CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A)
ELURU – 534 003

College of Excellence

Reaccredited by NAAC at 'A+' Grade with 3.56/4.00 CGPA

ACADEMIC COUNCIL MEETING

Friday, 19th June 2020

VENUE: CONFERENCE HALL

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A) ELURU

ACADEMIC COUNCIL MEETING

19.03.2020 at 10.00 A.M. through Goggle Meet.

AGENDA

- Prayer
- Welcome
- Presentation of College Report for the year 2019-2020
- Ratification of Results of 2018-2019.
- Ratification of BOS resolutions of UG Courses
- Ratification of BOS resolutions of PG Courses
- Resolutions regarding New courses
  1) B.B.A. Logistics
  2) B.Sc. Mass Communication
- Any Other
- Students response
- Vote of thanks

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Ch.S.D.St.Theresa's College for Women (Autonomous), Eluru

Members of the Academic Council – 2019-2020

Date: 19.06.2020 at 9.30 A.M through Goggle Meet.

Chairperson	Dr.Sr.Marietta D' Mello	Principal, St.Theresa's College for Women, Eluru
University Representatives	Prof.K.S.Ramesh	Department of English Adikavi NannayaUniversity **Rajamahendravaram – 533 296**
	Dr.V.Persis	Dept. of Computer Science Adikavi NannayaUniversity **Rajamahendravaram – 533 296**
	Dr.K.V.Swamy	Department of Geology Adikavi NannayaUniversity **Rajamahendravaram – 533 296**
Management Representatives	Rev.Dr.Sr.Marietta Pudota	Correspondent, St.Theresa's College for Women, Eluru.
	Sr.K.Showrilu	Vice Principal & Director, P.G.Courses
	Sr.P.Sunila Rani	Controller of Examinations
Management Nominees	Rev.Fr.G.M.Victor Emmanuel S.J	Principal, Andhra Loyola College (A) **VIJAYAWADA – 520 008.**
	Dr.E.Karuna Sree	Programme Co-ordinator Krishi Vignana Kendra Dr.YSR Horticultural University **Venkataramannagudem**
	Prof.Dr.Ratnakar D.B.	CEO & Director (Academics) IMRF Institution of Higher Education & Research **Vijayawada** Amaravatj.

Subject Experts	Dr.K.V.Padmavathi	Home Science
	Dr.R.Madhavi	English
	Mrs.Ume Salma	Hindi
	Dr.C.A.Jyothirmayi	Chemistry
	Dr.A.Nirmala Jyothsna	Physics & Electronics
	Dr.P.Jyothi Kumari	Nutrition & Dietetics
	Dr.R.Indira	Zoology
	Dr.K.L.Saraswathi Devi	Mathematics
	Dr.P.Ratna Mary	Economics
	Dr.BBRG Vijayalakshmi	Botany
	Dr.A.Padmavathi	Microbiology
	Dr.R.S.N.Sarma	Commerce
	Mrs.G.M.V.Ratna Kumari	History
	Mrs.P.Lakshmi Prasanna	B.Sc. Computer Sc. B.Com.Computers
	Mrs.Santosh Jhawar	BBA
	Mrs.D.Lumbini Devi	Biochemistry
	Mrs.R.Chittemma	Politics
	Mrs.B.Mariamma	Telugu
	Mrs.G.Kusuma	Statistics
	Mrs.S.Surekha	Social Work
	Ms.G.Radha Lakshmi	Psychology
	Mrs.D.Sarada	Multimedia & Web Technologies
	Dr.R.Indira	Clinical & Aqua Lab Technology
	Mrs.D.Sarada	Community College Courses
	Mrs.Santosh Jhawar	B.B.A. Logistics
	Mrs.A.Mamatha	B.Sc. Mass Communication
Special Invitees	Dr.Mrs.M.Rama	Chemistry
	Dr.KSVKS Madhavi Rani	Zoology
	Dr.M.Padmaja	Home Science
	Mrs.S.Naga Durga	Mathematics
Office Incharge	Sr.M.Inyasamma	Superintendent
Student Representatives	Ms.Lalitha	III B.Com. Computers

Ch.S.D.St.Theresa's College for Women (A), Eluru

BOARD OF STUDIES
DEPARTMENT OF ENGLISH

The Boards of Studies meeting was held on Thursday, 12.03.2020 at 2.00 p.m. in the Department of English after a series of preliminary meetings. The members who attended were:

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Prof.K.Sree Ramesh, Adikavi Nannaya University, Rajahmahendravaram.

External experts:

3. Mr.P.Gopichand, J.K.C.College, Guntur

Faculty:

4. Dr.Mrs.R.Madhavi
5. Dr.Mrs.D.Fatima Rani
6. Mrs.M.K.Padmalatha
7. Sk.Rafia Begum
8. Ms.D.Mani Bhagya Sri
9. Ms.P.V.Padmavathi
10. Mrs.P.Naga Padma

Students:

11. Gowthami Mishra, III B.A. EPSW
12. G. Swetha, II B.A. EPSW

Resolutions:

The following resolutions were made by the English Boards of Studies held on 12th march, 2020 to be implemented in the syllabus in the academic year 2020-21.

I. It was decided to retain the I Yr General English B Sc, BA, B Com, H Sc syllabus as it is, as it had been revamped only the previous year.

II. It was decided by the Board to retain the General English syllabus of the II Year B.A, B Com, B Sc, H Sc as it is sufficiently value-oriented, women-oriented and job-oriented.

III. It was decided by the Board to retain the syllabi of the BBA and B Voc. courses as they had been formulated with changes in the previous year.

IV. It was decided by the Board to retain the sullabi of the I, II, III year Advaned English syllabi as it is.

V. It was decided by that the I year (Advanced English can take up compilation of Audio books based on short stories, notes of lessons to be uploaded in blogs, LMS, websites etc.

VI. To conduct English Quiz on author's and books and Indian writers awards and paper presentations through Webinars in collaboration with J.K.C. College, Guntur in the month of July and November 2020.

VII. A joint collaborative Students' Magazine with ISSN No, where 20 pages will be compiled by Theresian students and 20 by the students of JKC College, Guntur with faculty as Editorial board will be taken up.

VIII. It was decided to introduce annotations as testing tool for III yr and II year courses (Advanced English) to encourage critical thinking.

IX. It was decided by the Boards to introduce a Certificate Course "English for Competitive Examinations" to be offered to students of all streams to enable to earn extra credits.

X. It was decided to offer an Add-on Job oriented course "IELTS for Overseas Careers" to be offered to I, II, III year and PG students by the Department.

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU
SYLLABUS – 2020-21
DEPARTMENT OF ENGLISH – GENERAL ENGLISH SYLLABUS
-SEMESTER – I

Course Objectives:

- To Introduce students literary texts to Paragraph and Essay writing
- To Introduce students to English speech sounds, stress & Syllabification
- To make students competent in different formats of formal correspondence with clarity & precision.
- To teach students basic grammar
- To introduce students to value oriented Anecdotes based on which dramatization, dialogue writing, short presentations, reported speech can be taught

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **PROSE**	**(English language through literature Orient -Black swan)** 1. The Last Leaf. 2. "A Deed of Bravery" – Jim Corbett 3. "With the Photographer" – Stephen Leacock.	**UNIT I** **PROSE** **(NO CHANGE)**	**(English language through literature Orient -Black swan)** 1. The Last Leaf. 2. "A Deed of Bravery" – Jim Corbett. 3. "With the Photographer" – Stephen Leacock
UNIT II **LIFE SKILLS**	**Anecdotes (1-15) (ADDED)** i. Absent Mindedness ii. Atheist iii. Bonhomie iv. Bravery v. Brotherhood(3). vi. Charity vii. Children viii. Creativity ix. Discipline x. Encouragement(2) xi. Example. xii. Family	**UNIT II** **LIFE SKILLS** **(NO CHANGE)**	**Anecdotes (1-15) (ADDED)** xiii. Absent Mindedness xiv. Atheist xv. Bonhomie xvi. Bravery xvii. Brotherhood(3). xviii. Charity xix. Children xx. Creativity xxi. Discipline xxii. Encouragement(2) xxiii. Example. **xxiv.** Family
UNIT III **PERSONALITY DEVELOPMENT** **NON – DETAILED**	David Copperfield Part-I 1- 18 chapters	**UNIT III** **PERSONALITY DEVELOPMENT** **NON – DETAILED** **(NO CHANGE)**	**David Copperfield Part-I (1-18 Chapters)**

UNIT IV **COMMUNICATION SKILLS**	**A Course in Listening and Speaking** 1. Phonetics 2. Phonemes 3. Translation4. Transcription 5. Silent Letters 6. Syllabification. 7. Word stress	**UNIT IV** **COMMUNICATION SKILLS (NO CHANGE)**	**A Course in Listening and Speaking** 1. Phonetics 2. Phonemes 3. Translation.4.Transcription 5. Silent Letters 6. Syllabification 7. Word stress
UNIT V **GRAMMAR**	**(From Silver Horizons)** 1. Parts of speech 2. Tenses3. Antonyms 4. Degrees of Comparison 5. Verb – types, Agreement 6. Active voice and passive voice	**UNIT V** **GRAMMAR (NO CHANGE)**	**(From Silver Horizons)** 1. Parts of speech 2. Tenses3. Antonyms. 4. Degrees of Comparison 5. Verb – types, Agreement 6. Active voice and passive voice
UNIT VI **DEVELOPING COMPETENCY**	**FUNCTIONAL UNIT (LETTERS)** 1. Letter for sickness already availed 2. Letter for leave to be taken 3. Letter seeking permission to attend a function. 4. Personal Letters	**UNIT VI** **SKILL DEVELOPMENT (NO CHANGE)**	**FUNCTIONAL UNIT (LETTERS)** 1. Letter for sickness already availed 2. Letter for leave to be taken 3. Letter seeking permission to attend a function 4. Letter applying for TC/CC 5. Personal Letters

Pedagogy*: Lecture, Group work, pair work, PPT's, Quiz, Role play, Assignments, Practical work.****Assignment:*** *Exercises in Work book.*

References: ***Wren. P.C & Martin- "High School English Grammar Competition" 2000, Chand & Co.,M .Banerjee - Introduction to Grammar,New Delhi***

- ***Reflections Text I – Text book for Degree Students compiled by Department***

DEPARTMENT OF ENGLISH – GENERAL ENGLISH SYLLABUS
SEMESTER – II

Course Objectives:

- To orient students in Value Education through Parables
- To introduce students to communication skills
- To make students competent in skills of job application ,placing orders etc
- To make students learn novel through movie, PPT, role play, Quiz.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **POETRY**	1. Laugh and Be Merry 2. Where the Mind Is without Fear. 3 Ozymandias	**UNIT I** **POETRY** **(NO CHANGE)**	1. Laugh and Be Merry 2. Where the Mind is without Fear. 3 Ozymandias
UNIT II **LIFE SKILLS**	PARABLES 1. The Story of the Sower 2. The Wise and Foolish Builders 3. Pharisee and the Publican 4. Story of the Talents 5. Good Samaritan	**UNIT II** **LIFE SKILLS** **(NO CHANGE)**	**Short Life Stories** 1. Room with a view 2. Wisdom and the wind 3. Secret Joys of Solitude 4. Time to Laugh 5. Golden scrapbooks of the mind. (From the Reader's Digest) **Extensive Reading** 1. The Story of the Sower 2. The Wise and Foolish Builders 3. Pharisee and the Publican. 4. Story of the Talents 5. Good Samaritan
UNIT III **NON - DETAILED**	David Copperfield Part-II 19-38 (Chapters)	**UNIT III** **NON – DETAILED** **(NO CHANGE)**	David Copperfield Part-II 19-38(Chapters)
UNIT IV **COMMUNICATION SKILLS**	1. Requests and Permissions 2. Instructions 3 Directions 4. Introductions.	**UNIT IV** **COMMUNICATION SKILLS** **(NO CHANGE)**	1. Requests and Permissions 2. Instructions 3. Directions. 4. Introductions.

UNIT V **GRAMMAR**	1. Correction of sentences 2. Synonyms 3. Question Tags 4. Dialogues 5.Direct and Indirect Speech 6.Punctuation	**UNIT V** **GRAMMAR**	1. Correction of sentences 2. Synonyms 3. Question Tags 4. Dialogues – Formal& Informal 5. Direct/Indirect Speech 6.Punctuation
UNIT VI **DEVELOPING COMPETENCY**	1. Letter placing an order for 2. Letter of application for Jobs 3. Letters of complaint 4. TC/CC Letter	**UNIT VI** **SKILL DEVELOPMENT (NO CHANGE)**	**Business Letters:** 1. Letter placing an order for 2. Letter of application for Jobs 3. Letters of complaint 4. Sales Letter

Pedagogy:
Lecture, Comprehension, Quiz, Oral presentations, Slip Tests, Group work
Assignment: Work book, Writing of brief Autobiography
References:

- ***Wren. P.C & Martin- "High School English Grammar Competition" 2000, Chand & Co.***

M .Banerjee - Introduction to Grammar,New Delhi
Reflections Text I – Text book for Degree Students compiled by Department

DEPARTMENT OF ENGLISH- SYLLABUS FOR GENERAL ENGLISH
SEMESTER-III

Course Objectives:

- To enable students to communicate effectively in formal& informal registers.
- To introduce students to reading texts and comprehending them. (Unit-II)
- To present students women oriented issues through meaningful essay that promote debate, discussion and encourage students to respond
- To introduce students to skills of filling forms of different kinds useful in daily life.
- To introduce students to English in digital world ex: e-mails.
- To train students in contemporary vocabulary.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT- I **WOMEN'S STUDIES**	1. Only A Girl. 2. Educated though Illiterate. 3. Heroes for Today.	**UNIT I** **WOMEN'S STUDIES** **(NO CHANGE)**	1. Only A Girl. 2. Educated though Illiterate. 3. Heroes for Today.
UNIT-II **LIFE SKILLS**	**ESSAYS:** 1. How I taught my grandmother to Read 2. Books for at least one Library. 3. Salaam Abdul Kalam 4. Hassan's Attendance Problem. 5. The Red Rice Granary 6. The Real Jewels.	**UNIT-II** **READING SKILLS** **(NO CHANGE)**	**ONLY FOR READING AND COMPREHENSION:** 1. How I Taught my grandmother to Read 2. Books for at Least one Library. 3. Salaam Abdul Kalam 4. Hassan's Attendance Problem. 5. The Red Rice Granary 6. The Real Jewels.
UNIT-III **LIFE SKILLS**	1. The Babus of Nayanjore—R.Tagore 2. The White Flower-R.K.Narayan 2. My Beloved Charioteer – Shashi Deshpande.	**UNIT - III** **SHORT STORIES** **(NO CHANGE)**	1. The Babus of Nayanjore—R.Tagore 2. The White Flower-R.K.Narayan 2. My Beloved Charioteer – Shashi Deshpande.

UNIT – IV **POETRY**	**Poetry (English Language through lit) Orient Blackswan** 1. Solitary Reaper – William Wordsworth 2. The Quality of Mercy – William Shakespeare 3. Human Seasons – John Keats	**UNIT – IV** **POETRY (NO CHANGE)**	**Poetry (English Language through lit) Orient Blackswan** 1. Solitary Reaper – William Wordsworth **2**. The Quality of Mercy – William Shakespeare 3. Human Seasons – John Keats
UNIT – V **GRAMMAR**	1. E- Mail 2. Writing C.V 3. Note Making 4. One word substitutes 5. Idioms and phrases. 6. Report Writing	**UNIT – V** **GRAMMAR (NO CHANGE)**	1. E- Mail 2. Writing C.V 3. Note Making 4. One word substitutes 5. Idioms and Phrases. 6. Report Writing
UNIT – VI **DEVELOPING COMPETENCE**	1. Speech Making 2. Debating 3. Dialogue/ Conversations 4. Filling – Up Forms a) Demand draft b) Challan c) Money Order d) Registered Letter/Parcel e) Railway Reservation forms f) Bus Pass	**UNIT – VI** **SKILL DEVELOPMENT** **[NO CHANGE]**	1. Speech Making 2. Debating 3. Dialogue/ Conversations 4. Filling – Up Forms a) Demand draft b) Challan c) Money Order d) Registered Letter/Parcel e) Railway Reservation forms f) Bus Pass

Assignment: Work book- Biography

Pedagogy: Lecture, Comprehension, Quiz, Oral presentations, Slip Tests, Group work, Use of Audio-video lessons,

References:

Wren. P.C & Martin- "High School English Grammar Competition" 2000, Chand & Co.
M .Banerjee - Introduction to Grammar,New Delhi
Reflections Text II – Text book for Degree Students compiled by Department

I – YEAR ADVANCED ENGLISH SYLLABUS
I SEMESTER – Paper I
INTRODUCTION TO LITERATURE

Course Objectives:

- To introduce students to types of prose-Narrative, descriptive, reflective.
- To introduce students to point of View, atmosphere and style and narrative technique.
- To introduce students to literary forms.
- To introduce students to write creatively & build stories on given plot & write essays on general topics.
- To introduce students to English language & its development
- To introduce to forms of poetry &aspects of Short stories.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **TYPES OF PROSE**	**Forms of Poetry** 1. Golden Fruit – A. A. Milne-Descriptive Prose 2. Animal Rights – Arnold Toynbee – Humor in prose 3. On Doing Nothing –J.B. Priestly– Reflective prose(Essays and short notes)	**UNIT I** **TYPES OF PROSE NO CHANGE**	1. Golden Fruit – A.A.Milne-Descriptive Prose 2. Animal Rights – Arnold Toynbee – Humor in prose 3. On Doing Nothing –J.B. Priestly– Reflective prose(Essays and short notes)
UNIT II **ELEMENTS OF FICTION**	1.Point of view- Kush want Singh's - The Interview 2. Setting and Atmosphere-Edgar Allen Poe's "The Tell - Tale Heart. 3. Style and Narrative Technique - O. Henry "The Gift Of Magi"	**UNIT II** **ELEMENTS OF FICTION NO CHANGE**	1.Point of view- Kush want Singh's - The Interview 2. Setting and Atmosphere-Edgar Allen Poe's "The Tell - Tale Heart. 3. Style and Narrative Technique - O. Henry "The Gift Of Magi"
UNIT III **LITERARY TERMS**	Ballad, epic, Romance, Lyric, Ode, Elegy, Pastoral Elegy, Sonnet, Rhyme, Meter, Mystery/ Miracle play, Morality Play, Metaphysical conceit	**UNIT III** **LITERARY TERMS NOCHANGE**	Ballad, epic, Romance, Lyric, Ode, Elegy, Pastoral Elegy Sonnet, Rhyme, Meter, Mystery/ Miracle play, Morality Play, Metaphysical conceit
UNIT IV **CREATIVE WRITING**	1. Story Writing- Hints 2. Essay Writing- General 3.Comprehension from prescribed Prose and Drama Selections	**UNIT IV** **CREATIVE WRITING NO CHANGE**	1. Story Writing.- Hints 2. Essay Writing- General 3. Comprehension from prescribed Prose and Drama Selections.

Assignment: Review of Poetry/ Short story
Literary forms-Scrap book

References: ***1. M.H. Abrahams- "A Glossary of Terms"***
2. W. J. Long- History of English Literature, Oxford University press
3. Ages, Movements and literary forms- Dr. Satish Kumar& Dr. AnupamaToyal, Agra.

Pedagogy: Seminars, Lecture, discussions, preparation of charts, library references, assignments, author review, short story writing, essay writing, PPT, movies.

I – YEAR ADVANCED ENGLISH SYLLABUS
II SEMESTER – II Paper
INTRODUCTION TO ENGLISH LANGUAGE AND LITERATURE

Course Objectives:

- To introduce students to types of prose-Narrative, descriptive, reflective.
- To introduce students to point of View, atmosphere and style and narrative technique.
- To introduce students to literary forms.
- To introduce students to write creatively & build stories on given plot & write essays on general topics.
- To introduce students to English language & its development.
- To introduce to forms of poetry &aspects of Drama.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
Unit - I **HISTORY OF ENGLISH LANGUAGE**	1.Word formation 2. Semantic Changes 3. Foreign Influences – Latin, Scandinavian, French, Greek, American English	**UNIT I** **HISTORY OF ENGLISH LANGUAGE NO CHANGE**	1.Word formation 2. Semantic Changes 3. Foreign Influences – Latin, Scandinavian, French, Greek, 4.American English
UNIT II **FORMS OF POETRY**	1. Sonnet-scorn not the sonnet ---William Wordsworth. 2. Ode -- "Ode to Autumn" – John Keats 3.Lyric-" My Love is Like A Red Red Rose" – Robert Burns 4. Ballad- The Ballad of Father Gilligan -- W. B. Yeats 5. Dramatic Monologue- My Last Duchess -- Robert Browning.	**UNIT II** **FORMS OF POETRY NO CHANGE**	1. Sonnet-scorn not the sonnet ---William Wordsworth. 2. Ode -- "Ode to Autumn" – John Keats 3.Lyric-" My Love is Like A Red Red Rose" – Robert Burns 4. Ballad- The Ballad of Father Gilligan - W.B.Yeats 5. Dramatic Monologue- My Last Duchess -- Robert Browning.
UNIT – III **FORMS OF DRAMA**	1. Character and characterization-The Mother's Day-- J.B.Priestly 2.Dialogue- A Marriage Proposal -- Anton Chekov.	**UNIT III** **FORMS OF DRAMA NO CHANGE**	1. Character and characterization-The Mother's Day-- J.B.Priestly 2.Dialogue- A Marriage Proposal -- Anton Chekov.

UNIT IV **(A) CREATIVE WRITING**	a. Poetry Writing On Given Theme b. Dramatization of a given Passage.(Dialogue Writing)	**UNIT IV** **CREATIVE WRITING** **NO CHANGE**	a. Poetry Writing On Given Theme b. Dramatization of a given Passage.(Dialogue Writing)
UNIT V **(B) LITERARY TERMS**	Simile, Metaphor, Personification, Alliteration, apostrophe, Hyperbole, Allegory, Allusion, Anticlimax, Irony, Blank Verse, Tragedy, Comedy, Tragi-Comedy, Character play, Masque, Comedy of Humors, Farce.	**UNIT V** **LITERARY TERMS** **NO CHANGE**	Simile, Metaphor, Personification, Alliteration, apostrophe, Hyperbole, Allegory, Allusion, Anticlimax, Irony, Blank Verse, Tragedy, Comedy, Tragi-comedy, Masque, Comedy of Humors, Farce. **Denouement (Added)** Character play(Deleted)

Assignment: Poetry writing, Dramatization of passages, Literary forms- Scrap books.

References: ***1. History of English Language- A. C. Bough 5th edition***

2. The English Language- C.L. Wren

3. M.H. Abrahams- "A Hand book of literary Terms"

4. Ages, Movements and literary forms-Dr. Satish Kumar, Dr. Anupama Tayal, Agra.

Pedagogy: Seminars, Group discussions, Preparation of Charts, Library references, Assignments, Author review, Poetry Writing, Dramatization of a given Passage.

II – YEAR ADVANCED ENGLISH SYLLABUS
III SEMESTER – Paper III - BRITISH POETRY AND DRAMA

Course Objectives:

- To introduce History of British poetry & types of prose writing
- To introduce students to history of British drama & different elements of drama
- To train students to write creative poems & short skits /dramatizations.
- To train students in History of British Prose and Novel.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I HISTORY OF LITERATURE POETRY	1. Birth and Development of English Poetry 2. Major Poets 3. Major Trends and Movements	**UNIT I HISTORY OF LITERATURE POETRY** **NO CHANGE**	1. Birth and Development of English Poetry 2. Major Poets, Chaucer, University wits, Spenser, Shakespeare, Milton,Donne, Dryden, Pope,Pre-Romantics,--Blake, Grey, Goldsmith,The Romantics, The Victorian Poets, T.S. Eliot and W.B Yeats. 3. Major Trends and Movements
UNIT II POETRY SELECTIONS	1. One day I Wrote her name – Edmund Spenser 2. Canonization – John Donne 3. The School Boy – William Blake 4. How Many Ways Do I Love Thee -Elizabeth Barrett Browning 5. The Rape of the Lock – (Cantos –I) - Alexander Pope.	**UNIT II POETRY SELECTIONS** **(NO CHANGE)**	1. One day I Wrote her name – Edmund Spenser 2. Canonization – John Donne 3. The School Boy – William Blake 4. How Many Ways Do I Love Thee - Elizabeth Barrett Browning 5. The Rape of the Lock – (Cantos –I) - Alexander Pope.
UNIT III HISTORY OF LITERATURE DRAMA	1. Birth and Development of English Drama 2. Major Dramatists 3. Shakespeare's Contribution to Literature.	**UNIT III HISTORY OF LITERATURE DRAMA (NO CHANGE)**	1. Birth and Development of English Drama 2. Major Dramatists: Marlowe, Shakespeare, Dryden, Goldsmith,

			Sheridan Congreve, T.S. Eliot, Barrie, Synge. 3. Shakespeare's Contribution to Literature.
UNIT IV SELECTEDDRAMA	Dr. Faustus – Christopher Marlowe	**UNIT IV SELECTED DRAMA (NO CHANGE)**	Dr. Faustus – Christopher Marlowe
UNIT V CRITICAL APPRECIATION	1. Critical appreciation of unseen Poetry/Drama and passage 2. Comprehension from the poetry Selections prescribed.	**UNIT V PRACTICAL CRITICISM and CREATIVE WRITING (NO CHANGE)**	1. Critical appreciation of unseen Drama/ poetry passage 2. Comprehension from the poetry Selections (prescribed).
UNIT VI LITERARY TERMS	Assonance, Madrigal, Mock heroic, Prosody, Rhyme, Scheme, Dramatic Monologue, Chronicle Play, Chorus, Archetype, Archaism, Soliloquy, Symbol.	**UNIT VI LITERARY TERMS (NO CHANGE)**	Assonance, Madrigal, Mock heroic, Prosody, Rhyme, Scheme, Dramatic Monologue, Chronicle Play, Chorus, Archetype, Archaism, Soliloquy, Symbol.

Assignment: Author/ Poet Review

- Preparation of Charts.
- Writing Short Skits.

Pedagogy: Assignments, Lecture Methods, Preparation of charts, PPT's, Seminars, Pair work, Group dynamics, Library references, Role play, Quiz.

