter 11:11.1,11.2,11.4,11.6,11.7,Chapter 12:12.1,12.2,12.3,12.5,12.6)

Text Book: **Total Hours: 60**

1. Morris Mono M., "**Digital Logic and Computer Design**", PHI Latest Pub. Ed. (Unit I to Unit IV)
2. Morris Mano M – "Computer System Architecture – PHI Third Edition (Unit V)

Reference Books:

1. Morris Mano M, Kime .R.Charles, "**Logic And Computer Design Fundumentals**"(2nd Edition Updated)

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

I Year – First Semester

(For Candidates admitted from 2015 onwards)

Office Software Lab

a) Excel

1. Using formulae (Numeric, String, Date, Financial etc) to compute Simple Compound Interest, EMI, FV etc
2. Drawing various graphs Chart - Line, XY, Bar and Pie for a given set of data.
3. Conditional Formatting
4. Sorting and Import / Export features.
5. Macros and VBA

b) Access
6) Creation of table / primary key /
7) Query / Parameter Query / Relations
8) Filtering Records
9) Left / Right / Equi / Cross Joins
10) Design of forms / Reports / Modules

c) HTML
11) Creating web page with simple & advanced tags.
12) Drawing Tables
13) Web Page with Frames and Links (internal & external)
14) Creating Simple forms
15) Applying CSS to HTML

REFERENCE BOOK:

1. LAB MANUAL

DEPARTMENT OF MATHEMATICS

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

SEMESTER I

Allied Paper I	Mathematical Foundations I	Code : U5CCAL11

Objectives: To Explore the Fundamental Concept of Mathematics

Unit I: SYMBOLIC LOGIC

Proposition, Logical operators, conjunction, disjunction, negation, conditional and bi – conditional operators, converse, inverse, contra positive, logically equivalent, tautology and contradiction, Arguments and validity of argument.

Unit II: SET THEORY

Set, set operations, venndiagram, Properties of sets, number of elements in a set, Cartesian product, relation & functions, Relation: Equivalence relation. Equivalence class, partially and totally ordered sets, Functions: Types of Functions, Composition of Functions.

Unit III: BINARY OPERATORS

Types of Binary operations: Commutative, Associative, Distributive and identity, Boolean algebra: properties. Permutations and combinations

Unit IV: DIFFERENTIATION

Simple problem using standard limits, $\lim_{x \to a} \frac{x^n - a^n}{x - a}$, $\lim_{x \to 0} \frac{sinx}{x}$, $\lim_{x \to 0} \frac{tanx}{x}$, $\lim_{x \to 0} e^x$, $\lim_{n \to 0} (1+1/n)^n$ /n, $\lim_{n \to 0} (1+n)^{1 \backslash n}$, Differentiation, successive differentiation, Leibnitz theorem, partial differentiation Applications of differentiation, Tangent and normal, angle between two curves, Maximum and minimum values[second derivative test], curvature and radius of curvature [Cartesian coordinates], Envelops.

Unit V: TWO DIMENSIONAL ANALYTICAL GEOMETRY

Straight lines – pair of straight lines – circles – System of Circles - conics [parabola, Ellipse and Hyperbola].

RECOMMENDED TEXT:

MATHEMATICAL FOUNDATIONS Volume I, U. Rizwan, Nelliappar Publications, Chennai. 2012

REFERENCES

1. MATHEMATICAL FOUNDATIONS, P.R VITTAL, Margham Publication, Chennai.
2. DISCRETE MATHEMATICAL FOUNDATIONS, V.Sundaram & others, – A.P.Publication, Sirkali
3. ANALYTICAL GEOMETRY OF 2 AND 3 DIMENSIONS, P.Duraipandia & Others, Emerald Publication 1992 Reprint.

SEMESTER   I

Allied Practical I	Problem Solving Techniques I	Code : U5CCAP11

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

List of Exercises

1. Computing expressions
2. Operations on Vectors
3. Operations on Sets
4. Permutation and Combinations
5. Differential Calculus

REFERENCES:

MATLAB MANUAL

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

I Year – Second Semester

(For Candidates admitted from 2015 onwards)

PROGRAMMING IN C

OBJECTIVES:

The purpose of this course is to understand simple algorithms, language constructs and to develop programming skills in C.

UNIT – I   **10 Hours**

Fundamental Algorithms & Factoring Methods: Algorithm characteristics, Structure of algorithm - Linear, iterative, loop, decision constructs – Flow chart – need – Illustrative examples through : Exchanging the values of two variables , Counting, Summation of a set of numbers, Factorial computation, Generation of Fibonacci sequence, Reversing the digits of a number, Base conversion, Finding the square root of a number, Smallest divisor of an integer, Greatest Common Divisor of two numbers, Generating prime numbers, Computing the prime factors, Generating the pseudo random numbers, Computing the nth Fibonacci number.(Chapter 2 & 3)

UNIT – II   **10 Hours**

Introduction to C: C character set -Identifiers and keywords. Data types and sizes, Declarations, Expressions, statements and symbolic constants, Input/output functions – type conversions – precedence and order of evaluation Operators and expressions: Arithmetic, unary, logical, bit-wise, assignment and conditional operators, Library function, user defined functions -Control statements, comma operator.