References:

1. ***An Introduction to Literature- W. J. Long***
2. ***Glossary of literary Terms- M. H. Abrahams***
3. ***An Anatomy of Drama- Marjorie Boulton***
4. ***An Anatomy of Poetry- Marjorie Boulton***
5. ***A Background to the Study of English Literature- B. Prasad Macmillan publishers Ltd.***

II – YEAR ADVANCED ENGLISH SYLLABUS
IV SEMESTER – Paper IV
BRITISH PROSE AND NOVEL

Course Objectives:

- To introduce History of British poetry & types of prose writing
- To introduce students to history of British drama & different elements of drama
- To train students to write creative poems & short skits /dramatizations.
- To train students in History of British Prose and Novel.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **HISTORY OF LITERATURE PROSE**	1. Birth and Development of English Prose. 2. Major Prose Writers 3. Charles Lamb as an Essayist.	**UNIT I** **HISTORY OF LITERATURE PROSE (NO CHANGE)**	1. Birth and Development of English Prose. 2. Major Prose Writers: Bacon, Bunyan, Dryden, SwiftAddison, Steele, Ruskin, Carlyle, Boswell, Lamb, Dr.Johnson,Arnold 3. Charles Lamb as an Essayist.
UNIT II **PROSE SELECTIONS**	1. Of Youth and Age-Bacon 2. Dream Children-Charles Lamb. 3. Tales from Shakespeare a) Romeo and Juliet b) As you like it c) Macbeth	**UNIT II** **PROSE SELECTION (NO CHANGE)**	1. Of Youth and Age-Bacon 2. Dream Children-Charles Lamb. 3. Tales from Shakespeare a) Romeo and Juliet b) As You like It c) Macbeth
UNIT III **HISTORY OF LITERATURE NOVEL**	1. Rise of the English Novel 2. Major Novelists in English Literature	**UNIT III** **HISTORY OF LITERATURE NOVEL (NO CHANGE)**	1. Rise of the English Novel 2. Major Novelists in English Literature: Defoe, Richardson, Smollett, Sterne, Jane Austen, Swift, Hardy, Henry James, Virginia Woolf. D.H Laurence.
UNIT IV **NOVEL SELECTIONS**	"Pride and Prejudice"-Jane Austen	**UNIT IV** **NOVEL SELECTIONS (NO CHANGE)**	"Pride and Prejudice"-Jane Austen
UNIT V **CRITICAL APPRECIATION**	1. Critical appreciation of passage from prose piece. 2. Comprehension of unseen prose passage 3. Writing of paragraph on current issues.	**UNIT V** **PRACTICAL CRITICISM & CREATIVE WRITING**	a).Critical appreciation of passage from prose piece. b) Comprehension of unseen prose passage c). Writing of paragraph on current issues.

UNIT VI LITERARY TERMS	Litotes, Synecdoche, Metonomy, Zeugma, Euphemism, Bathos, Epithet, Epithalamion, Doggerel, Didactic Literature, Cliché, Farce.	**UNIT VI LITERARY TERMS (NO CHANGE)**	Litotes, Synecdoche, Metonomy, Zeugma, Euphemism, Bathos, Epithet, Epithalamion, Doggerel, Didactic Literature, Cliché, Farce.

ASSIGNMENT --- Short video film on ELT/ Social issues, Literary Terms- Assignment.
Pedagogy: Lecture, Seminars, Library reference work, Movie review, Preparation of Short video films

References:

1. ***W.J. Long- An Introduction to English Literature***
2. ***M. H. Abrahams-"A Handbook of Literary Terms"***
3. ***Marjorie Boulton- An Anatomy of Prose***
4. ***N. Hudson- A Short introduction to English Literature***
5. ***David lodge- "Modern criticism and Theory, a Reader"- Dorling Kindersley, 2011.***

DEPARTMENT OF ENGLISH –SYLLABUS FOR ADVANCED ENGLISH
SEMESTER –V
PAPER – V – INDIAN ENGLISH LITERATURE
(Prose & Poetry).

Course Objectives:

- To introduce students to prose writers of Indian English.
- To introduce students to poetry writers of Indian English.
- To introduce students to creative writing

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I HISTORY OF INDIAN ENGLISH PROSE & POETRY	1. Development of Indian English Prose 2. Major Writers in Indian English Prose 3. Development of Indian English Poetry. 4. Major Writers in Indian English Poetry.	**UNIT I HISTORY OF INDIAN ENGLISH PROSE & POETRY (NO CHANGE)**	1. Development of Indian English Prose 2. Major Writers in Indian English Prose - Tagore, Aurobindo, Radhakrishnan,Gandhi,Vivekananda, Nirad.C.Choudhary,Salman Rushdie 3. Development of Indian English Poetry. 4. Major Writers in Indian English Poetry - Aurobindo. Michael.M.Dutt, Toru Dutt,Tagore, SarojiniNaidu, Ezekiel, Daruwallah ,Dom Moreas, Parthasarathy, Ramanujam, Shiv.K.Kumar.
UNIT II PROSE SELECTIONS	1. An Ideal before Youth -Dr. Radhakrishnan 2. India's Fiftieth anniversary-Salman Rushdie 3.Ashoka the beloved of Gods-Jawaharlal Nehru	**UNIT II PROSE SELECTIONS (NO CHANGE)**	1. An Ideal before Youth -Dr. Radhakrishnan 2. India's Fiftieth anniversary-Salman Rushdie 3.Ashoka the beloved of Gods-Jawaharlal Nehru
UNIT III POETRY SELECTIONS	1. A very Indian poem in English - Nissim Ezekiel. 2. Female of the species - Gauri Deshpande. 3. The River -A. K .Ramanujan.	**UNIT III POETRY SELECTIONS (NO CHANGE)**	1. A very Indian poem in English - Nissim Ezekiel. 2. Female of the species - Gauri Deshpande. 3. The River -A.K.Ramanujan.

UNIT IV SHORT STORIES	1. The Barbers' Trade Union - Mulkraj Anand 2. Sparrows – K. Ahmad Abbas 3. Mrs. Datta Writes a letter – Chitra Banerjee Divakaruni.	**UNIT IV SHORT STORIES (NO CHANGE)**	1. The Barbers' Trade Union - Mulkraj Anand 2. Sparrows – K. Ahmad Abbas 3. Mrs. Datta Writes a letter – Chitra Banerjee Divakaruni.
UNIT V CRITICAL APPRECITION	**PRACTICAL CRITICISM** Appreciation of Unseen prose/Poetry selections **CREATIVE WRITING Prose essays** **>Descriptive** **>Analytical** **>Narrative**	**UNIT V PRACTICAL CRITICISM & CREATIVE WRITING (NO CHANGE)**	**PRACTICAL CRITICISM** Appreciation of Unseen prose/Poetry selections **CREATIVE WRITING Prose essays** **>Descriptive** **>Analytical** **>Narrative**
UNIT VI LITERARY TERMS	Related to prose & poetry: Free verse, Problem Play, Absurd drama, Social novel, Stream of Consciousness novel, Bildungsroman, Point of view, Setting.	**UNIT VI LITERARY TERMS (NO CHANGE)**	Free verse, Problem Play, Absurd drama, Social novel, Stream of Consciousness novel, Bildungsroman, Point of view, Setting.

Assignment: Creative Writing-- Preparation of Magazine on creative writing
Pedagogy: Student Seminars, Discussions, Oral Presentations, lecture, Written Assignments, Comprehension, Reference work, Assignments.

References:

1. ***"Indian Writing in English"- Srinivasa Iyengar, Sterling Publications, 1962.***
2. ***"The Fair Voice: A Study of Indian Women poets in English" –Chavan P Sunanda, Sterling Publishers, 1984.***

ADVANCED ENGLISH SYLLABUS – V SEMESTER
PAPER VI --- AMERICAN ENGLISH LITERATURE
(PROSE & DRAMA)

Course Objectives:

- To introduce students to American English prose writers.
- To introduce students to American English writers of Drama.

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **HISTORY OF AMERICAN PROSE**	1. Origin and Development of American Prose 2. Major American Prose Writers 3. Estimation of American Prose	**UNIT I** **HISTORY OF AMERICAN PROSE (NO CHANGE)**	1. Origin and Development of American Prose 2. Major American Prose Writers Thoreau, Ralph Waldo Emerson, Mark Twain, William Faulkner, John Steinbeck, Herman Melville. 3. Estimation of American Prose
UNIT II **PROSE SELECTIONS**	**Walden** –by H.D. Thoreau	**UNIT II** **PROSE SELECTIONS (NO CHANGE)**	**Walden** –by H.D. Thoreau
UNIT III **HISTORY OF AMERICAN DRAMA**	1.Origin & Development of American Drama 2.Major American Dramatists 3.Estimation of American Drama	**UNIT III** **HISTORY OF AMERICAN DRAMA (NO CHANGE)**	1.Origin & Development of American Drama 2.Major American Dramatists-Eugene ONeill, Tennesse Williams, Arthur Williams, David Mamet,Edward Albee,T.S.Eliot 3.Estimation of American Drama
UNIT IV **DRAMA PRESCRIBED TEXT**	**'Hairy Ape** 'by O'Neil	**UNIT IV** **DRAMA PRESCRIBED TEXT (NO CHANGE)**	**'Hairy Ape** 'by O'Neil
UNIT V **CRITICAL APPRECITION**	Unseen prose/drama selections	**UNIT V** **PRACTICAL CRITICISM & CREATIVEWRITING**	1. Critical Appreciation of unseen Drama/Prose Passage 2. Creative Writing on given theme.

UNIT VI LITERARY TERMS	Satire, Mock-epic, Heroic couplet, Epistle, Heroic Tragedy, Comedy of Manners, Genteel comedy, Sentimental Comedy, Periodical Essay, Picaresque novel, Epistolary novel	**UNIT VI LITERARY TERMS (NO CHANGE)**	Satire, Mock-epic, Heroic couplet, Epistle, Heroic Tragedy, Comedy of Manners, Genteel comedy, Sentimental Comedy, Periodical Essay, Picaresque novel, Epistolary novel

Book Review: Based on Syllabus for extensive reading
Assignment: PPT/Seminar
Pedagogy: Lecture, Extensive reading, Library reference work, Field trip to places of scenic Significance-Report Writing, Group dynamics, Paper presentations.
References:

1. ***Cambridge History of English Literature-George Sampson.***
2. ***A Students Handbook of America Literature- C.D. Narasimhaiah***
3. ***A History of American Literature-William Peter Field Trent, John Erskine, Stuart P Sherman***

DEPARTMENT OF ENGLISH - ADVANCED ENGLISH SYLLABUS
VI SEMESTER- PAPER VII - INDIAN ENGLISH LITERATURE
(DRAMA& NOVEL)

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **HISTORY OF INDIAN ENGLISH DRAMA**	1.Pre Independence Drama 2.Post Independence Drama 3.Major Dramatists in Indian English	**UNIT I** **HISTORY OF INDIAN ENGLISH DRAMA** **(NO CHANGE)**	1.Pre Independence Drama 2.Post Independence Drama 3.Major Dramatists in Indian English Aurobindo. Tagore, Girish Karnad, Vijay Tendulkar, Kalotkar, Deena Mehta, Asif Currimbhoy, Dattani
UNIT II **DRAMA PRESCRIBED TEXT**	**Silence, the Court in Session** -by Vijay Tendulkar	**UNIT II** **DRAMA PRESCRIBED TEXT(NO CHANGE)**	**Silence, the Court in Session** -by Vijay Tendulkar
UNIT III **HISTORY OF INDIAN ENGLISH NOVEL**	1.Pre Independence Novel 2.Post Independence Novel 3.Major Novelists	**UNIT III** **HISTORY OF INDIAN ENGLISH NOVEL** **(NO CHANGE)**	1.Pre Independence Novel 2.Post Independence Novel 3.Major Novelists RajaRao, R.K.Narayan, MulkRaj.Anand, Bhabani Bhattacharya, Nayantara Sehgal, K.Markandaya,Anitha Desai, Salman Rushdie, Vikram Seth, Kiran Desai, Anita Nair
UNIT IV **NOVEL PRESCRIBED TEXT**	Ladies' Coupe by Anita Nair	**UNIT IV** **NOVEL PRESCRIBED TEXT** **(NO CHANGE)**	Ladies' Coupe by Anita Nair
UNIT V **CRITICAL APPRECIATION**	Unseen Novel/Drama Selections	**UNIT V** **PRACTICAL CRITICISM & & CREATIVE WRITING**	Short Story on given topic

UNIT VI **LITERARY TERMS**	(Related to Novel & drama Irony, Objective and Subjective, paradox, persona, plot, Point of View, Realism, Naturalism, Satire, Soliloquy.	**UNIT VI** **LITERARY TERMS** **(NO CHANGE)**	Irony, Objective and Subjective, paradox, persona, plot, Point of View, Realism, Naturalism, Satire, Soliloquy

Assignment: Novel Review-I/II/III Generation Writers

References: ***1. Introduction to Literature, fiction, Poetry& Drama-Sylvan Barnett***
2. Introduction to Indian Writing in English- Srinivas Iyengar
3. M.H. Abrahams- A Handbook of Literary Terms

Pedagogy: Lecture, Group Discussion, Seminar, Novel Review, Quiz, Discussion

DEPARTMENT OF ENGLISH- ADVANCED ENGLISH SYLLABUS –
VI SEMESTER - PAPER VIII – CLUSTER I
AMERICAN ENGLISH LITERATURE (POETRY & NOVEL)

UNIT	2019-20(OLD)	UNIT	2020-21 (NEW)
UNIT I **HISTORY OF AMERICAN POETRY**	1.Origin and development of American poetry 2.Major American poets 3.Estimation of American poetry	**UNIT I** **HISTORY OF AMERICAN POETRY (NO CHANGE)**	1.Origin and development of American poetry 2. Major American poets. Ezra Pound, Carlos Williams, E.E. Cummings, Carl Sandburg, Robinson Jeffers, Wallace Stevens, Robert Lowell, T.S. Eliot 3.Estimation of American poetry
UNIT II **SELECTED POEMS**	1.The Yachts-William Carlos Williams 2.Hope is the thing with feathers-Emily Dickinson 3.Stopping by woods on a snowy evening-Robert Frost 4.Science-Robinson Jeffers 5.Cinderella – Sylvia Path 6.Life is fine-Langston Hughes.	**UNIT II** **SELECTED POEMS (NO CHANGE)**	1.The Yachts-William Carlos Williams 2.Hope is the thing with feathers-Emily Dickinson 3.Stopping by woods on a snowy evening-Robert Frost 4.Science-Robinson Jeffers 5.Cinderella – Sylvia Plath 6.Life is fine-Langston Hughes

UNIT III HISTORY OF AMERICAN NOVEL	1. Origin and Development of American Novel 2. Major American Novelists 3. Estimation of American Novel	**UNIT III HISTORY OF AMERICAN NOVEL (NO CHANGE)**	1. Origin and Development of American Novel 2. Major American Novelists Mark Twain. N.Hawthorne, Faulkner, Poe, Melville, Henry Jones,Harriet Beecher Stowe, Sinclair Lewis,J.F Cooper. 3. Estimation of American Novel
UNIT IV NOVEL- PRESCRIBED TEST	Mark Twain's " Adventures of Tom Sawyer"	**UNIT IV NOVEL- PRESCRIBED TEST (NO CHANGE)**	Mark Twain's " Adventures of Tom Sawyer"
UNIT V CRITICAL APPRECIATION	Unseen Poem/ Novel passage	**UNIT V PRACTICAL CRITICISM & CREATIVE WRITING (NO CHANGE)**	Unseen Poem/ Novel passage
UNIT VI LITERARY TERMS	Related to Poetry & Novel: Biological criticism, Historical Criticism, Psychoanalytical criticism, Sociological criticism, Marxist criticism, feminist criticism, Archetypal criticism, Post colonial criticism.	**UNIT VI LITERARY TERMS (NO CHANGE)**	Biological criticism, Historical Criticism, Psychoanalytical criticism, Sociological criticism, Marxist criticism, feminist criticism, Archetypal criticism, Post colonial criticism.
	Assignment	**MOVIE REVIEW**	Of English/American Classics

References: ***1.Contemporary American Poetry- Howard Nemerov***
2. A Students Handbook of American Literature- C.D. Narasimhaiah

Pedagogy: 1. Review of Literature, Library Reference book
3. Lecture Method
4. Group dynamics
5. Lecture
6. Seminar
7. Use of ICT
8. Movies- Audio, Video Materials.

DEPARTMENT OF ENGLISH- ADVANCED ENGLISH SYLLABUS –
VI SEMESTER - PAPER VIII – CLUSTER II
CREATIVE WRITING

Objective: This course caters to the needs of students interested in composing Prose on Poetry in English by familiarizing them with the basic techniques of Creative writing.

UNIT I: Composition Techniques of Argumentative composition Assertive Argument, Argument by illustration, Factual Argument Logical Presentation.

UNIT II: Non rational ways of writing Use of figures of speech and basic terms: Epigram, Euphemism, Irony, invective, paradox, pun, satire, adoptation, plot, character etc.

UNIT III: Dialogue writing Nature of Dialogue, Purpose, Hints of Dialogue writing, Writing Dialogue (Practice)

UNIT IV: Non Fiction: Notebooks, Cuttings, Journals, Sketches, Stereotypes, Stock characters .

UNIT V: Story Concept Stream of Consciousness Technique, Suspense, Suspension of Disbelief, Theme, Thrillers, Adventure and Quest Stories.

EVALUATION CRITERIA:

Assignment-I -15M, Assignment-I-15M, Internal Test- 20M,
Semester End Exam/Internship/Project-50M

REFERENCES AND READING MATERIAL:

M.H Abhrams : Glossary of Literary Terms
M.Frank. Writing as Thinking: A Guided Process Approach, Englewood Cliffs, Prentice Halls Reagents
Dr RS Aggarwal,Vikas Aggarwal.Objective English
K.M.Smita, Annie Pothen. English Conversational Practice. Sterling Publications. Pvt Ltd.

DEPARTMENT OF ENGLISH- ADVANCED ENGLISH SYLLABUS –
VI SEMESTER - PAPER VIII – CLUSTER III
FUNCTIONAL ENGLISH

1**.** Reading & Comprehension – Short stories -20 Hrs

2. Vocabulary building—antonyms, Synonyms, Confusables, One word Substitutes, Spellings.

3. Language building—Punctuations, Idioms, Re-arranging jumbled letters, Tenses, Writing paragraph with given vocabulary& pictures.

4. writing for Specific purpose—Composition, letter writing, Dialogues, Interview, Narration, Flow chart, Report Writing, Diary Writing.

5. Speech Practice—Pronunciation, Stress Pattern, Syllabification.

Prescribed book:
"Interactions"
A Compilation by UG Department of English.

Assignments: Writing Report
Narratives
Short Stories

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU
BBA – SEMESTER-I SYLLABUS

Communication skills – I

Unit I:

Introduction to communication: Meaning, Definitions, Process, Features, Objectives, Essentials of Good Communication, Barriers/ over barriers.

Unit II:

Vocabulary Building: Words-Meaning , Synonyms, Antonyms, One Word Substitutes.

Unit III:

Basics of Grammar: Phrases, Idioms, Articles, Prepositions, Degrees of Comparison.

Unit IV:

Features of Written Correspondence: Types of Business Correspondence – Sales Letter, Claim Letter, Adjustment Letter, Collection letter, Letter Placing Order.

Unit V:

Resume Writing: Types, Resume Writing for Various Jobs.

References

Meenakshi Raman, Sangeeta Sharma,*Communication Skills*, O.U.P,New Delhi,2011
Kumkum Bharadwaj, *Professional Communication*, I.K.Publishing House, NewDelhi,2008

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU

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BBA – SEMESTER-II SYLLABUS

Communication Skills – II

Unit - I

Business Communication : Memorandum, Notice, Agenda, Minutes, Social Correspondence, Telephone Skills and Electronic mail.

Unit – II

Reading skills: Comprehension of Factual Material, Reading Techniques and Guide lines for Effective Reading.

Unit – III

Spoken Skills: Phonetics – Transcription, Translation, Syllabification, Word Stress and Sentence Stress.

Unit – IV

Dyadic Communication: Everyday conversation and Dialogues on Situations.

Unit – V

Basics of Grammar: Direct and Indirect Speech, Tenses, Active& Passive voice.

References

Meenakshi Raman, Sangeeta Sharma,*Communication Skills*, O.U.P,New Delhi,2011
Kumkum Bharadwaj, Professional Communication, I.K.Publishing House, NewDelhi,2008

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU

.

BBA – SEMESTER-III SYLLABUS

Professional English & Soft Skills – I

Unit I:

Body Language: Gestures, Facial Expressions, Eye Contact, Appearance, Positive Body Language.

Unit II:

Interpersonal Relationships: Concept& Features, Team Work, Analysis of Strengths & Weakness.

Unit III:

Time Management: Concept, Significance, Aspects & Relevance, Factors Causing Waste of Time.

Unit IV:

Writing Skills: Paragraph Writing, Essay Writing, Common Errors, and Abbreviations.

Unit V:

Speaking Skills: Accent and Rhythm in Connected Speech, Intonation.

References

Meenakshi Raman, Sangeeta Sharma,*Communication Skills*, O.U.P,New Delhi,2011
Kumkum Bharadwaj, Professional Communication, I.K.Publishing House, NewDelhi,2008

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU
BBA – SEMESTER-IV SYLLABUS

Professional English & Soft Skills – II

Unit – I

Soft Skills: Motivation, Goal Setting, Positive Attitude, Stress Management.

Unit – II

Spoken Skills: Extempore Speech Making, Short Speeches/ Presentations, Interview Skills and Group Discussions.

Unit – III

Written Skills: Report Writing, E-mail and Advertising.

Unit – IV

Information Transfer: Pie Diagrams, Bar Diagrams, Flow Charts, Interpretation of Pictures, Interpretation of Tables.

Unit – V

Vocabulary Building: Words often mis-spelt, Punctuation, Words often Confused.

References

Meenakshi Raman, Sangeeta Sharma,*Communication Skills*, O.U.P,New Delhi,2011
Kumkum Bharadwaj, Professional Communication, I.K.Publishing House, NewDelhi,2008

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU

I.B.VOC-I SEMESTER SYLLABUS
COMMUNICATION SKILLS IN ENGLISH-I

UNIT-I

COMMUNICATION
Meaning and Definition-Process-Features-Importance-Essentials of Good communication-Communication Barriers-Overcoming Barriers

UNIT-II

REMEDIAL GRAMMAR
Direct and Indirect Speeches-Degrees of Comparison-Active and Passive Voice-Common Errors Including Spelling-Articles

UNIT-III

READING SKILLS
Reading Comprehension-Reading Techniques-Barriers of Reading Comprehension-Necessary Elements of Good Reading-Various Methods of Reading-Comprehension Exercises

UNIT-IV

WRITING SKILLS
Features of Written Communication-Letter Writing-Job Application Letter and Resume

UNIT-V

SPEAKING SKILLS
Essentials of Spoken English-Speeches on Various Occasions-Asking for Directions-Conversations-Telephonic Conversation

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU

Communication Skills English-II
I B. Voc-II Semester syllabus

UNIT-I

COMMUNICATION: [Speaking Skills]

Face-to-Face Conversation – Making polite requests –Expressing Sympathy – Agreeing & Disagreeing –Making Complaints –Asking for and giving permissions

UNIT-II

REMEDIAL GRAMMAR : (Tenses)

Tenses –Simple Present –Present Progressive –Present Progressive –Present Perfect –Present Perfect Progressive –Simple Past-(3) –Simple Future

UNIT-III

READING SKILLS:

Synonyms – Antonyms – Idiomatic Expressions- one word Substitutes – Homonyms

UNIT-IV

WRITING SKILLS:

Paragraph writing – Essay Writing

UNIT-V

LISTENING SKILLS:

Hearing Vs Listening – Importance of Listening – Barriers to Listening – Developing Listening Skills

CH.S.D.ST. THERESA'S COLLEGE FOR WOMEN (A): ELURU
II B.VOC-III SEMESTER SYLLABUS
COMMUNICATION & SOFT SKILLS-I

UNIT-I

PRESENTATION SKILLS

Punctuation-Vocabulary-Conversation-Role Play-Speeches

UNIT-II

BODY LANGUAGE

Meaning-Nature and Scope-Factors Influencing Body Language-Components of Body Language-Types of Gestures

UNIT-III

TEAM-DYNAMICS

Introduction-Definition of Team-Ground Rules for Team-Types of Team-Tips for Effective Teamwork Skills-Importance of Communication in Team Building

UNIT-IV

GROUP DISCUSSION

Introduction-How to Address-Communication Skills-Do's and Don'ts in Group Discussion-Capability-Co-Ordinate and Lead-Exchange of Thoughts

UNIT-V

INTERVIEW SKILLS

Introduction-Different Types of Interviews-Before Interview-During Interview-Do's and Don'ts of Interview

DEPARTMENT OF ENGLISH

SYLLABUS 2020-2021

COMMUNICATION AND SOFT SKILLS

SEMESTER II

- Listening skills
- Vocabulary Building – Prefixes, Homonyms, Homophones, Homographs Idiomatic English, Suffixes, words often confused, analogy
- Oral skills – Group dynamics, enacting advertisements, and role play, short Skits, Dialogues.
- Reading skills: Reading with word stress, sentence stress, Intonation, impromptu speeches, JAM.
- Communicative skills – Introduction -I, Response/ Taking Leave, saying goodbye, Greetings /Permissions, Requests, Asking for information/ Thanking /Directions. .
- Phonetics
- Phonemes
- Translation
- Transcription
- Silent Letters
- Syllabification
- . Word stress.

DEPARTMENT OF ENGLISH

SYLLABUS 2020-2021-- SEMESTER III

COMMUNICATION AND SOFT SKILLS

- Introducing People – VIPS.,Guests, Resource persons ,etc.
- Public Speaking – Speech Making on different occasions.
- Conversations – Formal & Informal
- Role play.
- Interview Skills.
- Presentation Skills
- Information Transfer
  - Pie Charts – Pictures
  - Tables.
  - Tree Diagrams – Bar Diagrams.

DEPARTMENT OF ENGLISH

SYLLABUS 2020-2021-- SEMESTER IV

COMMUNICATION AND SOFT SKILLS

- Debating
- Group Discussions
- Descriptions
    - People.
    - Events.
    - Objects.
- Soft Skills

- Netiquette.
- Positive Attitude.
- Body Language.
- SWOC.
- Emotional Intelligence.

DEPARTMENT OF ENGLISH

SYLLABUS 2020-2021—Add- On Course —Semester VI- 40 hours.

English for Competitive Exams

Course Outcomes

	Course Objective Statement
CO1.	Understand Grammar
CO2.	Learn how to spot errors in sentences
CO3.	Analyse and infer reading comprehension passages, paragraph writing
CO4.	Effectively understand and frame sentences, vocabulary formation, sentence completion Exercises
CO5.	To think and write different types of Essays.

- Comprehension.
- Common Errors (Parts of Speech).
- Synonyms
- Antonyms.
- Misspelled Words
- Difference of Meaning of Similar Words
- One Word Substitutes.
- Idioms and Phrases.
- Fill in the Blanks
- Rearrangement (Jumbled Words)
- Spotting Errors
- Sentence Completion.
- Paragraph writing
- Filling up Blanks with Prepositions.

REFERENCES

1. R. P. Bhatnagar & Ragul Bhargava- English for Competitive Exams, Macmillan 2011

2. English for Competitive exams—Department compilation

DEPARTMENT OF HINDI

The Boards of Studies meeting was held in the Department of Hindi on Saturday, 07.03.2020 at 11.00 a.m.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Sri K.Nageswara Rao, Sri Y.N.College (A), Narsapur.

External experts:

3. Mrs.K.Sailaja, Sir C.R.R. College (A), Eluru

Faculty:

4. Mrs. Ume Salma
5. Dr.Mrs.Ch.V.Mahalakshmi

Students:

6. Ch.Anjana, II B.Sc. MBN
7. Latifa, I B.Sc. MEC

Resoltuions:

1) The Board resolved to continue the existing syllabus for I, II and III Semesters as it was framed last year only and it is quite adequate.

2) The Board resolved to start an Add-On Course from the academic year 2020-21 in the IV Semester titled "Story Telling (Katha-Kathan) – Theory and Practice".

I YEAR I SEMESTER HINDI SYLLABUS 2020-21
TITLE: HINDI PROSE ESSAYS AND AUTOBIOGRAPHY

UNIT-I

PROSE – Mitratha, Sahithya ki Mahatta

UNIT-II

Bharat ek hai, HIV aids, Grammar

UNIT-III

Tarani – a real narration of six brave women who voyaged around the World by Dr.V.Vallabha Rao former Head, Department of Hindi, Andhra Loyola College.

UNIT-IV

Agni ki udan by APJ Abdul Kalaam.

UNIT-V

Parvaz by Gulzar and Audio on Agni ki udan.

Prescribed Prose Text: Gadya Sandesh.

I YEAR II SEMESTER HINDI SYLLABUS 2020-21
TITLE: SHORT STORIES AND TRANSLATION

UNIT-I

Aur vah padh gayi, Haar ki jeet.

UNIT-II

Bhook hadtal, Bhagnavasesh.

UNIT-III

Prashasanik shabdavali

UNIT-IV

Anuvad sidhant

UNIT-V

Anuvad Abhyas

Prescribed Text: Kathalok, Anuvad Sidhant by Bholanath Tiwari.

II YEAR III SEMESTER HINDI SYLLABUS 2020-21
TITLE: HISTORY OF HINDI LITERATUE, POETRY, NOVEL & DRAMA

UNIT-I

1. Sansar ke Bhasha Parivar
2. Hindi ka udbhav aur vikas
3. Hindi Sahitya ka Itihas

UNIT-II

Poetry selections

1. Pareeksha –Mythilee sharan gupta
2. Shilpsoundarya- Jayashankar Prasad
3. Dharti Kithna Deti hai-Sumitra Nandan Panth
4. Joothe Pathe- Bala Krishna Sharma Naveen

UNIT-III

1. Kabeer ke Dohe - 10
2. Tulsi ke Dohe - 10
3. Raheem ke Dohe - 10

UNIT-IV

Novel –Rukogi nahi Radhika by Usha Priyamvada.

UNIT-V

Drama—Shakuntala/Dhruvaswamini

Prescribed Texts:

Hindi Sahitya ka Subodh Itihas Babu Gulab Rai Suman - Compiled by Ume Salma

I YEAR B.B.A. I SEMESTER HINDI SYLLABUS 2020-21
TITLE: GRAMMAR & SPOKEN HINDI

UNIT-I

Parichay, dinacharya, apnay College ka varnan, Kisi yatrasthal ka varnan and Apnay bhavishya ki yojana.

UNIT-II

Grammar

UNIT-III

Apne Shabdon mein Vaakya likhne

UNIT-IV

Anek shabd ke Ek shabd. Usage of words in sentences.

UNIT-V

Hindi Varthalaap Abhyas

Prescribed text for Spoken Hindi by Rupert Snell.
Conversation practice by Taylor.
Aalok Grammar and Conversation book by Mrs.Ume Salma.

I YEAR B.B.A. II SEMESTER HINDI SYLLABUS 2020-21
TITLE: GRAMMAR & SPOKEN HINDI

UNIT-I

Grammar.

UNIT-II

Hindi Conversation Practice.

UNIT-III

Technical Terminology.

UNIT-IV

Hindi ka Udhbhav aur Vikas.
Rashtra Bhasha Hindi.

UNIT-V

Cinema ki Samiksha

Prescribed text for Spoken Hindi by Rupert Snell.
Conversation practice by Taylor.
Aalok Grammar and Conversation book by Mrs.Ume Salma.

II YEAR III SEMESTER HINDI ADD-ON COURSE SYLLABUS 2020-21
TITLE: STORY TELLING TECHNIQUES – THEORY AND PRACTICE WITH REFERENCE TO PANCHA TANTRA STORIES

Theory Syllabus

UNIT-I

What is story telling method.

UNIT-II

Types of story telling:

- Overcoming the monster
- Rags to riches
- The quest
- Voyage and Return
- Comedy
- Tragedy
- Stories with take home value

UNIT-III

Procedure of Story Telling:

- Create a story telling atmosphere.
- With the audience with the first line.
- Read the books with great rhyme, rhythm and pace.
- Tell the story with the books.
- Play games with the books.
- Slowdown for the ending.

UNIT-IV

Advantages of story telling:

- Story telling and public speaking.
- How to use story telling in presentations.
- Usage of story telling in Business presentations.

UNIT-V

Story Telling Practice with Panchatantra stories.

DEPARTMENT OF ECONOMICS

The Boards of Studies Meet was held on Wednesday, 04.03.2020 at 2.00 p.m. in the Department of Economics.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Sri D.Sankara Polaiah, Sir C.R.R.College, Eluru

External experts:

3. Dr.K.Swaroop, Maris Stella College, Vijayawada

Faculty:

4. Dr.Mrs.P.Ratna Mary
5. Dr.Mrs.I.Annapurna
6. Ms.M.Navya

Students:

7. P.Roopika, III B.A.HEP EM
8. B.Priyanka , II B.A.HEP EM

Resolutions:

1. The board resolved to follow the previous syllabus to all the papers for the academic year 2020-21. The following are the titles of papers proposed.

I BA I Semester	Paper I	Micro Economics-I
I BA II Semester	Paper II	Micro Economics-II
II BA III Semester	Paper III	Macro Economics-I
II BA IV Semester	Paper IV	Macro Economic-II
III BA V Semester	Paper V	Indian Economy
III BA V Semester	Paper VI	Indian Economy with special reference to Andhra Pradesh
III BA VI Semester	Paper VII	Public Finance

2. It was resolved to follow the previous syllabus of same Cluster Papers in VI Semester for the academic year 2020-21.

Paper VIII A1	Industrial Economics
Paper VIII A2	Labour Economics
Paper VIII A3	Industrial Management/Self Study/MOOCs/Project work

3. It was resolved to follow the previous syllabus of Business Economics for B.Com students and Managerial Economics for BBA students.

4. Self Help groups – DWACRA as an add-on course for the II B.A. students in IV Semester for the year 2020-21.

DEPARTMENT OF ECONOMICS

PAPER TITLES

	Semester	Paper	Title of the Paper
I B.A	I	Paper I	Micro Economics I
	II	Paper II	Micro Economics II
II B.A	III	Paper III	Macro Economics I
	IV	Paper IV	Macro Economics II
III B.A	V	Paper V	Indian Economy
		Paper VI	Indian Economy with special reference to Andhra Pradesh
	VI	Paper VII	Public Finance
		Paper VIII A1	Industrial Economics
		Paper VIII A2	Labour Economics
		Paper VIII A3	Industrial Management
B.Com.	I	Paper I	Business Economics I
	II	Paper II	Business Economics II
BBA	I	Paper I	Managerial Economics
PROJECT WORK			

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU
I BA ECONOMICS I SEMESTER – PAPER I SYLLABUS 2020-21
TITLE: MICRO ECONOMICS-I

UNIT-I

Nature, definition and scope of economics-micro and macro, static and dynamic, normative and positive-inductive and deductive analysis-partial and general equilibrium-choice as a Economic problem.

UNIT-II

Utility analysis-cardinal and ordinal approaches-Law of diminishing marginal utility –Law of equi-marginal utility-Demand analysis-Law of demand –Elasticity of demand-price, Income and Cross elasticities–consumer's surplus.

UNIT-III

Indifference curves- properties of indifference curves-price(budget) line-Equilibrium of the consumer with the help of indifference curves. Engel curve. Iso quant- Producers Equilibrium with the help of Iso quants –Expansion path.

UNIT-IV

production function-Factors of Production –Conecpt of cobb-Douglas production function- law of variable proportions – law of Returns to scale.

UNIT-V

Different Concepts of revenue and costs and their inter relation –Break even analysis.

I BA ECONOMICS II SEMESTER - PAPER II SYLLABUS 2020-21
TITLE: MICRO ECONOMICS-II

UNIT-I

Market forms-Perfect Competition- price Determination and equilibrium of a firm and industry under Perfect competition-Monopoly-Price determination-Price Discrimination.

UNIT-II

Monopolistic Competition-Price determination-Selling Costs - Oligopoly-Kinked demand Curve approach –Duopoly.

UNIT-III

Marginal Productivity theory of Distribution – Theories of Wage determination and Collective bargaining-concept of minimum Wages-Trade union.

UNIT-IV

Ricardian theory of rent-Quasi - rent concept of Alfred Marshall -transfer earnings-Interest –Classical, neo -classical and Keynesian Theories.

UNIT-V

Profit –Dynamic, Innovations, Risk and Uncertainty theories.

II BA ECONOMICS III SEMESTER - PAPER III SYLLABUS 2020-21
TITLE: MACRO ECONOMICS-I

UNIT-I

Meaning, definition and importance of Macro Economics.

UNIT-II

Meaning, Definitions: National Income, GNP & NNP, GDP & NDP, Personal Income (PI), Disposable Income (DI), Per Capita Income (PCI), Real National Income (RNI) – Methods of Estimation of National Income (NI) – Measurement of National Income in India.

UNIT-III

Classical Theory of Employment – Say's law of markets – Keynesian Theory of Employment.

UNIT-IV

Consumption function – A P C, M P C, Factors influencing consumption function – The Concept of Multiplier – Accelerator.

UNIT-V

Investment function – M E C & Rate of interest – Applicability of Keynesian theory to the developing countries.

II BA ECONOMICS IV SEMESTER – PAPER IV SYLLABUS 2020-21
TITLE: PAPER MACRO ECONOMICS-II

UNIT-I

Meaning, functions, and classification of Money – Gresham's Law, R.B.I. Classification of Money – M1, M2, M3, M4.

UNIT-II

Theories of Money - Fisher's Quantity Theory of Money – Cambridge Approach (Marshall, Pigou, Robert son, Keynes).

UNIT-III

Meaning and definition – Phases of a trade cycle – Inflation – Definitions – Types of inflation – Causes and effects of inflation – Measures to control inflation.

UNIT-IV

Functions of Commercial Banks – The process of credit creation – Functions of Reserve Bank of India – Methods of credit control – Quantitative and Qualitative methods.

UNIT-V

Concept of Non-banking Finance Companies (NBFCs) – Concept of SEBI –Stock market – Meaning, function & importance of stock market. Primary and secondary markets – Concepts of Shares, debentures.Insurance – types of Insurance – Life Insurance and General Insurance.

III BA ECONOMICS V SEMESTER – PAPER V SYLLABUS 2020-21
TITLE: INDIAN ECONOMY

UNIT-I

Meaning of Economic growth & Development – Measures of Economic Development – GNP, PQLI, PCI & HDI, and Inclusive Growth. Factors influencing Economic Development – Sustainable Development

UNIT-II

Balanced & Unbalanced Growth – Choice of Techniques – Labour Intensive & Capital Intensive Methods

UNIT-III

Basic Features – Natural Resources – Land, Water & Forest Resources. Basic Demographic Features – Size & Growth of Population – Age & Sex Composition _ Rural & Urban Population – Occupational distribution – Population Policy.

UNIT-IV

National Income in India – Trends & Composition – Poverty, Inequalities & Unemployment – Causes, Consequences & Remedies.

UNIT-V

Current Five year plan – Objectives, Mobilizations & Allocation of Resources – NITI Aayog- New Economic Reforms - Liberalization, Privatization & Globalization in India.

III BA ECONOMICS V SEMESTER – PAPER VI SYLLABUS 2020-21
INDIAN ECONOMY WITH SPEACIAL REFERENCE TO ANDHRA PRADESH

UNIT-I

Indian Agriculture – Nature and Importance – Trends in Agricultural Production and Productivity - Factors determining Productivity – Impact of Land Reforms in India.

UNIT-II

Rural Credit – Micro Finance and Self help Groups (SHGs) – Agriculture price policy – Crop insurance – Agricultural infrastructure and food security (1) Agricultural marketing in India (2) Provision of Agricultural credit to the Tenants.

UNIT-III

Indian Industry & Services – Structure and Growth of Indian Industry – Industrial Policies of 1956 & 1991 – Growth and problems of small scale Industries – Foreign Exchange Management Act (FEMA)

Unit-IV

Disinvestment Policy in India – Foreign Direct Investment – Growing importance of service sector in India – Banking, Insurance, Information Technology, Education & Health

UNIT-V

Andhra Pradesh State Economy – GSDP – Sectoral Contribution and Trends; Human Resources – Population Trends, Regional Differentials – Demographic Features – Agricultural sector – Land use and Cropping Pattern – Impact of Land Reforms in Andhra Pradesh. – Income & Employment in Agricultural Sector – Industrial sector – Small Scale Industries, Investment & Employment in Industrial Sector – Special Economic Zone (SEZs), Service Sector – Growth of Income and Employment in the Service Sector, Information Technology (IT)

III BA ECONOMICS VI SEMESTER – PAPER VII SYLLABUS 2020-21

TITLE: PUBLIC FINANCE

UNIT-I

Public finance – Meaning and Scope of Public Finance – Distinction between Public and Public finance – Principle of Maximum Social Advantage – Public Goods vs. Private goods – Sources of public revenue – a) Taxes b) Administrative Revenues c) Commercial Revenues d) Gifts and grants e) Deficit finance.

UNIT-II

Cannons of Taxation (Adam Smith & Modern) - The Concept of Value Added Tax (VAT), Taxes – Direct and Indirect – Merits and demerits. Methods of Taxation – Progressive, proportional and Regressive and degressive.

UNIT-III

Impact, Shifting and incidence of Taxation; Effects of Taxation.

UNIT-IV

Public Expenditure – Meaning and Classification of Public Expenditure – Wagner's Law – Peacock Wise-man – Reasons for the Growth of Public Expenditure.

UNIT-V

Public Debt – Classification of Public Debt – Methods of Debt Redemption – Causes & Effects of Growth of India's Public Debt.

III BA ECONOMICS VI SEMESTER – PAPER VIII A1 SYLLABUS 2020-21
TITLE: INDUSTRIAL ECONOMICS (Cluster Elective)

UNIT-I

Industry - Role and Importance of the Industry in Economic development and Sectoral linkages-Industrial classification and data information.

UNIT-II

Public , Private joint and co-operative sectors - private corporate sector - MNCs and their role.

UNIT-III

Industrial productivity - concept-measurement-productivity in Indian industries-industrial sickness-underutilization of capacity-factors accounting for it and its consequences.

UNIT-IV

Economic reforms - Globalization and Indian industry – privatization and issues relating to disinvestment policy.

UNIT-V

Industrial development in India – industrial policy – Role of the Central and State - Industrial policy and economic reforms – Industrial growth and pattern.

III BA ECONOMICS VI SEMESTER – PAPER VIII A2 SYLLABUS 2020-21
TITLE: LABOUR ECONOMICS (Cluster Elective)

UNIT-I

Labour Economics – Concept and definition – Nature, scope and importance – Labour as a unique factors of production.

UNIT-II

Concepts of Labour Market and its features – Determinants of the supply and the demand for labour – organized and unorganized labour.

UNIT-III

Wage Concept and definitions – Wage and development – collecting bargaining – wage differentials – wage policy – objectives and importance.

UNIT-IV

Concept of Labour Productivity – measurement and importance of labour productivity – Determinants – causes for Low labour productivity and measures to increase labour productivity - Technology and labour productivity.

UNIT-V

Need for state intervention in labour matters – methods of intervention – labour social security and labour welfare measures – labour policy, objectives and importance – Emerging perception on state intervention.

III BA ECONOMICS VI SEMESTER – PAPER VIII A3 SYLLABUS 2020-21
TITLE: INDUSTRIAL MANAGEMENT (Cluster Elective)

UNIT-I

Basics of Management – introduction, definition, characteristics of management, functions of management – Planning, Organizing, Staffing, Directing, Co-ordination, Controlling, Motivating, Communication, Decision Making – Administration and management, Nature of management, levels of management, managerial skills, managerial roles.

UNIT-II

Forms of Organization – Line, Line – staff etc. Forms of ownerships – Partnership, Proprietorship, Joint Stock, Co-operative Society, Government Sector etc., concept of Globalization.

UNIT-III

Strategic Management – Evolution – Concept and Charactersitcs of strategic management – Defining strategy – Strategic Management Process.

UNIT-IV

Quality Management – Definition of quality, goalpost view of quality, continuous improvement definition of quality, types of quality – quality of design, conformance and performance, phases of quality management – The ISO 9001:2000 Quality Management System Standard.

UNIT-V

Financial and Project Management – Capital structure, Fixed and Working capital – Introduction to Capital budgeting – Break even analysis – assumptions, importance – cost – Benefit analysis.

I B.COM I SEMESTER ECONOMICS SYLLABUS 2020-21
TITLE: BUSINESS ECONOMICS-I

UNIT-I

Introduction – Nature and Scope of business economics - Economic and non-Economic activities - micro Economics – importance and limitations and macro economics- importance and limitations - differences between micro and macro economics, Cardinal and Ordinal utility - Law of diminishing marginal utility.

UNIT-II

Meaning and definitions of demand – determinants of demand – demand function –law of demand - demand curve – Exceptions - shifts of demand Vs movement along a demand curve

UNIT-III

Meaning and definitions of elasticity of demand –types of price elasticity of demand-measurement of price elasticity of demand –concept of income elasticity, cross elasticity- Supply – law of supply – determinants of supply.

UNIT-IV

Production function –law of variable proportions- law of return to scale - Economies and diseconomies of scale.

UNIT-V

Different concepts of costs and Revenue - costs in short run and long run - Break even analysis - uses and limitations.

I B.COM II SEMESTER ECONOMICS SYLLABUS 2020-21
TITLE: BUSINESS ECONOMICS-II

UNIT-I

Concept of Market-Market structure –Perfect competition-Characteristics-Price determination-Equilibrium of a firm and industry in the short run and long run.

UNIT-II

Monopoly-Characteristics -Profit maximizing output in the short and long run-Distinction between Perfect Competition and Monopoly.

UNIT-III

Monopolistic Competition – Characteristics - Product differentiation - Profit Maximization - Price and output in the short and long run – Oligopoly – Characteristics – Price Rigidity – Kinked Demand Curve.

UNIT-IV

National Income – Definitions - concepts, Measurement – GDP - Economics systems – Free Market Economy –Socialism –Mixed Economy.

UNIT-V

Concept of Liberalization, Privatization, Globalization. WTO - Objectives – Functions. Trade Cycles –Meaning –Phases - Benefits of International trade – Concept of balance of trade and Balance of Payment - fiscal deficit.

I B.B.A. I SEMESTER ECONOMICS SYLLABUS 2020-21
TITLE: MANAGERIAL ECONOMICS

UNIT-I

Meaning and its importance in the economy-Economic and Non Economic activities – Economics – Definitions - Distinction between Micro and Macro Economics - Concept of Cardinal and Ordinal Utility.

UNIT-II

Meaning –Types of Demand –Law of Demand –Elasticity of Demand –different Types of elasticity of demand-Price elasticity –Income elasticity-Cross elasticity - determinants of elasticity of demand -Law of Supply.

UNIT-III

Concept of production- production function - Law of variable Proportions - Law of return to scale-concept of cost of production-costs in short run and long run.

UNIT-IV

Market structures-characteristics-perfect competition- Monopoly-pricing in various markets structures during short run and long run.

UNIT-V

National income-Different concepts of national income-Measurement of national income- Sectoral composition of GDP - concept and different phases of trade cycles – concepts of monetary policy and fiscal policy- International trade and Balance of payments.

II B.A. IV SEMESTER ECONOMICS ADD-ON COURSE SYLLABUS 2020-21

TITLE: SELF HELP GROUPS - DWACRA

UNIT-I

Self Help Groups – Self Help Groups in Andhra Pradesh – evolution of SHGs in Andhra Pradesh - DWACRA – Objectives of the programme link – ages with other programmes – savings and credit.

UNIT-II

DWACRA in Andhra Pradesh – SAPAP – Velugu's Vision – Velugu Strategy – SMERLC – Livelihoods Enhancement Program .

UNIT-III

Swarnajayanthi Gram Swarojgar Yojana – Social Mobilization of the poor – SGSY. Indira Kranthi Patham – Objectives of IKP.

UNIT-IV

Categorization of Groups – Community Investment Fund . SHG Movement – Evolution of SHG Federations – Financing of SHG Federations.

UNIT-V

Present Status of SHG Movement in Andhra Pradesh – SHG Bank Linkage Programme – Criteria for Selecting SHGs – State Government Support for the SHG Movement – State Revolving Fund – Waiving of Stamp Duty – Pavala Vaddi Scheme – Initiatives of NABARD in Andhra Pradesh.

DEPARTMENT OF HISTORY

The Boards of Studies meet took place on Wednesday, 04.03.2020 at 2.00 p.m. in the Arts Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

1. Dr.B.Emmanuel, Sir C.R.R. College (A), Eluru

External experts:

1. Dr.B.S.Santha Kumari, D.N.R. Autonomous College, Bhimavaram.

Faculty:

2. Dr.Mrs.Esther Kalyani
3. Ms.G.M.V.Ratna Kumari
4. Mrs.P.Anusha

Students:

5. S.Prasanthi, III B.A.HEP (TM)
6. M.Sunitha, II B.A. HEP (EM)

Resolutions:

1. The Board reviewed the existing syllabus and resolved not to make any changes in the syllabus as the present syllabus is quite apt and suitable for the students.

2. . The following are the titles of papers.

Paper I	Indian History and Culture (from the earliest times to 647 A.D.)
Paper II	Indian History and Culture (from 647 to 1526 A.D)
Paper III	Indian History and Culture (from 1526 to 1761 A.D)
Paper IV	Indian History and Culture (from 1757 to1964 A.D.)
Paper V	History of Modern World (from 1453 to 1848 A.D)
Paper VI	History and Culture of Andhra Desa (from Satavahanas to 1857 A.D.)
Paper VII	History of Modern World (from 1848 to 1945 A.D)

Cluster Papers:

Paper VIII A1 Cultural Tourism in Andhra Pradesh
Paper VIII A2 Popular Movements in Andhra Desa (1848 to 1956 A.D.)
Paper VIII A3 Contemporary History of Andhra Pradesh (from 1956 to 2014)

DEPARTMENT OF HISTORY

PAPER TITLES

	Semester	Paper	Title of the Paper
I B.A.	I	Paper I	Indian History & Culture (From Earliest Times to 647 A.D.)
	II	Paper II	Indian History & Culture (From 647 to 1526 A.D.)
II B.A.	III	Paper III	Indian History & Culture (From 1526 To 1761 A.D.)
	IV	Paper IV	Indian History & Culture (From 1757 To 1964 A.D.)
III B.A.	V	Paper V	History of Modern World 1453 – 1848 A.D.
		Paper VI	History and Culture of Andhra Desa (from Satavahanas to 1857 A.D.)
	VI	Paper VII	History of Modern World 1848-1945 A.D.
		Paper VIII A1	Cultural Tourism in Andhra Pradesh (Cluster elective)
		Paper VIII A2	Popular Movements in Andhra Desa (1848 to 1956 A.D.) (Cluster elective)
		Paper VIII A3	Contemporary History of Andhra Pradesh (from 1956 to 2014) (Cluster elective)
PROJECT WORK			

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU

I BA HISTORY I SEMESTER PAPER I SYLLABUS 2020-21

TITLE: INDIAN HISTORY AND CULTURE (From Earliest Times to 647 A.D.)

UNIT – I

1. Survey of the Sources – Literary Sources- Archaeological Sources.
2. Influence of Geography on History – Unity in Diversity.
3. Prehistoric period – Paleolithic, Mesolithic and Neolithic cultures.
4. Harappan Civilization: Origin, Extent, Urban Planning- Nature of Polity and Economic Organization, Society – Religious Conditions – Downfall of the Civilization.

UNIT – II

1. Vedic Civilization: Vedic Literature – Early Vedic and later Vedic Civilizations – Political, Economic and Religious Conditions in the Society - Emergence of Varna and caste system.
2. Rise of New Religious Movements: Conditions of 6^{th} Century B.C. – Jainism – Vardhamana Mahavira.
3. Buddhism – Gauthama Buddha-life and preachings.

UNIT – III

1. Brief Survey of Political Conditions in Ancient India -Mahajanapadas – Rise and Expansion of Magadha.
2. Persian, Alexander's Invasions – Causes and its effects on India.
3. The Mauryan Empire: Origin – Chandragupta Maurya - Ashoka's Dhama, It's nature and propagation – Mauryan Administration, Society, Economy, Religion, Art and Architecture – Downfall of the Mauryan Empire.