UNIT – III   **15 Hours**

Arrays: Defining and processing, passing to a function, Multi dimensional arrays. Functions: Defining and accessing: passing arguments, Function prototypes, Recursion, Use of library functions, Storage classes, automatic, external and static and register variables. Strings: Operations on strings.

UNIT – IV   **15 Hours**

Pointers: Declarations, Passing to a function. Operations on pointers, Pointers and arrays, Arrays of pointers Sructures- nested structures - defining and processing, passing to a function, Unions. Pre processors, Command line arguments.

UNIT – V   **10 Hours**

Files: Open, close, create, process, Unformatted data files. Text and binary files - Dynamic memory allocation – streams - error handling

Text Books: **Total Hours: 60**

1. How to solve it by computer by R.G.Dromey, PHI International (Unit I)

2. E. Balagurusamy, "Programming in C", Tata McGrawhill Publishers (Unit II to V)

Reference Books:

1. Kernighan, B.W. and Ritchie, D.M., "The C Programming Language (ANSIC)", PHI.

2. Foster & Foster, "C by Discovery", Penram International Publishers, Mumbai.

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)
I Year – Second Semester
(For Candidates admitted from 2015 onwards)
Programming in C – Lab

Control Statements:

1. Print n Fibonacci numbers – (using for)
2. Print n Prime numbers – (using while)
3. Simple arithmetic on two numbers – (using switch/case)

Functions:

4. Swap two values using call by value / call by reference.

Recursion:

5. To compute NcR and NpR
6. To Compute GCD and LCM

String Manipulation

7. Operations on string such as length, concatenation, reverse, counting, and copy of a string to another.

Matrices:

8. Matrix Addition, Subtraction, Multiplication, Transpose of n x m matrices.
9. Inverse of a square matrix.

Searching:

10. Binary Search.

Sorting:

11. Bubble Sort
12. Insertion Sort

Structures:

13. Students Mark statement

Pointers:

14. Arithmetic operations on pointers.

Files

15. Creating/ Reading/ Writing a text/binary file.

REFERENCE BOOK:

1. LAB MANUAL

DEPARTMENT OF MATHEMATICS

SEMESTER II

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

Allied Paper II	Mathematical Foundations II	Code : U5CCAL21

Objectives: To Explore the Fundamental Concept of Mathematics

Unit I: MATRICES – I

Multiplication of matrices, singular and Non singular matrices, Adjoint of a Matrix, inverse of a matrix, symmetric and skew symmetric, Hermitian and skew Hermitian, orthogonal and unitary matrices, Rank of a matrix, solution of simultaneous linear equations by [i] Cramer's rule [ii] Matrix inversion Method. (Upto Three equations and Three unknowns)

Unit II: MATRICES – II

Tests for consistency of linear equations, (Rank Method), characteristic roots and characteristic vectors, Cayley – Hamilton theorem, matrix of linear transformations: reflection about the x,y axes and the line $y=x$, rotation about the origin through an angle, expansion or compression, shears, translation.

Unit III: INTEGRAL CALCULUS – I

Integration simple problem, integration of rational function involving algebraic expressions of the form $\frac{1}{ax^2+bx+c}$, $\frac{1}{\sqrt{ax^2+bx+c}}$, $\sqrt{ax^2+bx+c}$, $\frac{px+q}{ax^2+bx+c}$, $\frac{px+q}{\sqrt{ax^2+bx+c}}$, Integrations using simple substitutions – integration involving trigonometric functions of the form $\frac{1}{a+b cos x}$, $\frac{1}{a^2 sin^2 x+b^2 cos^2 x}$ – integration by parts.

Unit IV: INTEGRAL CALCULUS – II

Properties of definite integrals Reduction formulae for $\int x^n e^{ax}\, dx$, $\int \sin^n x\, dx$, $\int \cos^n x\, dx$, $\int x^m (1-x)^n\, dx$, Applications of integration for [i] Area under plane curves, [ii] Volume of solid of revolution

Unit V: ANALYTICAL GEOMETRY OF THREE DIMENSIONS

Planes, Straight Lines, Spheres and Cones (simple problems only)

RECOMMENDED TEXT:

MATHEMATICAL FOUNDATIONS Volume II, U. Rizwan, Nelliappar Publications, Chennai 2012

REFERENCES

1. MATHEMATICAL FOUNDATIONS, P.R VITTAL, Margham Publication, Chennai.
2. DISCRETE MATHEMATICAL FOUNDATIONS, V.Sundaram & others, – A.P.Publication, Sirkali
3. ANALYTICAL GEOMETRY OF 2 AND 3 DIMENSIONS, P.Duraipandia & Others, Emerald Publication 1992 Reprint.

SEMESTER   II

Common to B.Sc., (CS) / BCA / B.Sc.,(SW)

Allied Practical II	Problem Solving Techniques II	Code : U5CCAP21

List of Exercises

1. Matrices Manipulations

2. Testing Consistency of System of Equations

3. Integration

4. Applications of Integration to Area and volume

5. Plotting of 2D and 3D objects.

REFERENCES:

MATLAB MANUAL