UNIT – IV

1. Post - Mauryan Period – Kushans – Kanishka –growth in commercial activity.
2. The Age of Satavahanas – Brief Political History - Gauthamiputrasatakrni - Socio Economic Religious Cultural Developments-Sangam age

UNIT – V

1. Age of Gupta-s Brief Political History - Development in the Gupta Period – Administrative System, Society, Economy, Art, Architecture. Literature, Science and Technology – Golden Age of Guptas
2. Post Gupta Period: Achievements of Harshavardhana – Hiuen Tsang.

I BA HISTORY II SEMESTER - PAPER – II SYLLABUS 2020-21
TITLE: INDIAN HISTORY AND CULTURE (FROM 647 TO 1526 A.D.)

UNIT – I

A brief political survey of South India - Pallavas – Political History of Pallavas and their contribution to Society and Culture – Art and Architecture - Political History of Chalukyan Period: Vatapi Chalukyas – Eastern Chalukyas of Vengi –- Development of Society – Economy and Culture.

UNIT – II

The Cholas: Political History of Cholas – Administration – Art and Architecture – India's Cultural contacts with South-East Asia and Sri Lanka - Age of the Rajputs: Political History of Rajputs – Socio-Cultural Conditions. - Muslim Invasions: Arabs, Ghazni and Ghori and their impact.

UNIT – III

Age of Delhi Sultanate: Slave Dynasty, Khilji Dynasty and Tughlak Dynasty – Polity and Administration under Delhi Sultanate, Society- Composition of Rural Society, Nobility - Status of Women, Economic and Technological developments. Agriculture – Industry - Trade and Commerce - Urbanization, Art and Architecture – Fine Arts - Education and Literature.

UNIT – IV

Impact of Islam on Indian Society and culture - Bhakti and Sufi Movements – Ramanujacharya, Kabir, Meerabai - Emergence of Composite culture. - The Kakatiyas: Political History of Kakatiyas – Socio – Economic and Cultural Conditions.

UNIT – V

Vijayanagara Empire: Brief Political History – Srikrishnadevaraya – Administration, Society, Economy, Art and Architecture - Vijayanagara Bahamani Kingdoms.

II BA HISTORY III SEMESTER - PAPER III SYLLABUS 2020-21
TITLE: INDIAN HISTORY AND CULTURE (From 1526 To 1761 A.D.)

UNIT – I

A Survey of Sources - Moghul and Marathas - Advent of Mughals: Political Conditions of 1526 A.D. – Invasions of Babur – Failures of Humayun.

UNIT – II

Second Afghan Empire – Shershaw – Achievements and his administration – Brief History of Moghuls From Akbar to Aurangazeb - Consolidation – Expansion and diplomacy under Mughul Empire up to 1707 A.D.

UNIT – III

Administration and Decline of Mughul Empire: Administrative Structure – Land Revenue – Munsadari and Jagirdari systems. Decline and disintegration of Mughul Empire, Causes for the downfall of the Empire.

UNIT – IV

Society - Social Composition - Ulema –Nobility - Peasantry – artisans – Slaves - Status of Women. Economy: Agriculture, Industries, Trade and Commerce, Economic and Technology development. Religion – Hindu – Muslim relations – Composite Culture. Education, Literature, Art, Architecture and Fine Arts.

UNIT – V

Rise of Marathas: Sivaji - Life and Achievements - Foundation of Maratha Power – Administration – Age of Peshwas – Battle of Panipat III – Decline of Marathas – Sikhs.

II BA HISTORY IV SEMESTER – PAPER IV SYLLABUS 2020-21

TITLE: INDIAN HISTORY AND CULTURE (From 1757 To 1964 A.D.)

UNIT – I

Introduction - Advent of European powers- Portuguese, Dutch, English and French – Anglo-French rivalry – Expansion and Consolidation of British Empire - India under East India Company - Permanent Land Revenue – Mahalwari system – Integration commercialization of Agriculture – Conditions of Peasants – Famines – Decline of Cottage industries - Subsidiary Alliance – Doctrine of Lapse.

UNIT – II

Anti Colonial Upsurge -– Revolt of 1857 – Causes, Nature and Result – India under British Crown.

UNIT – III

Factors for Social Changes – Christian Missionaries - Spread of Western Education – Emergence New Middle Class - Growth of the Press: English and in Indian Languages - Indian Renaissance: Socio – Religious Movements – Raja Rama Mohan Roy – Swami Dayananda Saraswathi – Swami Vivekananada – Viresalingam - Status of Women.

UNIT –IV

Indian National Movement: Factors for the growth of Nationalism – Indian National Congress – Moderates, Extremists and Revolutionaries – Vandemataram and Home Rule Movement - Gandhian Era – Non-Cooperation Movement – civil disobedience movement - Quit India Movement – Subhas Chandra Bose and Indian National Army.

UNIT – V

Emergence of Communal trends – Communal Politics and Partition - Independent India - Integration of Indian Princely States – Sardar Vallabhbhaipatel.

III BA HISTORY V SEMESTER - PAPER-V SYLLABUS 2020-21
TITLE: HISTORY OF MODERN WORLD 1453 -1848 AD

UNIT – I

Introduction to Modern World - Characteristic features of Renaissance - Significance of Reformation and Counter Reformation movements in Europe.

UNIT – II

Geographical Discoveries and Rise of Colonialism, Mercantilism and Commercial Revolution - Emergence of Modern World Economy.

UNIT –III

Emergence of Nation States in Europe – Nature of Feudalism in Europe and Asia.- Age of Revolutions - Glorious Revolution (1688) - American Revolution (1776).

UNIT –IV

French Revolution 1789 –France after French Revolution 1789 to 1804 - Napoleon Bonaparte – rise and fall.

UNIT – V

1815 Vienna Settlement – Metternich – 1830 July Revolution – 1848 February Revolution in France- Industrial Revolution and Rise of Capitalism - Impact on Asia and Africa.

III BA HISTORY V SEMESTER - PAPER-VI SYLLABUS 2020-21
TITLE: HISTORY AND CULTURE OF ANDHRA DESA (From Satavahanas to 1857)

UNIT – I

Sources - Influence of Geographical features on History - Andhra Satavahanas - Gautamiputra Satakarni – Ikshavkus – Vishnukundins - Early Pallavas - Growth and Spread of Jainism and Buddhism- Amaravathi School of Art- Important Buddhist and Jaina centers

UNIT – II

Chalukyas of Vengi - Socio-Economic and Cultural conditions - Chola and Kakatiya Rule in Andhra- Telugu Chodas of Nellore and Katama Raju – Haihayas of Palnadu - Brahma Nayudu and Nagamma- the Battle of Palnadu - Reddi Kingdoms - Society, Economy and Culture under Reddi rulers.

UNIT – III

Vijayanagara Empire - Krishna Deva Raya - Society, Economy and Culture under the rulers of Vijayanagara emperors - Qutb Sahi and Asaf Jahi rule in Andhra - Masulipatam port - Diamond mines of Andhra - Social and Religious Reform in Andhra - Vemana, Vira Brahmam and Annamayya.

UNIT – IV

Andhra under Colonial Rule: Coming of European Merchant Companies - Battle of Bobbili - Acquisition of Andhra by the British - Early Uprisings in Andhra - Acquiring of Rayalaseema - Palegars and Revolt of Uyyalavada Narasimha Reddy.

UNIT – V

East India Company Administration - Land Revenue Settlements - Sir Thomas Munroe – Famines - Impact of Industrial Revolutions on Andhra Economy - Impact of 1857 Revolt in Andhra.

III BA HISTORY VI SEMESTER - PAPER-VII SYLLABUS 2020-21
TITLE: HISTORY OF MODERN WORLD 1848 – 1945 A.D.

UNIT – I

IIFrenchI Republic – Napoleon III – IIIrd French Republic – Eastern Question – Crimean War - Meizi Restoration and Modernization of Japan.

UNIT – II

Unification of Italy – Mazzini – Cavour – Garibaldi – Unification of Germany – Internal and External Policy of Bismark - Eastern Question – Balkan Wars.

UNIT – III

World between 1914-1945 - Rivalry among Colonial Powers - Imperialist Hegemony - Causes and consequences of first World War – 1919 Treaty of Versailles - League of Nations – Aims, Organs, Achievements and Failures – Modern Turkey – Mustafa Kemal Pasha.

UNIT – IV

Fascism in Italy – Mussolini - Nazism in Germany – Hitler – Brief Political History of Russia 1800 to 1917 – Russian Revolution 1917– Lenin – Stalin - Revolutions in China – Sunyet sen.

UNIT -V

Causes and consequences of Second World War 1939-45 – UNO – Aims, Organs –World after IInd World War – Cold War – Peoples Republic in China – Mao Se tung.

III BA HISTORY VI SEMESTER - PAPER-VIII A1 SYLLABUS 2020-21
TITLE: CULTURAL TOURISM IN ANDHRA PRADESH (Cluster Elective)

UNIT – I

Concepts of Tourism: Nature – scope – definition – Tourists and Excursions – Domestic and International Tourists.

UNIT – II

Types of Tourism: Heritage Tourism – Pilgrimage Tourism – Recreation Tourism – Sports and Adventure Tourism – Advance Tourism – Health Tourism – Environment Tourism.

UNIT – III

History and Tourism – Heritage Sites – Definition – Ancient Monuments. Preservation Act of 1904, Act of 1958 and Act of 1972 – Archaeocological survey of India – Stage Museums.

UNIT – IV

Planning and Development of A.P. Tourism: APTDC – Aims and Objectives – Fairs and Festivals – Andhra Cuisine – Restaurants – Eco Tourism – Beaches and Hill Resorts – Mountaineering – Tourist Places in A.P.

UNIT –V

Modalities of conducting Tourism: Field work – Visit to a Site – Conduct of Research – Preparation of Project report.

References:

1. APTDC Publications.
2. Ashorth G.J., Marketing in Tourism Industry
3. Bhatia A.K., Tourism Development
4. Clare, Gunn, Tourism Planning
5. Khan, Nafees A, Development Tourism in India
6. Krishna K Karama, Basics of Yourism
7. Marrison A.M., Hospitality and Travel Marketing
8. Ranga Mukesh, Tourism Potential in India
9. Sarkar H, Museums and Protection of Monuments and Antiquities in India
10. Vijayalaxmi, K.S., History of Tourism.

Field Trip: Compulsory field trip to destinations of architectural, archaeological, historical and cultural importance is to be conducted. Students should be made to prepare detailed reports on the hand-on experience they gained in such trips. Students should be encouraged to create **Blogs** for local site seeing places and to write and organize articles on those spots.

III BA HISTORY VI SEMESTER - PAPER-VIII A2 SYLLABUS 2020-21
TITLE: POPULAR MOVEMENTS IN ANDHRA DESA (1848 TO 1956 A.D.)

UNIT – I

Social and Self respect Movements: Social conditions – Kandukuri Veeresalinga,. Raghupati Venkata Rathnam Naidu, Guruzada Apparao, Komarraju Venkata Laxmana Rao; New Literary Movements: causes – Rayaprolu Subbarao, Viswanatha Sathyanarayana, Gurram Jashua, Boyi Bheemanna, Sri Sri – Impact.

UNIT – II

Freedom Movement in Andhra (1885-1920): Contributory factors – Vandemataram Movement – Swadeshi and Boycott programs – Glorious events at Rajahmundry, Kakinada, Kotappakonda and Tenali – Home Rule Movement in Andhra.

UNIT – III

Freedom Movement in Andhra (1920-1947): Non-cooperation Movement – chirala Perala, Palanadu and Pedanandipadu activities – Alluri Seetarama Raju and Rama Revolt (1922-24) – Anti Simon Commission Movement – Civil Disobedience Movement – Quit India Movement.

UNIT – IV

Movement for Separate Andhra State (1953): Causes – Andhra Maha Sabha – Andhra Provincial Congress Committee – Andhra University – Conflict between Coastal Andhra and Rayalaseema – Sri Bagh Pact – Constitution of Committees and their contribution – Martyrdom of Potti Sriramulu – Formation of separate Andhra State.

UNIT –V

Movement for formation of Andhra Pradesh (1956): Visalandhra Mahasabha – Role of Communists – States Reorganization Committee – Gentlemen's Agreement – Formation of Andhra Pradesh

III BA HISTORY VI SEMESTER – PAPER VIII A3 SYLLABUS 2020-21

TITLE: CONTEMPORARY HISTORY OF ANDHRA PRADESH

(From 1956 TO 2014) - Cluster Elective

UNIT – I

Socio-Economic changes in Andhra Pradesh – River Projects and infrastructural development – Education and Scientific Progress – Regional Politics – Emergence of Telugu Desam Party.

UNIT – II

Growth of Leftist Ideology – Marxist and Radical Literature – Naxalbary Movement – Communist Activities – Electoral Politics – Present status of Communist Movement.

UNIT – III

Dalit Movement – Understanding Untouchability – Education – Literature – Struggle for Identity – Demand for Political Space.

UNIT – IV

Early trendsw towards Bifurcation: Jai telengana Movement (1969) – Mulki Rules – Legal Battle – Jai Andhra Movement (1972) – Six point Formula (1973).

UNIT –V

Bifurcation of Andhra Pradesh: Power Politics – Economic Discontentment – Riparian Disputes – Unemployment – Foundation of Telangana Rastra Samiti – Movements for separate Telangana and unified Andhra Pradesh – Formation of Telengana State (2014).

DEPARTMENT OF POLITICS

Minutes of the meeting of the Boards of Studies in Politics on Thursday, 05.03.2020 at 2.00 p.m. in Room No.63.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

1. Mr.N.Srinivasa Rao, Sir C.R.R. College (Autonomous), Eluru

External experts:

2. Dr.G.David Livingstone, D.N.R. Autonomous College, Bhimavaram.

Faculty:

3. Mrs.R.Chittemma
4. Ms.Y.Sailaja

Students:

5. V.Anusha, III B.A.HEP(EM)
6. C.Anuhya, II B.A. HEP(EM)

Resolutions:

The members of the Board of Studies of Politics have reviewed the total syllabi and follow the existing syllabus.

- It was resolved to follow the existing syllabus for all Semesters including Cluster Papers for the academic year 2020-21.

The following are the titles of papers :

Paper I	Basic Concepts of Political Science
Paper II	Political Institutions - Concepts Theories and Institutions
Paper III	Indian Constitution
Paper IV	Indian Political Process
Paper V	Indian & Western Political Thought
Paper VI	Principles of Public Administration
Paper VII	Local Self-Government in Andhra Pradesh
Paper VIII A1	International Relations
Paper VIII A2	Indian Foreign Policy
Paper VIII A3	Contemporary Global Issues

Add-on-Course: Women in Indian Politics

DEPARTMENT OF POLITICS

PAPER TITLES

	Semester	Paper	Title of the Paper
I B.A	I	Paper I	Basic Concepts of Political Science
	II	Paper II	Political Institutions - Concepts Theories and Institutions
II B.A	III	Paper III	Indian Constitution
	IV	Paper IV	Indian Political Process
	IV	Add-on Course	Women in Indian Politics
III B.A	V	Paper V	Indian & Western Political Thought
		Paper VI	Principles of Public Administration
	VI	Paper VII	Local Self-Government in Andhra Pradesh
		Paper VIII A1	International Relations (Cluster elective)
		Paper VIII A2	Indian Foreign Policy (Cluster elective)
		Paper VIII A3	Contemporary Global Issues (Cluster elective)
PROJECT WORK			

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU

I BA POLITICS I SEMESTER – PAPER I SYLLABUS 2020-21

TITLE: BASIC CONCEPTS OF POLITICAL SCIENCE

UNIT – I

Explanatory Frameworks of Politics

1. What is Politics: Nature and Scope of Political Science
2. Approaches to the Study of Politics: Normative, Historical, Empirical Traditions
3. Relations with other Social Sciences.

UNIT – II

What is the State

1. Origin and Evolution of the Modern State
2. Different Conceptions on the role of the Modern State: Social Democratic and Neo Liberal conceptions

UNIT – III

Nations and Nationalism

1. Conceptual Distinction between Nationality and Nation
2. Varieties of Nationalism: Culture and Civic Nationalism

Sovereignty: Meaning and definitions Characteristics and kinds of sovereignty. Austin's theory of sovereignty.

UNIT – IV

1. Evolution of Rights: Civil and Social rights
2. Citizenship: Universal and Differential Citizenship

UNIT – V

Freedom: Negative and Positive Freedom

2. Equality: Formal Equality, Equality of Opportunity, Equality of Outcome
3. Justice: Justice based on Needs, Deserts and Rights

I BA POLITICS II SEMESTER – PAPER II SYLLABUS 2020-21
TITLE: POLITICAL INSTITUTIONS-CONCEPTS THEORIES AND INSTITUTIONS

UNIT -I

Constitutionalism

1. The Purpose of Constitutional law, Theory of Separation of Powers
2. Structural Forms of the Modern State: Basic features of Parliamentary and Presidential forms of Government

UNIT -II

Territorial Division of Authority of the Modern State

1. Basic features of Federal form of Government
2. Basic features of Unitary form of Government

UNIT -III

Institutional forms of the Modern State

1. Democracy: Basic features of Classical and Modern Representative Democracy
2. Models of Democracy: Procedural Democracy and Substantive Democracy

UNIT -IV

Legislature and executive

1. Unicameralism and Bicameralism, Functions of legislature, Law making process
2. Meaning and importance of executive, Kinds of Executive - functions of executive

UNIT -V

Judiciary and Democratic State

1. The nature, role and functions of the Judiciary
2. Judicial Review: Debates on the Supremacy of legislature or Judiciary in the protection of Constitutional law

II BA POLITICS III SEMESTER – PAPER III SYLLABUS 2020-21
TITLE: INDIAN CONSTITUTION

UNIT – I

The Making of the Constitution

1. The ideological legacy of the Indian National Movement on the Constituent Assembly
2. The Nature and Composition of the Constituent Assembly

UNIT – II

Philosophical Premises of the Indian Constitution

1. Preamble: The underlying values of the Indian Constitution
2. Salient features of the Constitution of India

UNIT – III

Fundamental rights and Directive principles of State Policy

1. Individual and Collective Rights: Limitations on the fundamental Rights
2. Judicial Interpretation of Fundamental Rights
3. The doctrine of 'Basic Structure' of the Constitution: KesavanandaBharathi Case

UNIT – IV

Indian Federalism

1. Unitary and Federal features in the Indian Constitution
2. Tension Areas between the Union and State Governments
Legislative, Administrative and Financial Spheres

UNIT – V

Working of the Indian Constitution

1. Working of Indian Parliament.
2. The Values of the Indian Constitution and Ushering of Social Revolution in India
. The causes for the Ascendency of the Executive over legislature and Judiciary;
3.Major Controversies regarding the Amendments to the Constitution
4. Nature and Role of Higher Judiciary in India; Recent Debates on the mode of appointment of Judges

II BA POLITICS IV SEMESTER – PAPER IV SYLLABUS 2020-21
TITLE: INDIAN POLITICAL PROCESS

UNIT-I

Approaches to Study the Political Processes in India

1. Theory of Modernization: Transition from Tradition to Modernity
2. Marxian Approach: Transition from pre-capitalism to capitalism

UNIT-II

Religion and Politics

1. Competing Communalisms: Majoritarian and Minoritarian
2. Debates on Secularism; Role of the State towards religion

UNIT -III

Party and Electoral Processes in India

1. Electoral Trends of the lokSabha from 1952 to 2014:From the One Party Congress System to Multi Party Coalitions
2. Determinants of Voting Behavior in India;Caste,Class,Patronage, Money etc.
3. Evolution of Party System in India: the Ideology and Social bases of major
4. Political Parties: INC,BJP,CPM, DMK,BSP,TDP YSRCP

UNIT -IV

Political Development in AP: Important political developments in AP since 1956, Telangana agitation, Samaikya Andhra agitation and Naxalists movement in Andhra Pradesh. Recent A.P.

UNIT -V

National Integration, Nation Building

Swatcha Bharath and "Make in India and Made in India" – National skill development corporation.

III BA V SEMESTER POLITICS PAPER-V SYLLABUS 2020-21
TITLE: INDIAN AND WESTERN POLITICAL THOUGHT

UNIT – I

Ancient indian political thought

1. Sources of Ancient Indian political thought
2. Manu :Varnadharma and Dandaneeti
3. Kautilya : State and Society

UNIT – II

Renaissance – Early and religious Nationalism

1. Rammohun Roy: Religious and Social Reform
2. DadabaiNaoroji: Drain Theory and Poverty
3. Savarkar V D : Hindutva or Hindu Cultural Nationalism
4. Mohammed Iqbal: Islamic Communitarian Nationalism

UNIT – III

Modern indian political thought

1. Gandhi : Ahimsa and Satyagraha
2. Nehru : Democratic Socialism
3. Ambedkar : Annihilation of Caste
4. M.N. Roy : Radical Humanism

UNIT – IV

Western political thought I

1.Plato Aristotle
2.St. Thomas Aquinas, Machiavelli

UNIT – IV

Western political thought II

1. Thomas Hobbes, John Locke, J.J. Rousseau,
2. Jenny Bentham, J.S. Mill, Hegel, Marx

III BA V SEMESTER POLITICS PAPER-VI SYLLABUS 2020-21
TITLE: PRINCIPLES OF PUBLIC ADMINISTRATION

UNIT – I

Nature of Public Administration
1. Meaning, Nature and Scope of Public Administration
2. Significance of Public Administration
3. Public and Private Administratio

UNIT – II

Administrative Theories
1. Classical Theory-Henry Fayol
2. Scientific management theory – F.W.Taylor
3. Human Relations theory-Elton Mayo
4. Ecological theory –F.W.Riggs
5. Rational Decision making theory-Herbert Simon

UNIT – III

Principles and structure of Organization
1. Hierarchy- Span of control-Unity of command
2. Decision Making-Communication
3. Co-ordination-leadership
4. Chief Executive-Types and Functions
5. Department-Bases of Departmentalization
6. Line and Staff Agencies

UNIT –IV

Personnel Administration
1 Recruitment- Training
2 Promotion - Superannuation

UNIT – V

Theories of Motivation
1. Meaning and importance of Motivation
2. Hierarchy of needs theory; Abraham Maslow
3. Theories of X and Y ; Donglas Mc Gregor
4. Importance of Public Administration in the contest of LPG.

III BA VI SEMESTER POLITICS PAPER-VII SYLLABUS 2020-21
TITLE: LOCAL SELF-GOVERNMENT IN ANDHRA PRADESH

UNIT-I

Evolution of Local Self-Government in India
1. Constitutional Provisions on local Self-Government
2. Recommendations of Balwantrai Mehta and Ashok Mehta Committees on Local Self - Government

UNIT -II

Evolution of Local Self-Government in India
1. Constitutional Provisions on local Self-Government
2. Recommendations of Balwantrai Mehta and Ashok Mehta Committees on Local Self - Government

UNIT -III

Structure and functions of Panchayati Raj in Andhra Pradesh
1. Gram Panchayat
2. Mandal Parishad
3. ZillaParishad
4. Structure and functions of Urban local bodies in Andhra Pradesh; Nagar Panchayat Municipalities and Municipal Corporations
5. Collector Administration

UNIT -IV

Strategies of Rural Development
1 Strategies of development of rural areas
2 Special programme strategies IRDP; DRDP; IADP; ITDA
3 People's participation in Rural development

UNIT-V

Role of leadership and Emerging Challenges
1. Emerging patterns of leadership
2. Problems of autonomy: Financial and Administrative spheres
3. People's participation in Rural development

III BA VI SEMESTER POLITICS PAPER-VIII A1 SYLLABUS 2020-21
TITLE: INTERNATIONAL RELATIONS (Cluster Elective)

UNIT –I

Basic Concepts of International Relations
1. Meaning, Nature and Scope of International Relations
2. (a). Balance of power (b). National interests
(c). Collective Security (d). Diplomacy

UNIT – II

Approaches to the study of International Relations
1. Idealism – Woodrow Wilson
2. Classical Realism – Hans Morgenthau
3. Neo – realism – Kenneth Waltz

UNIT – III

Phases of International Relations (1914-1945)
1. Causes for the First World War
2. Causes for the Second World War

UNIT –IV

Phases of International Relations (1945 onwards)
1. Origins of First Cold War
2. Rise and Fall of Détente
3. Origins and the End of Second Cold War

UNIT – V

International Organisation
1. The role of UNO in the protection of International Peace
2. Problems of the Third World : Struggle for New International Economic Order101

III BA VI SEMESTER POLITICS PAPER-VIII A2 SYLLABUS 2020-21

TITLE: INDIAN FOREIGN POLICY (Cluster Elective)

UNIT –I

Evolution of Indian Foreign of Policy

1. Determinants of Indian Foreign of Policy
2. Continuity and change in Indian Foreign Policy

UNIT – II

Non-Alignment and UNO

1. The role of India in the Non-Alignment Movement
2. Relevance of Non-Aligned Movement in the Contemporary World
3. Role of India in the UNO in protection of International Peace

UNIT – III

India's Relation with USA and China

1. Indo- US Relations: Pre- Cold War Era, Post- Cold War Era
2. India – China Relations: Pre- Cold War Era, Post- Cold War Era

UNIT –IV

India and her Neighbours

1. Indo- Pakistan Relations
2. India's role in South Asian Association of Regions Cooperation (SAARC)102

UNIT – V

India's relation with USSR and France

1. India – Russia Relations
2. India – France Relations

III BA VI SEMESTER POLITICS PAPER VIII A3 SYLLABUS 2020-21

TITLE: CONTEMPORARY GLOBAL ISSUES (Cluster Elective)

UNIT – 1

Conceptions of Globalization

1. Economic Conception of Globalization
2. Political Conception of Globalization

UNIT – II

Anchors of Global Political Economy

1. International Monetary Fund – Nature, Role and Functions
2. Work Bank-Nature, Role and Functions
3. World Trade Organization: Origin, Nature and role in the context of Globalization

UNIT – III

Nation State and Globalization

1. The role of Nation State in the context of Globalization
2. Consequences of Globalization – Rise of Inequalities within and across Nations

UNIT – IV

Contemporary Global issues

1. Ecological Issues: International Agreements on Climate Change
2. International Terrorism: Non- State Actors and State Terrorism

UNIT - V

The impact of Nuclear Weapons

1. Disarnament and Arms Race
2. Socio-economic impact of the Arms Race

II BA IV SEMESTER POLITICS CERTIFICATE COURSE - 2020-21

TITLE: WOMEN IN INDIAN POLITICS (Add-on Course)

UNIT – 1

1. Introduction –objectives
2. Role of women in Freedom Movement
3. Movement of Right to Vote

UNIT – II

1. Role of women in politics after independence
2. Women representation in Parliament
3. Women representation in different state legislatures

UNIT – III

1 .Women representation in the union cabinet
2. Women representation in AP state ministerial council

UNIT – IV

1. Women representation in local bodies after 73rd&74th constitutional amendments
2. Reservation for women in legislatures and Local bodies

UNIT - V

1. Various limits on woman's participation in Politics and their impact
2. National Women's Commission
3. State Women's Commission

DEPARTMENT OF PSYCHOLOGY

The Psychology Boards of Studies meeting was held on Friday, 13.03.2020 at 10.00 a.m. in the Psychology Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.P.Raja Sekhar, Adikavi Nannaya University, Rajamahendravaram

Faculty:

3. Dr.Sr.Marietta D' Mello
4. Ms.G.Radha Lakshmi

Students:

5. Ch.S.L.S.Sindhu, III BA EPSW
6. D.Lakshmi Kalyani, II BA EPSW

Resolutions:

The Board reviewed the present syllabus and resolved not to make any changes in the syllabus as the present syllabus is quite apt and suitable for the students.

- The Board suggested to have students exchange programme in order to provide to the students a broad perspective of the subject on Psychology.
- It was resolved to continue Field trips for the I, II, and III Year students.
- It was resolved that the students share their experience and give motivational classes for 10^{th} Class students specially to the Government Schools.
- It was resolved to have practicum instead of assignments in order to provide practical knowledge of the subject.
- It was resolved to substitute Depression scale to Beck Depression Inventory for the III Years in the V Semester in VI Paper, as it is more apt to the students.

DEPARTMENT OF PSYCHOLOGY

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	General Psychology
	II	Paper II	General Psychology
II Year	III	Paper III	Social Psychology
	IV	Paper IV	Social Psychology
III Year	V	Paper V	Child Psychology
		Paper VI	Psychopathology
	VI	Paper VII	Child & adolescent psychology
		Paper VIII A1	Psychopathology
		Paper VIII A2	Counselling Psychology
		Paper VIII A3	Educational Psychology
PROJECT WORK			

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I BA PSYCHOLOGY I SEMESTER PAPER I SYLLABUS 2020-21
TITLE: GENERAL PSYCHOLOGY

UNIT-I: Introduction

A) Historical foundations of Psychology: Definition, Nature and Scope of Psychology; Schools and fields of psychology.

B) Methods of Psychology- Introspection, Observation, Case Study, Interview, Survey and Experimental Method

UNIT-II: Biological Basis of Behavior

A) Neuroanatomy - Structure of the neuron; The Autonomic Nervous System-Structure & function; The Central Nervous System: Spinal cord - structure and function; The Brain - hindbrain, midbrain & forebrain.

B) Hormones and Behavior-Main endocrine glands, their hormone products and principal effects of the hormones - Mechanisms of Heredity and Environment

UNIT-III: Attention and Perception

A) Types and determinants of Attention, Distraction, Division, Fluctuation and Span of attention

B) Perception- Perceptual constancies, illusions, Organizational factors of perception, Perceptual Constancies

UNIT-IV: Motivation and Emotion

A) Motivation – Definition and types of motives- Bio and Psycho- Social Motives, Theories of motivation- Maslow's Theory of Motivation and Freud's Unconscious Motivation.

B) Emotions – Definition and Nature of Emotions, Types of emotions, Theories of emotions- James- Lange, Cannon-Bard

UNIT – V:

Personality : Definition ,meaning , nature,approacher to personality –Type , Behaviouristic , Humanistic and Psychosexual approaches **.**

REFERENCE BOOKS:

1. Morgan, Clifford.T., King, Richard.A., Weisz,John.R., Schopler, John (1993). Introduction to Psychology, TataMcGraw Hill.
2. Marx, Melvin H. (1976). Introduction to Psychology - Problems, Procedures & Principles, MacMillan Publishing Co.
3. Hilgard, E.R., Atkinson, R.L., Atkinson, R.C., (1979): Introduction to Psychology, Harcourt Brace Jovanovich. Inc.

I BA PSYCHOLOGY II SEMESTER PAPER II SYLLABUS 2020-21
TITLE: GENERAL PSYCHOLOGY

UNIT-I: Learning

A) Definition of learning - Classical conditioning, Operant Conditioning, Learning by insight and observation, Latent learning.
B) Role of motivation and maturation in learning, Reward and Punishment, Learning curves, Efficient methods of learning, Transfer of learning.

UNIT-II: Memory and Forgetting

A) Meaning and types of Memory, Methods of measuring memory, Information processing Model of Memory.
B) Forgetting- meaning, nature and causes; Methods to improve memory

UNIT-III: Thinking

A) Definition, Mental Images, Concepts, Reasoning- Deductive and Inductive Reasoning
B) Problem Solving- Impediments to Problem Solving
C) Creative thinking- Meaning and stages of creative thinking, Characteristics of Creative People.

UNIT-IV: Intelligence

A) Intelligence Definition- Theories: Spearman Two Factor Theory, Thurstone's Multi Factor Theory and Sternberg's Triarchic Theory of Intelligence
B) Measurement of Intelligence - Concept of IQ, Types of Intelligence tests, Intellectually gifted and Retardation.
C) Role of heredity and environment in intelligence

UNIT-V: Aptitude and Interest

A) Meaning-Nature of aptitude-Aptitude, ability, achievement.
B) Difference between Intelligence and Aptitude-Aptitude and Interest.
C) Measurement of Aptitude –Utility of Aptitude tests.

REFERENCE BOOKS:

1. Morgan, Clifford.T., King, Richard.A., Weisz, John.R., Schopler, John (1993): Introduction to Psychology, TataMcGraw Hill.
2. Marx, Melvin H. (1976) Introduction to psychology - Problems, Procedures & Principles, MacMillan Publishing Co.
3. Hilgard, E.R., Atkinson, R.L., Atkinson, R.C., (1979): Introduction to Psychology, Harcourt Brace Jovanovich. Inc.

II BA PSYCHOLOGY III SEMESTER PAPER III SYLLABUS 2020-21
TITLE: SOCIAL PSYCHOLOGY

UNIT-I

Nature and Scope of Social Psychology: Definition, Nature and Scope. Importance of Social Psychology.

UNIT-II

Methods of Social Psychology - Observation method, Survey method, Correlational method, Field study and Experimental method.

UNIT-III

Social Perception (Understanding Others): Attribution – Theories of Attribution:– Theory of Correspondent Inference, Kelly's theory of causal attribution/Errors in Attribution – Fundamental Attribution Error, Actor- Observer effect, Self Serving Bias. Impression formation and Impression Management – Techniques of Impression Management.

UNIT-IV

Communication: Definition, nature and types of communication. Barriers of effective Communication.

UNIT-V

Attitudes: Definition, Distinctive features of Attitudes, Formation of Attitudes, Measurement of Attitudes – Likert of Summated ratings, Bogardus method of Social Distance, Thurstone's Equal appearing intervals method. Cognitive Dissonance, Reducing Dissonance.

II B.A PSYCHOLOGY IV SEMESTER PAPER IV SYLLABUS 2020-21
TITLE: SOCIAL PSYCHOLOGY

UNIT-I

Prejudice: Prejudice and Discrimination – Nature and Origin of Prejudice, Techniques of reducing Prejudice.

UNIT-II

Aggression - Definition, Determinants of Human Aggression – Social, Personal, and Situational factors – Theoretical Perspectives on Aggression:– Biological Perspective, Drive Theories. General Affective Aggression model/ prevention and control of Aggression.

UNIT-III

Group and Individuals;

A) Group - Definition and Types of Groups, Group functions - Roles, Status, Norms, Cohesiveness and Conformity.

B) Group and Individual performance - Social facilitation, Social loafing. Decision making by Groups.

UNIT-IV

Leadership: Definition- Traits of a Leader, Type of Leaders – Autocratic, Democratic and Charismatic Leaders. Classic studies on leadership/leader behavior – initiating structure and consideration.

UNIT-V

Rumors and propaganda:

A) Rumors: Definition, meaning, characteristics, classification of rumour.

B) Propaganda: Definition, need for propaganda/propaganda and Education/ propaganda and advertisement/ kinds of propaganda/ principles of propaganda/ Techniques of propaganda.

III BA PSYCHOLOGY V SEMESTER - PAPER V SYLLABUS 2020-21
TITLE: CHILD PSYCHOLOGY

UNIT-I

Introduction, importance of Developmental Psychology:

Meaning, Nature and importance of Developmental Psychology.

UNIT-II

Growth and development : Concept of growth and development/Principles of development. Stages of human life span. Methods of studying human development. Factors influencing growth and development: Heredity and environment.

Early Stages of Development.

UNIT-III

Prenatal Period: Characteristics, Importance of conception. Prenatal stages, factors influencing prenatal development, Hazards.

UNIT-IV

Infancy: Characteristics, adjustments in infancy, conditions influencing postnatal life (pre maturity, multiple births, post maturity), physical development, activities-sensitivities/and capacity for learning/emotions of the infants/Hazards.

UNIT-V

Babyhood: Characteristics, developmental tasks, physical development, physiological functioning, muscle control, speech development, emotional behavior, social responses, play interests, development of understanding and morality, sex role typing and family relations, personality development,Hazards.

III BA PSYCHOLOGY V SEMESTER PAPER-VI SYLLABUS 2020-21
TITLE: PSYCHOPATHOLOGY (ABNORMAL BEHAVIOR)

UNIT-I

Introduction to Abnormal Psychology: Defining abnormality. Abnormal psychology – past and present views and treatments. Approaches to psychopathology – psychodynamic, behavioural, cognitive behavioral, existential and biological.

UNIT-II

Classification and Causes of Abnormal: Classification of disorders - Etiological factors in abnormality - Stress, coping and the ego- defense mechanisms.

UNIT-III

Anxiety Disorders – Nature and Symptoms: Generalized anxiety disorder, Phobias, panic disorders, Obsessive – compulsive disorder, Post – traumatic stress disorder.

UNIT-IV

Somatoform Disorders Nature and Symptoms: Conversion disorders – with motor/ sensory symptoms or deficits, with seizures. Pain disorders – headache, migraine, low back pain, etc. Acute versus chronic pain, cognitive perception of pain, individual differences in reaction to pain. Hypochondrasis.

UNIT-V

Dissociative Disorders Nature and Symptoms: Amnesia and fugue - Dissociative identity disorder.

III BA PSYCHOLOGY VI SEMESTER PAPER-VII SYLLABUS 2020-21
TITLE: CHILD AND ADOLESCENT PSYCHOLOGY

UNIT-I

Early Childhood – General characteristics – developmental taks, Physical development skills of early childhood, speech development, emotional patterns of early socialization and sex role typing play interest, development of understanding and morality, family relationships, personality development, hazards.

UNIT-II

Late Childhood:

A) General characteristics / development tasks/skills of Late Childhood/speech development/ emotional expression.

B) Social behavior and sex role typing in late childhood/play interest/ development of understanding and moral attitudes/ family relationships/ personality changes/ hazards.

UNIT-III

Puberty - General characteristics/ developmental tasks/criteria causes and age of puberty/puberty growth spurt/body changes in puberty/effects of pubertal changes/common concerns during puberty/hazards.

UNIT-IV

Adolescence:

A) General characteristics/developmental tasks/ physical changes/ emotionality during adolescence.

B) The family - the peer group – social behavior, interests in adolescence.

C) Personality development**:** Moral Development/The Quest for identity formation.

D) Problems of Adolescence – Juvenile Delinquency Drug usage, Adolescent suicide

UNIT-V

Theories of Development:

A) Introduction to Theories of Development - Gesell's Developmental theory, Freud's Psychosexual stages.

B) Erikson's psychosocial stages of development,Piaget's Cognitive development , Kohlberg's theory of moral development, Bronfenbrenner's Ecological theory.

III BA PSYCHOLOGY VI SEMESTER PAPER-VIII A1 SYLLABUS 2020-21
TITLE: PSYCHOPATHOLOGY (ABNORMAL BEHAVIOR) - Cluster

UNIT-I

Psychotic Disorders: Nature and Symptoms, Schizophrenia and its sub types- paranoid type, catatonic type, Hebephrenic type, Mood disorders – unipolar and bipolar disorders.

UNIT-II

Developmental Disorders: Nature and Symptoms, Disruptive behavior – attention deficit hyperactivity disorder, Conduct disorder, Habit disorders, Eating disorders, Emotional disorders, anxiety disorders-(separation, anxiety, avoidant disorders, and over anxious disorders). Childhood depression, Specific development disorders – autism, Mental Retardation.

UNIT-III

Personality Disorders: Nature and Symptoms, Antisocial personality disorders, Paranoid personality disorders, Dependent personality disorders, Histrionic personality disorders, Obsessive – compulsive personality disorders.

UNIT-IV

Substance Related & Addictive Disorders: Alcohol abuse and Dependence, Drug Abuse and Dependence. Other Addictive Disorders – Extreme obesity, pathological gambling.

UNIT-V

Treatment of Disorders: Psychodynamic approach - Behavioral approach - Humanistic existential approach - Cognitive approach.

III BA PSYCHOLOGY VI SEMESTER PAPER-VIII A2 SYLLABUS 2020-21
TITLE: COUNSELLING PSYCHOLOGY - Cluster

UNIT-I

Introduction: Definition and Nature – Counselling as a profession – Training, activities and professional ethics – The effective counselor – Personality characteristics, skills of counselor.

UNIT-II

Counselling Process: stages of counseling – Counseling relationship – Initial interview – Assement for counseling.

UNIT-III

Counselling Theory: Individual counseling theory Psychoanalytic, Humanistic, Behavioral, cognitive, Brief approaches – Types of counseling.

UNIT-IV

Counselling Techniques: Group techniques – Multi-cultural techniques with special reference to Indian techniques such as Yoga and Meditation. – Counseling and technology.

UNIT-V

Counselling Applications: Family and couples counseling – Child counseling – School and Career counseling – Workplace counseling – Crisis intervention – Counseling for wellness.

Reference Books:

Feltham, C and Horton, I. (2000), Handbook of Counseling and Psychotherapy, London:Sage.
Gibson, R.L. and Mitchell, M.H.(2003), Introduction to Counseling and Guidance (6th Ed.), New Delhi: Pearson India.
Gladding, S.T. (2009), Counselling: A comprehensive profession (6th Ed.), New Delhi:Pearson India.
Maria, G (Ed) (2010), Psychology in India, Volume 3: Clinical and Health Psychology, New Delhi: Pearson India.
Rao, S (2002), Counselling and Guidance (2nd ed.) New Delhi: McGraw Hill

III BA PSYCHOLOGY VI SEMESTER PAPER-VIII A3 SYLLABUS 2020-21
TITLE: EDUCATIONAL PSYCHOLOGY - Cluster

UNIT-I

Educational Psychology:- Education and Educational Psychology, Educational Psychology and Educational Philosophy, Nature of Educational Psychology, scope of Educational Psychology, need of Educational Psyhology for a teacher.

UNIT-II

Mental Hygiene in Education: What is Mental Hygiene aims and purposes of Mental Hygiene. Characteristics of a Mentally healthy individual. Factors responsible for poor mental health and mental ailments of children. What can school and teachers do for the proper mental health of children? Defense or adjustment mechanism, questions and problems.

UNIT-III

Guidance in education: What is guidance? (Meaning), Need of guidance to the students, types of guidance, What is Educational guidance? Need of educational guidance, How to impart Educational guidance to pupils?

UNIT-IV

Vocational Guidance: What is vocational guidance? Need of vocational guidance to the pupils. The nature purposes of Vocational guidance. How to impart vocational guidance to the pupils? Nature and meaning of personal guidance. How to render personal or psychological guidance?

UNIT-V

Adjustments, frustration, conflicts: Adjustments (Meaning and Definitions, areas or aspects of adjustments, characterstics of a well adjusted individual).
Frustration (Meaning and Definitions, why one gets frustrated, the cause of frustration, reaction to frustration).
Conflict (Meaning and Definition, types of conflicts sources of conflicts).

Reference books:
Educational Psychology – S.K.Mangal
Advanced Educational Psychology (2007) – S.K.Mangal
Educational Psychology (1993) – S.B.Kakkar
Educational Psychlogy (1992) – Jitendra Mohan
Educational Psychology – Anitha Woolfolk
Guidance and Educational Counselling (1999) – S.K.Chibber

DEPARTMENT OF SOCIAL WORK

The Boards of Studies meet in Social Work was held on Friday, 06.03.2020 at 2.00 p.m. in the Department of Social Work.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.K.Satyanarayana, K.G.R.L. College (A), Bhimavaram

External experts:

3. Dr.K.Gowtham Kumar, D.N.R. College (A), Bhimavaram

Faculty:

4. Dr.Sr.Marietta D' Mello
5. Ms.S.Surekha

Students:

6. M.Dharani, III B.A. EPSW
7. M.Lavanya Krishn, II B.A. EPSW

Resolutions:

- The Board reviewed the present syllabus of all the Semesters and add some topics in V Semester Paper V (Fields of Social Work-I) and Paper VI (Non-Governmental Organisations).
- It was resolved to replace the Cluster Paper VIII A2 – Social Work and HIV/AIDS with Counselling – Techniques and fields, because the knowledge on Counselling is quite necessary in every field of Social Work.

DEPARTMENT OF SOCIAL WORK
PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Social Work – Profession, Philosophy & Basic Social Science Concepts I
	II	Paper II	Social Work – Profession, Philosophy & basic Social Science Concepts II
II Year	III	Paper III	Social Work Methods I
	IV	Paper IV	Social Work Methods II
III Year	V	Paper V	Fields of Social Work I
		Paper VI	Non Governmental Organizations
	VI	Paper VII	Fields of Social Work II
		Paper VIII A1	Social problems and Welfare services in India (Cluster Elective)
		Paper VIII A2	Counselling – Techniques and Fields (Cluster Elective)
		Paper VIII A3	Corporate Social Responsibility (Self Study) / Project

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU

I BA SOCIAL WORK I SEMESTER PAPER – I SYLLABUS 2020-21
TITLE: SOCIAL WORK PROFESSION, PHILOSOPHY AND BASIC SOCIAL SCIENCE CONCEPTS-I

UNIT I

Social Work: Definition, nature and scope, origin of social work profession in USA, UK and India.

UNIT II

Philosophy and Religious roots of humanity; charity and philanthropy in Hindu, Christian and Islam.

UNIT III

Goals of social work: Developmental and radical social work, generic principals of social work, social work values and ethics.

UNIT IV

Concepts of social work: Social welfare, social service, social development and social change. Fundamental rights and directive principals of state policy in Indian constitution.

UNIT V

Social reform movements and social work profession with special reference to Brahma samaj, Arya samaj and movements for widow remarriage in A.P.

I BA SOCIAL WORK II SEMESTER PAPER – II SYLLABUS 2020-21
TITLE: SOCIAL WORK PROFESSION, PHILOSOPHY AND BASIC SOCIAL SCIENCE CONCEPTS-II

UNIT I

Groups and Communities: Definition of groups, community, characteristics, types of groups and communities.

UNIT II

Social stratification: Caste and Class, Social inclusion and social exclusion.

UNIT III

Understanding human behaviour: Stages of human development, importance of heredity and environment, motivation and perception.

UNIT IV

Socialisation: Concept, Agencies of Socialisation, Family, School, Society, Companionship, Neighborhood.

UNIT V

New economic order in Contemporary India, liberalization, privatization and globalization.

FIELD WORK:

10 Observational visits of Welfare Institutions.

II BA SOCIAL WORK III SEMESTER PAPER – III SYLLABUS 2020-21
TITLE: SOCIAL WORK METHODS-I

UNIT I

Working with Individuals : Case Work, Definition, Historical Development, Principles and Components of case work: Person, Place, Problem, Professional relationship and Process – study, diagnosis and treatment.

UNIT II

Role of case worker in general – Case manager, facilitator, mediator, educator, organizer, counselor, advocacy. Practice in different settings in Hospitals, Schools, Industries, Correctional institutions and family.

UNIT III

Techniques, skills and recording: Techniques of Case work and skills in working with Individuals – rapport establishment, interviewing, enabling, facilitation, resource mobilization, training, reflective thinking and analysis, recording- principles, types, discussion of a case record.

UNIT IV

Working with Groups : Group Work – Historical development, Values and principles, skills in group work, group work process, Techniques of group work, group dynamics – leadership, conflict, communication and relationships.

UNIT V

Use of group works in different fields such as hospitals, correctional settings, schools, and communities, recording in group work, discussion of group records.

II BA SOCIAL WORK IV SEMESTER PAPER – IV SYLLABUS 2020-21
TITLE: SOCIAL WORK METHODS-II

UNIT I

Community Organization: Definition, scope, as a method in relation to other methods of social work, principles and skills of community organization, problems of community, resource mobilization, conflict resolution, organizing meetings, writing and documentation, and net working.

UNIT II

Use of Community Organization: in different settings – rural, urban, tribal and coastal, fields of community organization.

UNIT III

Social Action – meaning, scope, principles, various techniques and stages of social action – creating awareness, financial resources, bill drafting, legislation.

UNIT IV

Social Work Research: Meaning, scope, difference between social work research and social research, stages of social work research, sampling, tools of data collection.

UNIT V

Social Welfare Administration: Meaning and Nature, Principles and procedure, planning, organization, staffing, co-ordinating, recording and budgeting.

FIELD WORK:

8 Case studies (4 from Institutionalized and 4 from non-institutionalized)

Books for Reference:

1. Biestek. F.B. , The Case Work Relationship , George Allen and Uwin Ltd. ,London, 1957 .
2. Brager.G and Specht. H , Community Organization , Colu mbia University Press , New York, 1969 .
3. Compton. BR and Galaway. B , Social Work Processes ,The Dorsey Press ,Illinois, 1979 .
4. Douglas Tom , Group Work Practice , Tavistock ,London , 1976 .
5. Gangrade K.D. , Community Organization in India , Popular Prakashan , Bombay, 1971 .
6. Perlman H.H., Social Case Work a Problem Solving Process, Chicago , University of Chicago , 1957 .
7. Trecker. H.P., Social Group Work – Principles and Practice , Association Press , New York, 1990 .
8. Bailey, Kenneth. D, Methods of Social Research , The Free Press , New York, 1987 .
9. Choudari. D. Paul ,Social Welfare Administration , Atmaramand Sons , Delhi, 1983 .
10. Siddique,. H.Y, Social Work and Social Action, A Development Perspective, Harenani Publications ,New Delhi ,1965 .

III BA SOCIAL WORK V SEMESTER PAPER-V SYLLABUS 2020-21
TITLE: FIELDS OF SOCIAL WORK

UNIT I

Role and status of women in India: Changing perspective of the role and status of women in India – Their status in the context of family, marriage, religion and economy.

UNIT II

Concept of gender – Welfare Services and constitutional and legal provisions pertaining to women.

UNIT III

Violence against Women: Domestic violence – Relevant legislations such as Dowry Prohibiton Act:1961 (Amended – 1984), Prevention of Domestic Violence act 2005.

UNIT IV

Child: Street children, Child labour, neglected and abused children. Institutional and Non-institutional services for children.

UNIT V

Programmes for Women and children – ICDS, Child Line, SHGs, Role of Social Worker in Family counseling Centres, marital counseling centres.

III BA SOCIAL WORK V SEMESTER PAPER-VI SYLLABUS 2020-21
TITLE: NON-GOVERNMENTAL ORGANIZATIONS

UNIT I

Non-Governmental Organizations – Concept, Meaning, characteristics, Types, need of NGOs. Importance of NGOs in Service and Welfare sector.

UNIT II

Promotion and formation of NGOs – Steps involved, A.P. Societies Registration Act 2001. Legal aspects of NGO.

UNIT III

Management of the NGOs – General Body – President, Vice President, Secretary, Joint Secretary, Treasurer and Office bearers; Executive Committee - Roles and functions.

UNIT IV

Financial Management – Sources of Finance – Governmental and Non-Governmental; methods of resource mobilization. Corporate Social Responsibility (CSR).

UNIT V

Project Management – Stages of a Project, preparing an Organizational Budget, significance – Disaster Management: Types and Preventive measures.

Books for References:

1. Bechkard. R.,Organizational Development Strategies and Models Reading, Adson Wisley1969.
2. Chandra Snehalata, Non-Governmental Organizations Structure, Relevance and 32 Functions, Kanishka Publishers, New Delhi, 2001.
3. Connors, Tract Daiina, The Non-Profit Management Hand Book: Operating Politics and Procedures, John Wiley and Sons Inc., Ed, New York, 1993.
4. PRIA, Manual on Financial Management and Accounts keeping for Voluntary Organizations, Society for Participatory Research in Asia, New Delhi, 1990.
5. Steiner.R, Managing Human Service Organization from Survival to Achievement, Beverly Hills. Sage, 1977.

III BA SOCIAL WORK VI SEMESTER PAPER-VII SYLLABUS 2020-21
TITLE: FIELDS OF SOCIAL WORK

UNIT I

Elderly: Concept and definition. Problems of elderly – socio-economic and health problems:elder abuse and neglect – Constitutional and legislative provisions for elderly.

UNIT II

Institutional and non-institutional services for elderly – helpage, social work practice with elderly.

UNIT III

Challenged: Concept and classification – Blind, deaf and orthopedic, mentally retarted and mentally ill-causes and consequences.

UNIT IV

Governmental and Non-Governmental programmes and services for different types of challenged. Social Work practice with challenged.

UNIT V

Problems of Labour – Types of labour – Industrial labour, Agricultural and non-agricultural labour – welfare services for the labour.

III BA VI SEMESTER SOCIAL WORK PAPER-VIII A1 SYLLABUS 2020-21
TITLE: SOCIAL PROBLEMS AND WELFARE SERVICES IN INDIA (Cluster)

UNIT I

Social Problems and Social Disorganisation: Meaning, concept, nature, causes and solutions of Social Problems. Definition, meaning, characteristics, causes of Social Disorganization.

UNIT II

Un-employment and Poverty: meaning, concept, types and causes of unemployment, problem of unemployment in India.
Poverty – meaning, definition, causes and effects, anti-poverty programs in India.

UNIT III

Corruption and Black Money: Definition, corruption as a social evil, causes, legislative measures to control corruption – Prevention of Corruption Act 1947, Prevention of Corruption Act 1988 .
Black Money – Meaning and concept, causes, measures to contol Black Money.

UNIT IV

Alcoholism and Drug addiction: Definition, causes and effects of alcoholism. Meaning, definition, types and causes of drug addiction, measures to control Alcoholism and drug addiction.

UNIT V

Women disparity and Women trafficking: Concepts of women disparity, women trafficking, female foeticide and infanticide. Causes and solutions of Gender disparity. Causes and effects of Women trafficking. Constitutional and Legislative provisions related to trafficking in India.

Reference Books:

1. Booker HS : Social Problems, A modern approach, New York, John Welley & Sons.
2. Grangrade K.D.: Social legislation in India, Volume I & II, Delhi.
3. Government of India: Encyclopedia, Delhi Publication Division.
4. G.R.Madan : Indian Social Problems Volume I
5. C.N.Shankara Rao: Sociology of Indian Society.

III BA VI SEMESTER SOCIAL WORK PAPER-VIII A2 SYLLABUS 2020-21
TITLE: COUNSELLING - TECHNIQUES AND FIELDS (Cluster)

UNIT I

Definition, nature, importance, limitations of counseling. Difference between counseling and psychotherapy, counseling as a profession.

UNIT II

Professional Ethics in counseling, characteristics and skills of a counselor, counselor – counnslee relationship, process of counseling, stages of a counseling.

UNIT III

Types of Counselling – Direct and Non-direct, Individual and group counseling, child counseling, school counseling, couple counseling and family counseling.

UNIT IV

Counseling therapies – Psychoanalytic therapy, Behavioural and cognitive therapy, client-centred therapy, Gestalt therapy, Crisis Intervention.

UNIT V

Counseling for Special groups – Counselling for suicidal, counseling the victims of Harasment, violence and abuse, counseling and rehabilitation of the elderly, counseling and rehabilitation of cancer patients.

FIELD WORK:

Sociao Economic survey, Referal Services, Camps/aids rally/fund raising.

III BA VI SEMESTER SOCIAL WORK PAPER-VIII A3 SYLLABUS 2020-21
TITLE: CORPORATE SOCIAL RESPONSIBILITY (Self Study)

UNIT I

CSR : Definition, Nature and Scope, Historical Perspective and Development of CSR, Evolution of CSR in India.

UNIT II

CSR and Social work : Meaning and nature; **Professional social work and the development approach of CSR;** CSR initiatives; Dimensions of CSR; Political and Religious belief on CSR

UNIT III

NGOs and CSR: The role of NGOs and Corporate Social Responsibility, Economic; Social; environmental responsibilities of CSR.

UNIT IV

CSR and Benefits : Business impact of CSR; Driving forces of CSR; Best Practices of CSR; Need for CSR

UNIT V

Community Development and CSR : Community development; Sustainable development ; Internal and External CSR; corporate-society relations; community oriented projects.

Books for Reference:

1. Chakra borty S. (2010), Corporate social responsibility and society.
2. Forbes C. (2008) Company social responsibility becomes a way of life for employees.
3. Baxi,C.V. & Ray, R.S. (2012*). Corporate Social Responsibility.* New Delhi: Vikas Publishing House.
4. William B. Werther, Jr.David Chandler., Strategic Corporate Responsibility.
5. Harward R. Brown., Social Responsibilities of the Business man.

DEPARTMENT OF COMMERCE

The meeting of the Boards of Studies in Commerce was held on Wednesday, 04.03.2020 at 11.30 a.m. in the Commerce Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Mrs.P.Uma Maheswari Devi, Adikavi Nannaya University, Rajahmundry

External experts:

3. Mr.G.Srikanth, Chartered Accountant, Eluru

Faculty:

4. Dr.R.S.N.Sarma
5. Mr.S.B.V.Subrahmanyam
6. Mrs.R.Jagadeeswari
7. Mrs.Ch.Rajitha
8. Mrs.R.Harika
9. Ms.K.E.Preethi

Students:

10. M.Lalitha Sree, III B.Com. General
11. M.Gayatrii, III B.Com. Computers

Resolutions:

1. It was resolved to follow the same syllabus for the academic year 2020-21.

2. It was resolved to enhance the level of practical knowledge, the following aspects were suggested.
   - Addition of new concept "Caro 2020" in Auditing syllabus.
   - Addition of GST new returns : 01/04/2020 to GST syllabus..
   - Conducting mock share trading.

DEPARTMENT OF COMMERCE - B.COM PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	1	Financial Accounting I
		2	Business Statistics I
		3	Business Organization
		4	Business Finance I
	II	1	Financial Accounting II
		2	Business Statistics II
		3	Principles of Management
		4	Business Finance II
II Year	III	1	E - Commerce
		2	Banking & Financial Services
		3	Corporate Accounting
		4	Income Tax
		5	Financial Management I
	IV	1	Business Environment
		2	Merchant banking
		3	Accounting for Service Organizations
		4	Fundamentals of GST
		5	Financial Management II
III Year	V	1	Business law
		2	Cost Accounting
		3	Auditing
			Allied Major
		4	Marketing Management
		5	International Business
		6	Fundamentals of International Financial Management
		7	Security analysis and Portfolio Management - I
			Major Core Elective
			Human Resource Management
	VI	1	Company law
		2	Management Accounting
		3	Business Communication
			Allied Major
			Marketing Cluster
		4	Advertising & Sales promotion
		5	Brand Management
		6	Office Management
			Finance Cluster
		7	Working Capital Management
		8	Security analysis and Portfolio Management- II
		9	Office Management
			Major Core Elective
		10	• Special Project / Self Study / Online course
PROJECT WORK			

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I B.COM I SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: FINANCIAL ACCOUNTING I

UNIT I

Introduction - Need for accounting – Definition – Scope of accounting-Book keeping and Accounting Branches of accounting –Advantages –Disadvantages – Accounting process – Journalizing – classification of accounts –Ledger-Balances of Accounts.

UNIT II

Subsidiary Books - Types of Subsidiary books – Cash book – Three column cash book –Petty cash book - Problems.

UNIT III

Bank Reconcellation Statement - Need for Bank Reconciliation- Reasons for the difference between cash books and pass book balances – preparation of BRS - problems of favorable and overdraft balances.

UNIT IV

Bills of Exchange - Meaning of Bill – Features of Bill – Parties in the bill – Discounting of bill – renewal of Bill – Entries in the books of Drawer and Drawee – problems. (Accommodation Bills excuded)

UNIT V

Preperation of Trial Balance, Final Statements of Account - Trial balance – Trading and Profit &loss account and Balance sheet –adjusting and closing entries.

I B.COM I SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BUSINESS STATISTICS-I

UNIT- I

Introduction to Statistics – Meaning and Definitions – Features – Functions of Statistics – Importance of Statistics to Trade and Industry – Other Sectors – Limitations of Statistics – Distrust of Statistics.

UNIT- II

Statistical Investigation–Meaning-Stages-Collection of data - Primary data-Methods of primary data collection-secondary data Classification – Meaning – Features – Importance – limitations - types Tabulation-structure of a Table – Rules - types of tables.

UNIT-III

Measures of Averages– Features – Functions - types of averages Arithmetic Mean - Simple A.M – Problems - Weighted A.M Median – features – limitations – Problems Mode – features – limitations – Problems - Bi modal situation

UNIT-IV

Geometric Mean – features – limitations – Problems. Harmonic Mean – features – limitations – Problems.

UNIT-V

Measures of Dispersion - Range –Quartile deviation-Mean Deviation-Standard deviation – features – types – problems

I B.COM I SEMESTER COMMERCE SYLLABUS 2020-21

TITLE: BUSINESS ORGANISATION

UNIT- I

Introduction to Business: Concept of business – Meaning and definitions – features – importance – Trade, Industry and Commerce – Aids to Trade – Industry – Classification.

UNIT- II

Business Functions and Entrepreneurship: Functions of business – factors influencing the choice of suitable form of organization – meaning of entrepreneurship – types – functions of entrepreneurship.

UNIT- III

Forms of Business Organization: Sole trader-features - Merits and Demerits-problems. Partnership- Meaning- definition - features - Merits and Demerits – Kinds of partners.

UNIT- IV

Joint Stock Companies: Joint stock company-definition-features, Merits and Demerits. Types of companies, Joint stock company Vs partnership - private company Vs public company.

UNIT- V

Formation of Company: Promotion- stages of promotion. MOA – Features**.** AOA- Features**.** Prospectus – contents– Statement in lieu of prospectus.

I B.COM (FINANCE) I SEMESTER SYLLABUS 2020-21
TITLE: BUSINESS FINANCE - I

UNIT-I

Introduction: Concept of Finance – Characteristics - Classification – Finance Functions – Nature – Significance of Business Finance.

UNIT- II

Scope of Finance: Relationship of finance with other disciplines – Theories of finance – Traditional and Modern Theories – Functions of financial manager.

UNIT-III

Sources of Finance: Capital – Features - Types of Capital – Sources of Funds – Long Term Sources – Short Term Sources – Importance – Types of Short Term Sources.

UNIT-IV

Long Term Sources: Shares - Kinds of Shares - Debentures – Types of Debentures - Distinction between Shares and Debentures - Under Writing of Shares and Debentures**.**

UNIT-V

Innovative Sources of Finance: Venture capital funds - Functions – Importance - venture Capital Fund in India.
Mutual Fund – Features - Advantages - Disadvantages – Classifications.

I B.COM II SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: FINANCIAL ACCOUNTING II

UNIT-I

Consignment Accounts; Consignment features, terms used- proforma Invoice – Account sales - delcredre commission - Accounting treatment in the books of the consignor and consignee- valuation of consignment stock - Normal and Abnormal loss - Invoicing of goods at a price Higher than the cost price .

UNIT-II

Joint venture: Features- Differences between consignment and joint venture- accounting procedure - Methods of keeping records for joint venture Accounts Methods of recording in co-venture books - separate set of books methods.

UNIT-III

Depreciation**:** Meaning of Depreciation – causes- objectives of providing for Depreciation - Factors effecting Depreciation - Accounting treatment - methods of providing Depreciation -Straight line method - Diminishing balance method.

UNIT-IV

Rectification of Errors: Types of Errors Rectification before and after preparation of Final Accounts - Suspense account - effect of Errors on profit.

UNIT-V

Capital and Revenue expenditure (Theory only)

I B.COM II SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BUSINESS STATISTICS II

UNIT- I

Skewness: definition- Features- Functions – Karl Pearson's and Bowley's Measures of Skewness.

UNIT- II

Correlation: Meaning – Definition – Karl Pearson's Correlation Coefficient – Probable error – Spearman's Rank Correlation - Concurrent Deviation Method

UNIT- III

Regression Analysis: Meaning – Regression Lines – Regression Equations – Methods – Normal Equation Method – Regression Equation by taking deviations from means – Regression coefficients.

UNIT- IV

Index Numbers: Definition – Functions – Types of Index numbers – Problems in Construction of Index Numbers - Methods of construction – Aggregate Methods – Fishers Ideal Index – Time reversal test – Factor reversal test – Consumer Price Index – Base conversion.

UNIT- V

Analysis of Time Series: Meaning – Importance – Purpose – Components of Time Series – Secular Trend – Measurement of Secular Trend – Semi averages method – Moving Averages Method – Method of least squares.

UNIT- VI

Diagrammatic Presentation of Data: Meaning – Features – Importance – Rules for Constriction of Diagrams Types – One Dimensional – Two Dimensional Diagrams – Limitations of Diagrams

I B.COM II SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: PRINCIPLES OF MANAGEMENT

UNIT- I

Introduction to Management - Management - meaning - significance - management Vs administration –Functions of management – Fayal's principles of management.

UNIT-II

Planning - meaning - significance –Steps in Planning – Types of plans
Decision making –Meaning – importance - Steps in decision making process.

UNIT-III

Organization - meaning – Principles of organization– Line and Staff Organization –Organization chart. Leadership – Leadership styles

UNIT- IV

Delegation of authority - meaning - elements - principles - difficulties in delegation – Guidelines for making delegation effective – Centralization- meaning – importance – advantages and limitations. Decentralization - meaning – importance – advantages and limitations.

UNIT- V

Staffing and Controlling - Staffing – selection procedure –Coordination-Control – meaning – Qualities of Good Control – Process of control – Different stages in control – Importance of control

I B.COM (FINANCE) II SEMESTER SYLLABUS 2020-21
TITLE: BUSINESS FINANCE II

UNIT-I

Time Value of Money: Meaning - Future Value Of Money – Kinds Of Interest – Simple Interest – Compound Interest – Effective Rate Of Interest – Present Value – Sinking Fund.

UNIT- II

Lease Financing/ Hire Purchasing: Introduction – Meaning – Steps Involved In Leasing Transaction – Types – Advantages And Disadvantages.
Introduction – Definition – Features Of Hire Purchase Agreement - Difference Between Leasing And Hire Purchasing.

UNIT- III

Financial Planning: Meaning – Definition- Elements - Scope – Types –Procedure – Benefits – Limitations.

UNIT- IV

Financial Forecasting: Meaning – Advantages – Tools of Financial Forecasting.

UNIT- V

Cash Management: Cash Management Introduction – Motive For Holding Cash – Objectives of Cash Management – Basic Problems of Cash Management – Managing of Cash Inflows and Out Flows**.**

II B.COM III SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: E – COMMERCE

UNIT-I

Basics of Computers - Definition, Characteristics and limitations of computers – Elements of Computers – Hardware –CPU – Primary and Secondary memory – Input and Output devices.

Data Communication-Networking-Types of net works - LAN-MAN-WAN-importance of net working. Internet - Origin- operation —Network Protocols-Intranet - E-Mail-Features-components of e-mail system – advantages and limitations- operation of e-mail.

UNIT-II

E-Business – Introduction – Definitions - Origin and development - Features – advantages - limitations - Components of E- Business - importance of components Supply Chain Management (E-SEM) –Meaning & definition – Development – Objectives- Components – Execution – Advantages .

UNIT-III

E- Banking meaning & definition- Features – Advantages to customers – Advantages to Banks – Payment through E- Banks, Types of E- Banking (e banking products) - E- Cheques – ATMs.

E-Payment System: Methods of payment – E payment procedure-factors to be considered – Payment Categories (types of on line payment) – requirements for e payment – Digital Cash – Properties of digital cash- Digital cash payment system-Online Credit Cards – Debit Cards – Smart Cards.

UNIT-IV

E Business models - E-Business Models-Introduction-Classification

Business to Customer Model (B2C) Model-Features –Reasons for development

Business to Business (B2B) Model- Features –Advantages

Customer - Customer Model (C2C) Model- Customer To Business Model (C2B)

UNIT-V

Security Technologies-Encryption-Secret Key Encryption –Public Key-Requirement of transaction Security.

Fire Walls-Firewall Management issues-Fire Walls networking security.

II B.COM III SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BANKING & FINANCIAL SERVICES

UNIT- I

- Commercial Banking: Introduction – Meaning and definitions – Functions and Services – Importance.
- Credit Creation – Multiple expansion theory.
- Banking systems: Features, Merits & Demerits of unit banking, branch banking, group banking chain banking and mixed banking.

UNIT-II

Indian Banking – Development

- Commercial Banks Nationalization – Reforms.

UNIT-III

RBI – Functions – role in Indian Economy.

UNIT-IV

Rural Banking – Features:

- Co-operative Banking – Features – Structure – Weaknesses
- Regional Rural Banks – Importance – Functions – Weaknesses
- NABARD – Functions – Role in rural development

UNIT-V

Law and Practice of Banking:

- Definitions of terms bankers and customer.
- Relationship between banker and customer – general relation and special features of relationship – types of customers.
- Cheques – features – crossing of cheques – endorsements – Cheques and drafts - Secured advances – advances against goods – documents title to goods.

II B.COM III SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: CORPORATE ACCOUNTING

UNIT-I

Shares and Share Capital - Share-meaning-types of Shares-issue of shares-Shares issued at par, premium and discount-Pro-rata allotment, forfeiture of shares and reissue of forfeited shares at par, premium and discount. Concept & process of book building-Issue of rights and bonus shares-Buyback of Shares (preparation of journal and Ledger) (including problems).

UNIT-II

Issue and Redemption of Debentures - Debenture- meaning-types of debentures-Issue of debentures at par, premium and discount-Redemption of debentures by general drawings method-Employee Stock Options (preparation of journal and ledger) (including problems).

UNIT- III

Valuation of Goodwill and Shares - Goodwill-meaning- Need for valuation-methods of valuation-Simple average method-Super profits method-Capitalization method- Valuation of Shares-meaning-need for valuation-Methods of valuation-Net Assets method-Yield method-Fair Value method. (Including problems).

UNIT IV

Company Final Accounts - Importance of Final Accounts-Preparation of Final Accounts-Adjustments relating to preparation of final Accounts-Profit and Loss Account and Balance Sheet-Preparation of final Accounts by using Computers. (Including problems).

UNIT-V

Provisions of the Companies, 2013 - Details relating to issue of shares and debentures-Book Building-Preparation of Balance Sheet and Profit and Loss Account-Schedule-III.(theory).

II B.COM FINANCE III SEMESTER SYLLABUS 2020-21
TITLE: INCOME TAX

UNIT-I

Basic Concepts - Income – Total Income – Casual Income – Persons – Assesses - Assessment Year – Previous year – Incomes not included in total income.

UNIT-II

Agricultural Income - Residential Status of Individual – Resident – Nonresident – Not Ordinary Resident – Incidence of Tax (Theory only).

UNIT-III

Salaries - Meaning – Allowances – Perquisites – Problems on computation of Salary income – Calculation of HRA, Children education allowance – Hostel allowance – Rent free accommodation – PF _ Standard Deductions under Sections 16(2), 16(3) and 80C (including problems).

UNIT-IV

Income from House Property - Annual Value – Computation of annual value – Computation of income from house property (Including Problems).
Income from business or profession (include problems).

UNIT-V

Computation of total income of an individual
Deductions under section- 80 (including problems).

II B.COM III SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: FINANCIAL MANAGEMENT - I

UNIT-I

Financial Management - Introduction – meaning –importance – functions - objectives – profit maximization – wealth maximization – relationship between financial management and other disciplines.

UNIT-II

Financing decision - Introduction – features – process – Leverages – Types of leverages – operating leverage – financial leverage – composite leverage –cost of capital – features – classification – importance – determination of cost of capital.

UNIT-III

Capital structure - Introduction – determinants of capital structure – components of capital structure – types of capital structure – theories of capital structure.

UNIT-IV

Working Capital - Introduction – Features – Classification – Determinants of working capital – advantages and disadvantages.

UNIT-V

Investment decision or Capital budgeting - Meaning – definition – features – need – Components – types – managerial uses – capital budgeting process – factors influencing capital budgeting.

II B.COM IV SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BUSINESS ENVIRONMENT

UNIT-I

Business Environment: Introduction – meaning – definition – significance – components – internal environment.

UNIT-II

Economic Environment: Nature – economic policies – basic units of economic environment – types of economic systems – capitalistic system – communal economy – mixed economy – NITI aayog – Rostow's five stages economic development

UNIT-III

Political and legal environment: Nature – meaning – economic roles of government – factors are effecting in political environment .

UNIT-IV

Natural and Technology environment: Introduction – meaning – sources of technological dynamics – impact of technology on globalization

UNIT-V

Social and cultural environment: Objectives – elements of culture – culture and organizational behavior – business ethics – factors effecting socio – culture.

II B.COM IV SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: MERCHANT BANKING

UNIT-I

Financial Markets – Meaning – Importance – Financial System – Importance – Classification of Markets

- Money Market – Meaning – Organized and unorganized money markets.
- Indian Money Market – Features – Structure – Sub markets – Defects – Indigenous Banks – Money Lenders.

UNIT-II

- Capital Market – Meaning – New issue market – Importance
- Stock exchange – Meaning – Definition – Functions and services – Trading – Brokers – Jobbers and speculators – Listing

UNIT-III

Merchant Banking – Introduction – Meaning – Functions- importance.

UNIT-IV

Loan Syndication – Stages – External Commercial Borrowings.

UNIT-V

Insurance – Meaning – Definition – Development – Principles – Advantages – Kinds of Insurance – Life Insurance – Features – Policies.

UNIT VI

Other Functions:

- Mutual Funds – Meaning – Importance – Types of MFs
- Credit Rating- Meaning – Importance - CRISIL
- SEBI – Development - organization – powers – Functions

II B.COM IV SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: ACCOUNTING FOR SERVICE ORGANIZATIONS

UNIT-I

Bank accounts : Bank accounts – various books and registers to be maintained by banks – final accounts of banks – preparation of profit and loss account and balance sheet – legal provisions – calculation of rebate on bills discounted - including problems.

UNIT-II

Life Insurance Company accounts: Life insurance meaning, parties – insurance contract - premium- LIC act 1956 – final accounts of life insurance companies – preparation of revenue account, profit and loss account, balance sheet – valuation balance sheet – calculation of correct life fund - including problems.

UNIT-III

General Insurance - Meaning – importance – principles - GIC Act 1972 - preparation of final accounts – revenue account and balance sheet of fire insurance and marine insurance - including problems.

UNIT-IV

SINGLE ENTRY SYSTEM - Meaning – Double Entry system – single entry system – differences between single entry and Double entry systems – finding out profit or loss under single entry system (statement of affairs method only) (conversion method excluded) – including problems.

UNIT-V

Accounts of non trading concerns - Meaning – capital and revenue items receipts and payments account – income and expenditure account – opening and closing balance sheets – preparation of income and expenditure account when receipts and payment account is given – preparation of income expenditure account, opening balance sheet and closing balance sheet when receipts and payment account along with additional information is given.

II B.COM FINANCE IV SEMESTER SYLLABUS 2020-21
TITLE: FUNDAMENTALS OF GST

UNIT-I

Introduction: Overview of GST - Concepts - Limitations of VAT - Need for Tax Reforms - Justification for introduction of GST - Shortcomings and advantages at the Central Level and State Level on introduction of GST- Process of Introduction of GST - Constitutional Amendments.

UNIT- II

GST: Principles - Comprehensive structure of GST model in India: Single, Dual GST-Transactions covered under GST.

UNIT-III

Taxes and Duties: Subsumed under GST - Taxes and Duties outside the purview of GST: Tax on items containing Alcohol - Tax on Petroleum products - Tax on Tobacco products - Taxation of Services

UNIT- IV

Inter-State Goods and Services Tax: Major advantages of IGST Model - Interstate Goods and Service Tax: Transactions within a State under GST - Interstate Transactions under GST - Illustrations.

UNIT-V

Time of Supply of Goods & Services: Value of Supply - Input Tax Credit - Distribution of Credit -Matching of Input Tax Credit - Availability of credit in special circumstances- Cross utilization of ITC between the Central GST and the State GST.

III B.COM IV SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: FINANCIAL MANAGEMENT - II

UNIT-I

Financial Statement Analysis: Financial statement – introduction – meaning – Definition – importance – Limitations – Financial analysis – Types – procedure tools.

UNIT-II

Funds Flow Statement: Introduction – meaning – Definition – uses – parties interested in Funds flow statement – advantages – disadvantages.

UNIT-III

Cash flow statement: Cash flow – meaning – definition – advantages – disadvantages – differences between cash flow and funds flow – managerial uses.

UNIT-IV

Ratio analysis: Meaning – definition – objectives – types – advantages and disadvantages.

UNIT-V

Dividend Decision / Dividend policy: Introduction – meaning – definition – types – determinants – dividend policy – significance – theories – Walter's model – Gordon's model.

III B.COM V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BUSINESS LAW

UNIT-I

Law of Contracts - Meaning – Types – Essentials of a valid Contract – Types of Contract-Valid, Void, Voidable, Unenforceable and Illegal Contracts - Offer – Meaning – Types – Mode of Offer - Essentials of a Valid Offer Acceptance – Meaning - Essentials of a Valid Acceptance – Types.

UNIT-II

Consideration- Definitions – Valid Consideration – Contracts valid without consideration. Consent – Meaning – Effects of consent.

UNIT-III

Capacity of Parties – Contract with Minors – Persons of unsound Mind – Persons disqualified by law.

UNIT-IV

Legality of Object – Contracts prohibited by law – Effect of validity – Remedies for beach of contracts. Quasi contracts – Creation of rights and obligations.

UNIT-V

Specific contracts – Law of Agency – Rights and duties of Principal. Indemnity and guarantee – Meaning – Types Bailment and Pledge

UNIT-VI

Sale of Goods Act – Difference between sale and agreement of Sale – Contracts of sale.

III B.COM V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: COST ACCOUNTING

UNIT-I

Introduction– Cost accounting – Objectives – Functions of cost accounting- Cost concept and Classification – concept of cost – cost center – cost unit – Methods of costing – Techniques of costing – classification of costs – Elements of cost – Cost sheet (cost statement) (Including Problems)

UNIT-II

Material cost – Classification of materials – ABC techniques – Stock levels – Economic Order Quantity – Documents for issue of materials – inventory systems – material losses – methods of pricing material issues – FIFO – LIFO- Weighted Average – Simple Average-Base Stock Method (Including Problems)

UNIT-III

Labour cost – direct and indirect labour – Methods of wage payment – Time rate systems – Piece rate systems – incentive systems (Including Problems)

UNIT-IV

Overheads – Meaning and definition – Classification of overheads – Accounting of overheads – Allocation – Apportionment – (primary distribution)- Apportionment of service department Costs (Secondary distribution) Absorption of factory overheads –methods-Calculation of Machine Hour Rate (Including Problems).

UNIT-V

Job and Contract Costing: Job and Contract Costing – Features of Job costing-advantages of job costing-differences between job costing and process costing **(theory only).**

Contract costing – Meaning - features- Contracts commenced and completed during the same financial year- Calculation of profit on incomplete contracts – Two or more contracts in the same financial year (theory and Problems).

III B.COM V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: AUDITING

UNIT-I

Introduction to Auditing- meaning-definition-Importance of auditing –objects-types of audit.

UNIT-II

Audit programme – advantages and disadvantages of an audit programme-audit notebook-audit working papers-routine checking.

UNIT-III

Company Audit – Auditor qualifications-qualities-appointment and re-appointment-remuneration –rights and duties of an auditor-preliminaries to be conducted before commencement of a company audit.

UNIT-IV

Internal check –internal control and internal audit-internal check-objectives-characteristics-advantages and disadvantages of internal check-internal check with regard to cash receipts- cash payments & sales.
Internal control-vouching-objectives of vouching.

UNIT-V

Liabilities of an auditor-civil liability-liability for misfeasance-criminal liability – liability under other statutes.

UNIT-VI

Auditor's report-meaning-contents-importance-qualified and unqualified report, "Caro 2020".

III B.COM V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: MARKETING MANAGEMENT

UNIT-I

MARKETING : Introduction – Evaluation of marketing – Definition – Nature and scope – Significance and importance of marketing - Role of marketing in economic development - marketing concepts – Production concept – Product Concept – The Selling Concept - The Societal Concept - Marketing Elements - Marketing Mix .

UNIT-II

Marketing Environment: Micro Environment – Macro Environment – Demographic environment – Economic Environment – Natural Environment – Technological Environment – Political Environment – Legal Environment - Cultural Environment.
Marketing Information system – Marketing Research – Marketing Research Process – Consumer Behaviour.

UNIT-III

Market Segmentation: Market segment – Relationship of a segment to a market – Market segment Vs Product differentiation - Benefits of segmentation – Basis for segmentation – Demographic Segmentation – Geographic segmentation – Psychographic segmentation – Behavioural segmentation.

UNIT-IV

New product development – Idea generation – Idea screening – Concept development and testing – Marketing strategy – Business analysis – Product Development – Test Marketing – Commercialization.
Product life cycle: Introduction stage – Growth stage – Maturity stage – Saturation stage – Decline stage. –Strategies to be used during different stages of PLC (Product life cycle)- Branding - packaging.

UNIT-V

Product Pricing :Objectives of pricing – Product Mix pricing strategy – Economic concepts of pricing - factors influencing pricing decisions – external factors influence the pricing - The market and demand – pricing in different types of markets – Analyzing the price demand relationship – other external factors - Internal factors affecting pricing decisions – Marketing objectives – Marketing mix strategy - skimming pricing - penetration pricing.

UNIT-VI

Channels of Distribution: Selection of channel of distribution – wholesaler – Classification of wholesalers – Functions of wholesalers – Services rendered by the wholesalers - Retailer –

functions of Retailer – Essential elements for a successful retail trade – Types of retailers - direct marketing –physical distribution.

III B.COM V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: INTERNATIONAL BUSINESS

UNIT-I

International Business – Introduction - Meaning – features – Importance – Advantages and Problems of international trade.

UNIT-II

Trade Policies- Importance –Free trade Vs Protection trade –advantages and limitations –Balance of payments –Tariffs.

UNIT-III

Types of International Business – Export and Import trade – Need and Importance-limitations – problems.

UNIT-IV

Foreign Exchange Market & Control:

- Forex market- structure of Forex market –members of the market-Authorized Dealers.
- Forex rate fluctuation –reasons for Forex rate fluctuations- Effect of Fluctuation on exporters and importers- Foreign exchange control.

UNIT-V

Exports and Labour Laws – Factors to be concerned by Exporter - Patents & Trademarks - Major Indian Laws.

UNIT-VI

Counter Trade: Meaning – It's Importance & Types - International Business Environment.

III B.COM (FINANCE) V SEMESTER COMMERCE SYLLABUS 2020-21

TITLE: FUNDAMENTALS OF INTERNATIONAL FINANCIAL MANAGEMENT

UNIT-I

International financial management - Nature-Importance of IFM - Need to grow globally - similarities and differences between domestic financial management and international financial management.

UNIT-II

Foreign exchange markets – features – functions – structures – market players – foreign exchange rate fluctuation – causes.

UNIT-III

International financial markets – types of IFM – Types – features.

UNIT-IV

International banks – IMF – IBRD – ADB – IBS.

UNIT-V

Euro currency dollar market – Euro bond market – International stock exchanges.

III B.COM (FINANCE) V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT - I

UNIT-I

Introduction – Meaning – Portfolio management – Phases of portfolio management – Concept of financial derivatives (Meaning of futures and options)

UNIT-II

(a) Investment – Meaning – Characteristics – Objectives – types - Importance

(b) Investment Vs speculation – Investment vs gambling – Investment avenues – Types of investors

UNIT-III

Investment process- Sources of investment- Information – Security markets – Primary and secondary - Security investment Vs Non-security investment.

UNIT-IV

Capital market features – types- Importance.

UNIT-V

Market indices – Calculation of SENSEX & NIFTY – Types of securities in Indian capital market – Indian capital market present scenario.

III B.COM V SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: HUMAN RESOURCE MANAGEMENT

UNIT-I

Introduction – Meaning – Definition – Features – Objectives – Functions of HRM – Principles of HRM – Challenges for HRM – Ethics and human resource – Ethical aspects of HRM – Ethical guidelines

UNIT-II

Job analysis – Meaning – Definition – Nature – Purpose of job analysis – methods of job analysis – process and problems of job analysis - HR Planning –Objectives –Factors influencing HR planning – process of HR planning

UNIT-III

Recruitment & Selection – Meaning – Definition – Features – Objectives –factors affecting recruitment – Recruitment procedure – Sources of Recruitment Selection – factors affecting selection – purpose of select.

UNIT-IV

Training and Development – objectives – Need – Methods – Process – Training Evolution – Need for development – Difference between Training and Development.

UNIT-V

Performance Appraisal – Meaning – Definition – Features – Objectives – Process of performance appraisal – Methods of performance appraisal.

III B.COM VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: COMPANY LAW

UNIT-I

Factories Act: Meaning & Definition of Factory – Health – Safety & Welfare Measures – Working Hours – Employment of Women & Young Persons.

UNIT-II

Company Law: Definition and Features of Company – Kinds of companies – Differences between public limited company and private limited company.

UNIT-III

Formation of Companies – Memorandum of Association – Alteration of MOA-Articles of Association – Prospectus.

UNIT-IV

Company Management – Directors – Appointment of Directors – Qualifications and Removal of Directors –Powers of Boards – Duties and Liabilities of Directors – Meetings – Types of meetings.

UNIT-V

Winding up of a company – Different Modes of Winding up – By court – Voluntary winding up – winding up subject to the supervision of court.

III B.COM VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: MANAGEMENT ACCOUNTING

UNIT-I

Introduction: Management accounting – Scope of management accounting – Functions of management accounting-Advantages of Management Accounting-Differences between Financial Accounting, Cost Accounting and Management Accounting (theory only).

UNIT-II

Ratio analysis: Ratio analysis – Meaning – Types of ratios – Advantages and limitations of Ratio Analysis-Calculation of simple ratios-Gross profit, Net profit, operating, operating net profit and expense ratios-Current, liquid, absolute liquid, debt equity, debtors turnover, creditors turnover , Stock turnover ratios.(including problems).

UNIT-III

Funds flow Analysis: Funds flow analysis – Features – Advantages – Limitations – Preparation of funds flow statement with simple adjustments (theory and problems).

UNIT-IV

Cash flow statement: Cash flow statement –Meaning- Features – Advantages – Limitations-differences between funds flow and cash flow statements-Cash from operating Activities, Investing and Financing Activities-Preparation of cash flow statement-Simple problems (theory and problems).

UNIT-V

Variance Analysis: Variance analysis –meaning-advantages-limitations-Calculation of variances-Material variances - Labour variances only-(**Overhead variances excluded).**

III B.COM VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BUSINESS COMMUNICATION

UNIT-I

Introduction to communication- meaning – features of communication- Importance – Communication process – Barriers of communication – How to make communication effective.

UNIT-II

Types of communication – Verbal communication – Oral communication- Telephone – Face to Face communication – Written communication – Fax – e-mail – Functions of e-mail – Non verbal communication.

UNIT-III

Organizational communication – meaning – types – formal and informal communication – Upward communication – Downward communication – lateral communication – Grapevine communication – types of informal communication.

UNIT-IV

Business letter writing – Types of letters – Importance of business letters – essentials of a good business letter – structure of a business letter .

A. Trade Letters : Letters or Enquiry – reply to enquiry – sales letter- complaints – adjustments.

B. Employment Letters : applying for a job – resume for calling for an interview – appointment order .

C. Inter office communication: circulars – memos.

UNIT-V

Report writing – definition – Features – Types of reports – essentials of a good business report – steps in business report writing.

III B.COM VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: ADVERTISING AND SALES PROMOTION

UNIT-I

Advertising –Meaning-Definition-Functions of advertising.

UNIT-II

Advertising media - Types of advertising media-Press advertising –Outdoor advertising-Direct mail advertising-Miscellaneous advertising - -internet advertising –Social advertising.
How to select advertising media.

UNIT-III

Advertising agency-Need for advertising agency-Qualities good advertising agency advertising v/s publicity – Advertising v/s propaganda.

UNIT-IV

Creative Execution - Meaning - Verbal creative execution-Headlines-Types of Headlines –Body copy. Writing advertising script for broad casting media - Radio and Television-Visual Creative execution.
Lay out-types of layout-Qualities of a good lay out- illustration colors.

UNIT-V

Sales promotion-meaning-Objectives—importance of sales promotion-Qualities of a successful salesman-Difference between personal selling, sales promotion and advertising.

UNIT-VI

Advertising ethics – Need to regulate advertising – ways of regulation.

III B.COM VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: BRAND MANAGEMENT

UNIT-I

Brand concept – Brand Vs Product- Benefits of Branding- Brand attributes – Significance of Branding to customers, to firms, Selecting Brand names – Brand Life cycle – Brand Loyalty.

UNIT-II

Brand equity – Cost, Price, and consumer based methods of Brand equity, Sustaining Brand equity – Brand personality – Brand image Vs Brand personality.

UNIT-III

Brand building and Positioning – Brand positioning Vs Brand building – Brand knowledge, Brand hierarchy, Strategy, Extension and transfer, Managing brand over time.

UNIT-IV

Brand portfolio and Segmentation – Identifying and Establishing Brand portfolio – Brand Segmentation – Portfolio and Brand values

UNIT-V

Branding in Different Sectors: - Agriculture – Education- Health – Tourism – Hospitality and other services – Role of e-communities in brand management.

III B.COM (FINANCE) VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: WORKING CAPITAL MANAGEMENT

UNIT-I

Working capital management – introduction – meaning – definition – importance – functions – sources of working capital

UNIT-II

a. Cash management – meaning – motives for holding cash – factors – determining cash need.
b. Cash budget – meaning – importance – preparation of cash budget.

UNIT-III

Receivables management – meaning – features – advantages

UNIT-IV

Models of payment of receivables – factors influencing the size of investment in receivables.

UNIT-V

Inventory management – meaning – components of inventory – objectives – need for balanced investment in inventory – advantages of holding inventory – risks – tools and techniques of inventory.

III B.COM (FINANCE) VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT - II

UNIT-I

Risk and return – Meaning of risk – Elements of risk – Systematic risk – Un systematic risk – Measurement of systematic risk.

UNIT-II

Stock exchanges – Meaning – Functions – Stock markets in India – Organization – Membership & membership of stock exchange – Listing of securities – Regulatory frame work.

UNIT-III

Fundamental analysis and economy analysis – Meaning – economy – Industry – Company analysis frame work – Economy analysis – Economic forecasting.

UNIT-IV

Industry and company analysis– Industry analysis - Concept of industry - Industry life cycle – Industry characteristics.

UNIT-V

Company analysis – Financial statements – Other variables – Assessment of risk.

III B.COM VI SEMESTER COMMERCE SYLLABUS 2020-21
TITLE: OFFICE MANAGEMENT (Cluster)

UNIT-I

Introduction – Concept and Importance of office - Office Management- Functions of office management.

UNIT-II

Office Accommodation and Environment- Office building - size, layout, safety and security measures- Reception - Importance - shape and size - control – Furniture - allotment of seats – chambers - cabins rooms etc

UNIT-III

Communication : Feature, classification - barriers.- Arrangement and adjustment - Handling of correspondence and market registers - filling forms and stationery - Kind of reports - report preparation - enquiries.

UNIT-IV

Office Machines, manuals, charts and reports - Kind of office machines - Objectives and advantages of various machines - Use of machines - installing, handling, maintenance - Objectives and advantages of office manuals charts, preparation and play of manuals and charts.

UNIT- V

Personnel Management – Supervision - Control and coordination - Office staff - Selection, training and development- Supervision - Importance and span of supervision- Discipline - Importance and manner of office control - work control and work distribution.

B.COM PRACTICAL WORK SYLLABUS

V Semester

Practical 1: Bank instruments – Cheques – drafts – pay in slip – Pass book
Practical 2 : Accounting – Financial statements of sole trader, partnership firm and company – analysis – identification of differences.
Practical 3: study of Company documents such as MOA, AOA and prospectus ---1
Practical 4: study of Company documents such as MOA, AOA and prospectus ---2
Practical 5: Different forms of tax
Practical 6: Negotiable Instruments – Bills of Exchange – Cheques – Promissory note.
Practical 7: Data collection using primary data collection methods
Practical 8: Secondary data collection
Practical 9: Internal check and internal audit
Practical 10: Study of Balance Sheets and present aa report on comparative analysis.
Practical 11: Calculation of income under various heads.
Practical 12: Successful leaders and managers
Marks for external exam ---20 and record –10, Total marks --30

VI Semester

Practical: 1 Purchase cycle including record and documents.
Practical2: Study of funds flow and cash flow - with the help of audited balance sheets.
Practical 3: Ratio Analysis
Practical 4: Conducting market survey to get customer satisfaction.
Practical 5: Preparation and presentation of different kinds of advertisements 1
Practical6: Letter writing – different kinds of letters -1.
Practical 7: Preparation and presentation of different kinds of advertisements 2
Practical8: Letter writing – different kinds of letters, including preparation of resume -2.
Practical 9: Public speech
Practical 10: Interview – Conducting a mock interview
Practical 11: Filing of Income Tax Returns

Practical 12: Business documents including export documents

Marks for external exam ---20 and record –5 Total marks --30

DEPARTMENT OF B.COM. COMPUTERS:

The meeting of the Boards of Studies in Computer Science was held on Friday, 06.03.2020 at 12.00 Noon in the Department of Computer Science.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

1. Dr.A.Yesu Babu, Sir C.R.R. College Engineering, Eluru

External experts:

2. Mr.Suneel Kumar Duvvuri, Government Degree College, Rajahmundry

Faculty:

3. Mrs.P.Lakshmi Prasanna
4. Mrs.G.Prasanthi
5. Mrs.T.Swathi
6. Mrs.G.Radhika
7. Mr.P.L.N.Manoj Kumar

Students:

8. Mounika Chandra, III B.Com. Computers
9. Gayathri, III B.Com. Computers

Resolutions:

It was resolved to follow the existing syllabus for all the Semesters for the academic year 2020-21.

DEPARTMENT OF B.COM. COMPUTERS

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Computer Fundamentals & Photoshop
	II	Paper II	Programming in C
II Year	III	Paper III	Web Technologies-I
	IV	Paper IV	Web Technologies-II
III Year	V	Paper V	Data Base management System
		Paper VI	Computerized Accounting through Tally-I
	VI	Paper VIII A1	Computerized Accounting through Tally-II
		Paper VIII A2	VB.Net programming
		Paper VIII A3	Project Work

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I B.COM. COMPUTERS I SEMESTER – PAPER-I SYLLABUS 2020-21
TITLE: COMPUTER FUNDAMENTALS & PHOTOSHOP

Course Outcome: To explore basic knowledge on computers and Photoshop's beauty from the practical to the painterly artistic and to understand how Photoshop will help you create your own successful images.

UNIT – I

Introduction to computers: Characteristics and limitations of Computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system- Windows basics: desktop, start menu, icons – Recent Developments – Cloud Server.

UNIT – II

Input and Output Devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and free ware software, Memories: primary, secondary and cache memory.

UNIT – III

Introduction to adobe Photoshop

Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, pallets, tool box, screen modes, saving files, reverting files, closing files.

UNIT – IV

Images: working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- **Working with Tool box:** Practice Sessions.

UNIT – V

Layers: Working with layers- layer styles- opacity-adjustment layers. **Filters:** The filter menu, Working with filters- Editing your photo shoot, presentation –how to create ads, artistic filter, blur filter, brush store filter, distort filters, noice filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

Reference Books:

1. Reema Thareja, Fundamentals of Computers, Oxford University Press
2. Adobe Creative Team, Adobe Photoshop Class Room in a Book.
3. David Maxwell, Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016.

I B.COM COMPUTER II SEMESTER – PAPER-II SYLLABUS 2020-21
TITLE: PROGRAMMING IN 'C'

Course Objective:

- To develop programming skills using the fundamentals and basics of C-language
- To impart the knowledge about pointers which is the backbone of effective memory handling.
- To study the advantages of user defined data type which provides flexibility for application development

Course outcome :

- The students can be able to develop programs using the basic elements like control statements, Arrays and Strings.
- The students can solve the memory access problems by using pointers

UNIT – I

Introduction to programming concepts: Algorithm-Flowchart-Constants-Variables-Data types- Characters set – C tokens – keywords – identifiers – operators and expressions – arithmetic operators, relational operators, logical operators, assignment operators – arithmetic expressions – precedence of arithmetic expressions.

UNIT – II

Decision making and looping: If statement: simple if, if-else, nested if-else, else-if ladder – switch statement – go to if statement- Looping: while, do-while, for-jumps in loops.

UNIT – III

Arrays: Introduction one dimensional arrays – two dimensional arrays – Handling of character strings: declaring and initializing string variables – reading and writing strings – arithmetic operators on characters – putting strings together – comparison of string handling functions.

UNIT – IV

User defined functions: Need of user defined functions – calling a function – no arguments and no return values – arguments with no return values – arguments with return values – recursion – structure and unions.

UNIT – V

Pointers: Understanding pointers – declaring and initializing pointers – pointes – pointers and arrays – pointers and functions –File management in C: introduction – defining a file – closing a file – operating file input/output operations on files.

Text Books:
1. Programming in ANSI C – Balaguruswamy

II B.COM COMPUTER III SEMESTER – PAPER-III SYLLABUS 2020-21
TITLE: WEB TECHNOLOGIES-I

UNIT – I

Introduction To Internet Concepts: What is the internet, history of the Internet,Uses of the Internet,Protocols,E-mail,World Wide Web,Computers in Business,Web browsers,Website,Web page.

UNIT – II

Internet Technologies: Modem,Internet addressing, Physical connections, Telephone lines,Internet Explorer, Netscape Navigator, Types of Networks, Protocols: IP,TCP,UDP,HTTP,Telnet,POP.

UNIT – III

Introduction to HTML: Introduction to HTMl : Basic Html,The Document Body,Text,Hyperlinks,Adding,More Formatting,Lists,Tables.more html:Using colors and images,Images Multimedia objects, frames,forms-towards interactivity, the html document head in detail,XHTML-An evolutionary markup.

UNIT – VI

Dhtml(Dynamic HTML): Introduction to DHTML,Defining Style Sheets,CSS syntax,CSS colors,Borders,CSS backgrounds,CSS margins,CSS Lists,CSS Fonts,CSS Links,CSS tables,CSS Image gallery,CSS Forms.

UNIT – V

An introduction to JAVA script: JAVAScript, javaScript – The Basics, variables, Stringmanipulation, mathematical functions statements, operators, arrays, functions.

Text books:

N.P Gopalan, J.Akilandeswari, "Web Technology – A Developer's Perspective", PHI (2008)

II B.COM COMPUTER IV SEMESTER – PAPER-IV SYLLABUS 2020-21
TITLE: WEB TECHNOLOGIES-II

Course Objectives:.

- To give an introduction to Web designing..
- To Demonstrate and Understand XML and DTD.
- To understand about regular expressions, exception handling.
- To Demonstrate and Understand Dynamic HTML with JavaScript
- To give an introduction into PHP,MYSQL,XAMPP server
- To describe classification of variables, data types and Operators and Expressions.
- To demonstrate Flow Control functions in PHP

Course Outcome:

The student should able to Master working successfully on the design of Web applications with visual elements. And also student get an idea on PHP which is used as server side scripting language.

UNIT – I

Objects in java script: Data and Objects in java script,regular expressions,exception handling,Built in objects,events.

UNIT – II

Basic XML Concepts: Introduction,HTML Vs XML,Syntax of the XML document,XML validation,XML DTD,The Buliding blocks of XML documents.

UNIT – III

DTD Elements,Declaring an element,Empty elements,Elements with Data,Elements with children,Wrapping,DTD Attributes.

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UNIT – IV

Installing and configuring PHP,MYSQL,XAMPP server. Variables: Global and super global. Data types: Changing type by casting. Use of var_dump operator for data types. Operators and Expressions: Assignment operators, arithmetic operators, concatenation operators, comparison operators, increment and decrement operators, constants.

UNIT – V

Flow Control functions in PHP : If statement, If-else statement, Switch statement, using the ? operator, While statement, do-while statement, for statement, break and continue statement.

Text books:

1.Chris Bates.Web Programming Building Internet Applications,Second Edition, Wiley(2007).
2.PHP, MY SQL and APACHE by Julice C.Meloni.

III BCOM COMPUTER V SEMESTER - PAPER-V SYLLABUS 2020-21
TITLE: DATABASE MANAGEMENT SYSTEM

Course Objectives

- To give an introduction into DBMS.
- To describe DBMS architecture
- To provide an insight into Conceptual Model & Relational Model
- To demonstrate and understand the theory of Normalization.

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Course outcome:

The student should be able to Master working successfully on the design and development of a database application system

UNIT-I

Introduction - data, database, dbms – advantages of database management approach – components of a database management system – history of database management system.

UNIT-II

Data independence – data models – database manager – database administrator – database user – entitles and entity sets – relationship and relationship sets – attributes – mapping constraints – entity relationship diagram – reducing e-r diagrams to tables.

UNIT-III

Definitions: tables, classes and keys: first normal form, second normal form, third normal form , fourth normal form- boyce – code normal form – data rules and migrate

UNIT-IV

Sql: introduction – data types- data definition language: create, drop,alter-data manipulation language: insert, update, modify, delete – data control language:graint,revoke-transaction control language: commit, rollback, save point.

UNIT-V

More on sql – subqueries – combining table with and & or clauses. Like – order by – group by having – selecting in a list of values – union – intersection – minus aggregate function – max, min, avg, count.

Text books:

1. Database management systems: Gerlad V. Post (Chapter -1, Chapter – 3)
2. Database system concepts:Korth & Silberschatz (Chapter1, Chapter 2)
3. Oracle8 complete reference.

III B.COM. COMPUTER V SEMESTER PAPER-VI SYLLABUS 2020-21

PAPER: COMPUTERISED ACCOUNTING THROUGH TALLY – I

Course Objectives

- To aware the students about Accounting Packages like Tally.
- To introduce the computerized business transactions in order to getting financial reports.
- To demonstrate Company creation, Ledgers and Vouchers in Tally.
- To provide an insight into getting reports.
- To utilize the advanced features of Tally to run the business in an efficient way.

Outcomes:

After finishing the course, the student will be able to create a company, ledgers and how to enter vouchers in tally. And learn how to get the reports and printing.

UNIT – I

Basic of Accounting: Introduction- Types of Accounts - Accounting Principles or concepts - Mode of Accounting -Rules of Accounting - Double entry system of book keeping – Journal Entries – Ledgers – Trail balance – Trading Account – Profit and Loss Account – Balance Sheet – Adjustment Entries.

UNIT – II

Fundamentals Of Tally.Erp 9 : Introduction of Tally.ERP 9 - History of tally - Versions of tally – Tally features - Getting Functional with Tally.ERP 9 - Tally Start-Up - Tally Screen Components - Mouse / Keyboard Conventions - Quitting Tally.ERP 9 - Company Creation - Opening (Loading) of Tally - Modification of Tally - Deletion of Company - Shut (Close) a Company - Company Selection – Changing Company Date – Changing Company Period – Creating Group Company – Splitting Companies in Tally.

UNIT – III

Set-Up of Accounts & Vouchers: The Ledger: Creating a Single Ledger - Creating a Purchase / Sales Ledger - Creating a Expenses / Income Ledger - Creating a Party Ledger - Creating Bank Account - Creating Duties and Taxes Ledger - Creating a Current Liabilities/ Assets Ledger. **Creating a Multiple Ledger**: Displaying or Alter a Single Ledger Account. - Deleting a Single Ledger Account.

Vouchers Voucher Types - Accounting Voucher - Contra Voucher (F4) - Payment Voucher (F5) - Receipt Voucher (F6) - Sales Vouchers (F8) – Purchase Vouchers(F9), Journal Voucher(F7), Pre-defined Voucher Types in Tally.ERP 9 - Alter a Pre-defined Voucher Type.

UNIT – IV

Inventory / Items & Goods/Stock & Reports: Creating a Single Stock Group - Modifying a Single Stock Group - Displaying a Stock Group - Deleting a Single Stock Group- Creating a Multiple Stock Group - Creation of Stock Units Alternation / Deletion of Stock Units - Stock Items - Creation of Single Stock Item - Creation of Multiple Stock Item - Modification and Deletion of Stock Item. Purchase Voucher and Sales Voucher with Inventory.

Reports: Balance Sheet - Profit & Loss Account - Stock Summary - Trial Balance - Day Book - Books of Accounts / Inventory - Cash Book - Petty Cash Book - Bank Book, Journal Register- Ledger - Group Summary - Group Voucher - Purchase Register - Sales Register – **Printing Different Reports.**

UNIT – V

Tally Advanced Vouchers & Utilities: Credit Note Voucher (Ctrl + F8) - Debit Note Vouchers (Ctrl + F9) Memo Vouchers (Ctrl + F10) – Post Dated Vouchers – Optional/Regular Vouchers – Stock Journal Voucher (Alt+F7) – Physical Stock Vouchers (Alt+F10).

Utility: Back Up / Restore - Tally Vault - Exporting Master Data - Importing Data - Password or Security Control - Types of Security (Security or authority levels) - Users and Passwords – Emailing Data - Enabling Cheque Printing - Printing Cheques – Configuration settings at Different Screens.

Text Books:

- Tally ERP9 book (advanced Usage) – Sanjay Satpathy.
- Tally ERP (Power of Simplicity) – Shradda Singh, Navneet Mehra.
- Learn Tally.ERP 9 in 30 days (Sowmya Rajan Behera)

III B.COM. COMPUTER VI SEMESTER - PAPER-VIII A1 SYLLABUS 2020-21

TITLE: COMPUTERISED ACCOUNTING THROUGH TALLY – II (Cluster Elective)

Course Objectives

- To aware the students about advanced features.
- To introduce the students advanced options like billwise details, interest calculations etc.
- To demonstrate taxation features for computing tax.
- To provide an insight into getting advanced reports.
- To utilize the advanced features of Tally to run the business in an efficient way.

Outcomes:

After finishing the course, the student will be able to create a company, ledgers and how to enter vouchers in tally. And learn how to get the reports and printing.

UNIT-I

Introduction Features: Features Introduction: Accounting Features – Inventory Features – Taxation Features**Accounting Features:** Multi Currency – Bill wise Details – Interest Calculation.

UNIT-II

Accounting & Inventory Features: Cost centers - Budgets and Controls – Payroll Process Inventory Features: Zero Valued Transactions – Godowns – Stock Categories – Batch wise details – Separate Actual and Billed Quantity.

UNIT-III

Inventory Features: Sales order and Purchase order processing – Discount Columns – Price Levels – Additional Cost of Purchase – Rejection in and Rejection out.

UNIT-IV

Taxation Fetaures: VAT tax – Excise duty – Service Tax – TDS – TCS.

UNIT-V

Practical Exercises: Exercise Problems on Ledgers – Inventory – Practical Problems on daily transactions (4) – Problems on Bill wise details – Payroll – Interest Calculations – Cost Centres – Godowns – Multiple Price levels - Batch wise details – Separate Actual and Billed columns – VAT – TDS – TCS.

Suggested Books:

- Tally ERP9 book (advanced Usage) – Sanjay Satpathy
- Tally ERP (Power of Simplicity) – Shradda Singh, Navneet Mehra
- Learn Tally.ERP 9 in 30 days (Sowmya Rajan Behera)

III B.COM. COMPUTER VI SEMESTER PAPER-VIII A2 SYLLABUS 2020-21

PAPER: VB .NET PROGRAMMING (Cluster Elective)

UNIT – I

Introduction :-Introduction to programming: program, programming language, conversion from source language to Machine language, program development cycle. .NET FRAME WORK: Introduction, versions of .NETframe work, Benefits of .NET frame work, components of .net frame work.

UNIT – II

Getting started with visual basic: Introduction ,keywords , operators, data types, statements, arrays, object oriented programming: Introduction, Basic principles of objects, Inheritance, Interfaces, Polymorphism, Structures, name spaces.

UNIT – III

Windows forms: Introduction, The form class, common operations on windows forms, Creating a message box, Creating an input box, Creating a dialogue box, Handling events, commenting the code.

UNIT – IV

Working with windows form controls :Introduction :The control class, using the label control, text box control, Button contro l,Radio Button control ,check box control, combo box control, list box control, group box control, panel control, picture box control, menu strip control, status strip control, dialogue boxes.

UNIT – V

Errors and exception handling: Introduction, Types of errors, Exceptions ,Exception classes,using the type, catch, finally statements, using the through statement, using a user defined exception classes.

Text Books:

Comdex .NET PROGRAMMING COURSE KIT - VIKAS GUPTA

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III B.COM. COMPUTER VI SEMESTER PAPER-VIII A3 SYLLABUS 2020-21

(Cluster Elective)

PROJECT WORK

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DEPARTMENT OF MATHEMATICS

Boards of Studies meeting in Mathematics was held on Saturday, 07.03.2020 at 10.00 a.m. in the Mathematics Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello., Principal

University Nominee:

2. Sri P.N.V.Prasada Rao, Sir C.R.R. College (A), Eluru

External experts:

3. Dr.K.Venkata Rao, Government Degree College, Alamuru.

Faculty:

4. Dr.Mrs.K.L.Saraswathi Devi
5. Mr.V.Gopinath
6. Ms.S.Naga Durga
7. Mrs.A.Jyothi
8. Mrs.G.Jyothi
9. Mrs.P.Poojitha
10. Mrs.P.Rajitha
11. Ms.B.V.Sai Lakshmi
12. Mrs.K.Harika

Students:

1. V.Naga Chandana, III B.Sc. M.P.C.
2. N.Prem Sithara, III B.Sc. M.S.Comp.

Resolutions:

1. After thorough discussion, the Board felt that to continue the syllabi as it is for all the Semesters I, II, III, IV, V & VI, at the same time the Board opined that to encourage more number of Students in VI Semester to take up Project work to develop skills.
   (i) in identifying one's area of interest in the Subject
   (ii) To develop ability to learn independently and
   (iii) To explore her own ideas

2. The Board accepted the Proposal of administering the certificate courses in toto.

Ch.S.D.St.Theresa's college for women, Eluru

CBCS B.Sc Structure of Mathematics W.E.F(2020-2021)

Year	Semester	Paper	Subject	Hours	Credits	I.A	S.E	Total
I	I	I	Differential Equations & Differential Equations problems solving Sessions	6	5	50	50	100
	II	II	Solid Geometry & Solid Geometry problems Solving sessions	6	5	50	50	100
2	III	III	Abstract algebra & Abstract algebra problem solving sessions	6	5	50	50	100
	IV	IV	Real Analysis & Real Analysis problem solving sessions	6	5	50	50	100
3	V	V	Ring theory and Linear algebra & Ring theory and Linear algebra problem solving sessions	6	5	50	50	100
		VI	Vector calculus and Multiple integrals & Vector calculus and Multiple integrals problem solving sessions	6	5	50	50	100
	VI	VII	Electives (Any one) VII(A)- Numerical analysis and computer programming in C VII(B)- Discrete mathematics VII (C) – Laplace Transformations	6	5	50	50	100
		VIII	Cluster Electives VIII(A) -1- Advanced Numerical analysis and computer programming in C+ VIII(A)-2- Special functions VIII(A)-3- Self-study (Matrix theory) / Projectwork (or) VIII(B)-1- Graph theory and Boolean Algebra VIII(B)-2- Special functions VIII(B)-3- Self-study (Matrix theory) / Projectwork (or) VIII(C)-1 – Integral Transforms VIII(C)-2 – Special functions VIII(C)-3 – Matrix theory/Project work	6	5	50	50	100

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU

I BSC I SEMESTER PAPER I MATHEMATICS SYLLABUS 2020-21

TITLE: DIFFERENTIAL EQUATIONS

UNIT-I

Differential Equations of First orderand first degree: Linear Differential Equations. Differential Equations reducible to Linear form (Chapter 2.5 to 2.6). Exact Differential Equations, Integrating Factors, and Change of variables (Chapter 2.7 to 2.9).

UNIT-II

Higher order Linear Differential Equations: Solutions of Linear Differential Equations of order **n** with constant coefficients. Solutions of non-Homogeneous Linear Differential Equations with constant coefficients by means of Polynomial Operators (when $Q(x)=bx^k$ and $P(D)=D-a_0,\ a_0\neq 0$;when $Q(x)=bx^k$ and $P(D)=a_nD^n+a_{n-1}D^{n-1}+.....+a_1D$; when $Q(x)=be^{ax}$;when $Q(x)=b\sin ax \ or\ b\cos ax$) (Chapter 5.2 to 5.3.4)

Solutions of the non homogeneous linear differential equations with constant coefficients by means of polynomial operators (when $Q(x)=e^{ax}V$ where V is a function of x ;when $Q(x)=be^{ax}$ and $P(a)=0$; when $Q(x)=xV$ where V is any function of x. $Q(x)=b\sin ax \ or\ b\cos ax$) (5.3.5 to 5.3.7) Chapter: 5.2 to 5.3

UNIT-III

Higher order Linear Differential Equations: Method of undetermined Coefficients. (Chapter 5.4). Method of Variation of Parameters. Linear Differential Equations with non-constant coefficients. (Chapter 5.5 to 5.6).

UNIT-IV

Applications of First order Differential Equations: Growth and decay – Dynamics of tumor growth (Chapter 4.1 to 4.2) .
Radio activity and Carbon dating, Orthogonal trajectories (4.3 and 4.20)

UNIT-V

Applications of Higher order Differential Equations - Rectilinear motion – Simple pendulum (Chapter 6.1 to 6.2).
Damped motion - Forced motion (Chapter 6.3 to 6.4)

Prescribed book:

1. Differential Equations and their applications, 2nd edition by Zafar Ahsan, PHI Private Limited, New Delhi.

Suggested Activities: Seminar/ Quiz/ Assignments

I BSC II SEMESTER PAPER-II MATHEMATICS SYLLABUS 2020-21
TITLE: SOLID GEOMETRY

UNIT-I

Plane: Intercept form of the equation of the plane. Plane through three points. System of planes. Two sides of a plane. (Ch.2.4 to 2.6). Length of the perpendicular from a point to a plane. Bisector of angles between two planes. Joint equation of two planes. Orthogonal projection on a plane (Ch.2.7 to 2.9).

UNIT – II

Right Line: Representation of Line. Equation of the Line through a given point drawn in a given direction. Equation of a Line through two points. Two forms of the equation of a line, Transformation from unsymmetrical to the symmetrical form. Angle between a Line and a plane. Condition for a Line to lie in a plane. (Ch.3.1 to 3.3).

UNIT – III

Right Line: Coplanar Lines(both symmetrical form, both unsymmetrical form, one is symmetric and another one is un symmetric form), condition for the Co planarity of Lines. Number of arbitrary constants in the equations of a straight line. (Ch: 3.4 & 3.5). The shortest distance between two lines(both symmetrical form, both unsymmetrical form, one is symmetric and another one is un symmetric form), Length of the perpendicular from a point to a line . (Ch: 3.6 & 3.7)

UNIT –IV

The Sphere: Definition, Equation of a Sphere. General equation of a sphere. The Sphere through four given points. (Ch.6.1 & 6.2). Plane section of a sphere. Intersection of two spheres. Sphere with a given diameter. Equations of a circle. Sphere through a given circle (Ch: 6.3 & 6.4).

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UNIT –V

The Sphere: Intersection of a sphere and a line. Power of a point. Equation of a tangent plane. Plane of contact. The polar plane. Pole of a plane, some results concerning polses and polars. Angle of intersection of two spheres. Condition for the orthogonality of two spheres. Radical plane. Radical line. Radical centre. Simplified form of the equation of two given Spheres. (Ch.6.5 to 6.9).

Text book: Analytical solid geometry - Shanthi Narayann and P.K. Mittal, published by S.Chand & Company Ltd., New Delhi (2008).

Suggested Activities: Seminar/ Quiz/ Assignments

II BSC III SEMESTER PAPER-III MATHEMATICS SYLLABUS 2020-21
TITLE: ABSTRACT ALGEBRA

UNIT-I

Groups: Binary Operation – Algebraic structure – semi group-monoid – Group definition and elementary properties Finite and Infinite groups – examples – order of a group. Composition tables with examples. **(Chapter :2.1 to 2.15)**

UNIT-II

Subgroups, Co-sets and Lagrange's Theorem : Complex Definition – Multiplication of two complexes Inverse of a complex-Subgroup definition – examples-criterion for a complex to be a subgroups.Criterion for the product of two subgroups to be a subgroup-union and Intersection of subgroups. **(Chapter: 3)**

Cosets Definition – properties of Cosets–Index of a subgroups of a finite groups–Lagrange's Theorem. **(Chapter: 4.1 to 4.4)**

UNIT-III

Normal Subgroups : Definition of normal subgroup – proper and improper normal subgroup– Hamilton group – criterion for a subgroup to be a normal subgroup – intersection of two normal subgroups – Sub group of index 2 is a normal sub group – simple group – quotient group – criteria for the existence of a quotient group. **(Chapter: 5)**

UNIT-IV

Homomorphism : Definition of homomorphism – Image of homomorphism elementary properties of homomorphism – Isomorphism – aultomorphism definitions and elementary properties–kernel of a homomorphism – fundamental theorem on Homomorphism and applications. **(Chapter: 6)**

UNIT-V

Permutations and Cyclic groups : Definition of permutation – permutation multiplication – Inverse of a permutation – cyclic permutations – transposition – even and odd permutations – Cayley's theorem. **(Chapter: 7)**

Cyclic Groups : Definition of cyclic group – elementary properties – classification of cyclic groups.**(Chapter: 8.1 to 8.4).**

Prescribed book: **A Text Book of B.Sc., Mathematics Volume-II – S.CHAND. (14th Revised edition)**

Suggested Activities: Seminar/ Quiz/ Assignments

II BSC IV SEMESTER PAPER-IV MATHEMATICS SYLLABUS 2020-21
TITLE: REAL ANALYSIS

UNIT-I

Real numbers &Sequences: The algebraic and order properties of R –Absolute value and real line,completeness property of R-Applications of supreme property-intervals.(**No Question is to be set from this portion**). Sequences and their limits-Range and Bounded of sequences-Limit of a sequence and convergent sequence-Theorems on limits-Properly divergent sequences-Monotone sequences. (14.1 to 14.11).
Limit point of a sequence-Peak of a sequence and monotone subsequences-Cauchy sequences-Cauchy's general principle of convergence-Cauchy's first theorem on limits-Cauchy's second theorem-Cesaro's theorem. (14.12 to 14.16)

UNIT-II

Series: Introduction to series-Convergence of series-Cauchy's general principle of convergence for series Series of non-negative terms.1.Geom,etric series.2.P-Series test.3.Limit comparision test.4.Cauchy's n^{th} root test or Root test.) (15.1 to 15.7)
D'Alembert's test or Ratio test Raabe's test (Only problems on Raabe's test) Alternating series-Leibnitz test. Absolute convergence and Conditional convergence (15.8 ,15.12 and15.13).

UNIT-III

Continuous Functions: Real valued functions-Boundedness of a function-Limit of function-Algebra of limits-Limits of some standard functions-infinite limits-Limits at infinity(**No question is to be set from this portion).**
Continuous functions-Continuity of a function at point- Continuity in an internal-Sequence criterion or Heine's theorem-Discontinuity-Continuity of some standard functions-Algebra of continuous functions. (16.9 to 16.14)
Properties of continuous functions on a closed interval, uniform continuity (16.15 and 16.16).

UNIT-IV

Differentiation: Derivability of a function at a point-Derivability on an interval-Derivability and continuity of a function- Algebra of derivatives, Increasing and decreasing functions, Darboux's theorem (17.1 to 17.7 and 17.10 to 17.11).
Mean value theorems: Role's theorem, Lagrange's mean value theorem, Cauchy's mean value theorem, Generalised mean value theorems - Taylor's theorem - Maclaurin's theorem - Taylor's and Maclaurin's series-Power series representation of functions (17.12,17.14 and17.15).

UNIT-V

Riemann Integration: Riemann integral, Riemann integrable functions - Darboux's theorem - Necessary and sufficient condition for integrability (18.1 to 18.8).
Properties of integrable functions, Fundamental theorem of integral calculus-Integral as the limit of a sum- Mean value theorems-Change of variable in an integral (18.9 to 18.15).

Prescribed Book – A Text Book of B.Sc., Mathematics Volume-II – S.CHAND. (14^{th} Revised edition).
Suggested Activities: Seminar/ Quiz/ Assignments

III BSC V SEMESTER MATHEMATICS PAPER-V SYLLABUS 2020-21
TITLE: RING THEORY AND LINEAR ALGEBRA

UNIT-I

Rings: Definition of Ring and basic properties ,Boolean Rings, Divisors of zero and cancellation laws Rings, Integral Domains, Division Ring and Fields, The characteristic of a ring, The characteristic of an Integral Domain, The Characteristic of a field, Sub Rings, Ideals,Principal ideal,Quotient Rings. Chapter: 9 and 10 (10.1 to 10.4)

UNIT-II

Homomorphism of a Ring: Definition of Homomorphism, Homomorphic image, Elementary properties of Homomorphism, Kernel of Homomorphism, Fundamental theorem of Homomorphism, Maximal Ideals, Prime Ideals. Chapter: 11

UNIT-III

Vector spaces: Vector spaces, general properties of vector spaces, vector sub spaces, algebra of sub spaces, linear sum of two sub spaces, linear combination of vectors, linear span, linear independence and dependence of vectors. (Chapter 1).

UNIT-IV

Basis and Dimension: Basis of vector space, finite dimensional space, basis extension, Coordinates, Dimension of vector space, dimension of sub space, quotient set, dimension of a quotient space. (Chapter 2).

UNIT-V

Linear transformations: Linear transformation, linear operators, range and null space of a linear transformation, rank and nullity of linear transformation, linear transformations as vectors, product of linear transformations. (Chapter 3).

Prescribed text books:

For units I&II- A Text Book of B.Sc., Mathematics Volume-II – S.CHAND. (14^{th} Revised edition).

For units III,IV&V- A Text Book of B.Sc., Mathematics Volume-III – S.CHAND. (Revised edition)

Suggested Activities: Seminar/ Quiz/ Assignments

III BSC V SEMESTER MATHEMATICS PAPER-VI SYLLABUS 2020-21
TITLE: MULTIPLE INTEGRALS AND VECTOR CALCULUS

UNIT-I

Line integrals and Double integrals: Line integrals, some properties of line integrals, The area of a subset of R^2, Double integrals, Darboux's theorem, An important class of integrable functions, Double integral over a rectangle as limit of a sum. **Chapter**: 10.1 to 10.19.

UNIT-II

Line integrals and Double integrals (contd.): Simple closed curves, Boundary point, Boundary of a set, integration over non-rectangular regions, area of a subset of R in terms of a Double integral. Evaluation of Double integrals by changing the order of integration, Change of variables in a Double integral. **Chapter**: 10.26 to 10.30 (Except 10.28)

UNIT-III

Derivative of a vector function, Differential operators: Vector function of a scalar variable, Limit and continuity of a vector function, Derivative of a constant vector, Composite vector function, and Partial differentiation. Scalar and vector point function, Directional derivative at a poiont,Gradient of a scalar point function, Level surface, Operators, Divergence of a vector,Solenoidal vector, Laplacean operator, Curl of a vector, Irrotational vector, Vector identities. **Chapter**: 12 and13

UNIT-IV

Integration of vector: Definite integral, Line surface, Volume, Integrals oriented curve, Surface integrals, flux, Volume integrals. **Chapter**: 14

UNIT-V

Integral transformations: Gauss divergence theorem and the problems, Deductions from Gauss theorem, Green's theorem in a plane and the problems, Stoke's theorem and the problems on Stoke's theorem in a plane. **Chapter**: 15

Text Books:

1. A Text Book of B.Sc., Mathematics Volume-III – S.CHAND (revised edition 2010).

Suggested Activities: Seminar/ Quiz/ Assignments

III BSC VI SEMESTER MATHEMATICS PAPER –VII(A) SYLLABUS 2020-21
TITLE: NUMERICAL ANALYSIS AND COMPUTER PROGRAMMING IN C
(Subject Eletive for Chemistry combinations)

UNIT-I

The calculus of finite differences: Introduction, Differences, Difference formulae, Fundamental theorem of the differential calculus, The operator E, Properties of two operators E and s, One or more missing terms, Factorial notation, Methods of representing any given polynomial in factorial notation. **(Chapter: 1.01-1.11)**

UNIT-II

Interpolation with equal and un equal intervals: Introduction, Different interpolation methods. Use of calculus of finite differences; Newton's forward difference interpolation formula, Newton's backward difference interpolation formula. Introduction Interpolation with unequal intervals Divided differences, Properties of divided differences, Newton's general interpolation formula (Newton's divided difference interpolation formula), Lagrange's interpolation formula. (Chapter: 2.01-2.03) (chapter: 3.01-3.08)

UNIT-III

Central difference interpolation formulae: Introduction, Gauss forward interpolation formula, Gauss backward interpolation formula, Stirling's formula, Bessel's formula**.** (Chapter:4.01 - 4.04).

UNIT-IV

Introduction to Algorithms and Programming Languages: Key features of Algorithms-Some more Algorithms-Flow Charts.
Introduction to C: Introduction –Structure of C Program-Using Comments-Keywords-Identifiers-Basic Data Type in C-Variables-Constants-I/O Statements in C-Operators in C-Programming Examples-Type Conversion and Type casting.

UNIT-V

Decision Control and Looping Statements: Introduction to Decision Statements-Conditional Branching Statements-Iterative Statements-Nested Loops-Break and Continue Statement-Goto Statement.
Functions: Introduction-using functions-Function declaration/prototype-Function definition-function call-return statement-passing parameters-Scope of variables-Storage Classes-Recursive Functions-Type of recursion.

Prescribed Book:
For units I,II&III-Calculus of finite differences and Numerical Analysis by Gupta- Malik.
For units IV&V-- Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS.
Reference Book: Introductory methods of Numerical analysis by S.S.Sastry
Suggested Activities: Seminar/ Quiz/ Assignments

III BSC VI SEMESTER MATHEMATICS PAPER –VII(B) SYLLABUS 2020-21

TITLE: DISCRETE MATHEMATICS

(Subject Elective for Computer combinations)

UNIT-I

Foundations: Sets and operations of sets, Relations and functions, some methods of proof and problem solving strategies. Fundamentals of logic, Logical inferences. (Chapter: 1.2 to 1.6).

UNIT-II

Foundations continuation: Methods of proof of an implication, First order logic and Other methods of proof, Rules of inference for Quantified propositions, Mathematical Induction. (Chapter: 1.7 to 1.10)

UNIT-III

Recurrence Relations: Generating functions of sequences, calculating coefficients of Generating functions. (Chapter: 3.1 and 3.2.)

UNIT-IV

Recurrence Relations continuation: Recurrence relations, solving recurrence relations by substitution and generating functions. (Chapter: 3.3 and 3.4.)

UNIT-V

Recurrence Relations continuation: The method of characteristic roots, Solutions Of in homogeneous recurrence relations. (Chapter: 3.5 and 3.6)

Text book:

1. Discrete mathematics for computer scientists & mathematicians by7 Joe L.Mott, Abraham Kandel, Theodore P.Baker, Prentice-Hall of India Private limited, New Delhi,2nd Edition.

Suggested Activities: Seminar/ Quiz/ Assignments

III BSC VI SEMESTER MATHEMATICS PAPER –VII(C) SYLLABUS 2020-21

TITLE: LAPLACE TRANSFORMATIONS (Subject Elective)

UNIT-I (12 Hrs.)

Laplace Transform I : - Definition of - Integral Transform – Laplace Transform Linearity, Property, Piecewise continuous Functions, Existence of Laplace Transform, Functions of Exponential order, and of Class A.

UNIT-II (12 Hrs.)

Laplace Transform II : - First Shifting Theorem, Second Shifting Theorem, Change of Scale Property, Laplace Transform of the derivative of f(t), Initial Value theorem and Final Value theorem.

UNIT-III (12 Hrs.)

Laplace Transform III : - Laplace Transform of Integrals – Multiplication by t, Multiplication by tn – Division by t. Laplace transform of Bessel Function, Laplace Transform of Error Function, Laplace Transform of Sine and cosine integrals.

UNIT-IV (12 Hrs.)

Inverse Laplace Transform I : - Definition of Inverse Laplace Transform. Linearity, Property, First Shifting Theorem, Second Shifting Theorem, Change of Scale property, use of partial fractions, Examples.

UNIT-V (12 Hrs.)

Inverse Laplace Transform II : - Inverse Laplace transforms of Derivatives–Inverse Laplace Transforms of Integrals – Multiplication by Powers of 'P'– Division by powers of 'P'– Convolution Definition – Convolution Theorem – proof and Applications – Heaviside's Expansion theorem and its Applications.

Prescribed Book :

Laplace Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.

Reference Books :

1. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Co., Pvt. Ltd., New Delhi.

2. Laplace and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan, Meerut.

3. Integral Transforms by M.D. Raising hania, - H.C. Saxsena and H.K. Dass Published by S. Chand and Co., Pvt.Ltd., New Delhi.

Suggested Activities: Seminar/ Quiz/ Assignments

III BSC VI SEMESTER MATHEMATICS PAPER-VIII A1 SYLLABUS 2020-21
TITLE: ADVANCED NUMERICAL ANALYSIS & COMPUTER PROGRAMING IN C+
(Cluster Elective – for Chemistry combinations)

UNIT-I

Numerical integration: Introduction a general quadrature formula for equidistsnt ordinates, Trapezoidal rule, Simpsons1/3rule, Simpson's 3/8rule, Boole's rule and Weddle's rule. **Chapter**: (6.01 to 6.07).

UNIT-II

Solutions of Algebraic and transcendental equations: Introduction, The bisection method, The method of false position, The iteration method, Newton - Raphson method, Ramanujan's method, Muller's method. (Chapter: 12.00-12.01B)

UNIT-III

Numerical solution of ordinary differential equations of first order: Introduction Picard's method of Successive approximations, Euler's Method, Modified Euler's. Taylor's series, Runge- Kutta method: r-k method of second order r-k method of third Order, R-k method of fourth order. Chapter: (11.00 to 11.02, 11.4 to 11.05).

UNIT-IV

Arrays: Intriduction-Declaration of Arrays-Accessing elements of the Array-Storing Values in Array-Operations that can be performed on Array-One dimensional array-Two dimensional Arrays.

trings: Introduction –Suppressive Input-String Taxonomy-String Operations-Miscellaneous String and Character functions.

POINTERS: Understanding computer Memory-Introduction to pointers-declaring Pointer Variables-Pointer Expressions and Pointer Arthmetic –null Pointers-Generic Pointers-Passing Arguments to Functions using Pointer-Array of pointers-Pointers to Pointers-Dynamic Memory Allocation-Drawbacks of Pointers.

UNIT-V

Structure,Union,and Enumerated Data Types: Introduction-Initializing a Structure-Accessing Structure variables-Union-Initializing a union-Accessing Union variables-Difference between Structure and Union-Enumerated Data Types.

Files: Introduction to files-Using Files in C-Reading Data from Files-Writing Data from Files-Detecting the End –of-file-Error Handling during File Operations-Accepting Command Line Arguments-Functions for Selecting a Record Randomly-Remove-Renaming a File-Creating a Temporary File.

Prescribed text book: For units I,II&III-Calculus of finite differences and Numerical Analysis by Gupta- Malik.

For units IV&V-- Computer Fundamentals and Programming in C by Reema Thareja from Oxford University Press.

Reference Book: Introductory methods of Numerical analysis by S.S.Sastry

Suggested Activities: Seminar/ Quiz/ Assignments

III BSC VI SEMESTER MATHEMATICS PAPER-VIII A2 SYLLABUS 2020-21
TITLE: SPECIAL FUNCTIONS (Cluster Elective)

UNIT-I

Hermite Polynomial: Hermite Differential Equations, Solution of Hermite Equation, Hermite's Polynomials, Generating function, Other forms for Hermite Polynomial, To find first few Hermite Polynomials, Orthogonal properties of Hermite Polynomials, Recurrence formulae for Hermite Polynomials. Chapter: 6.1 to 6.8

UNIT-II

Laguerre Polynomials-I: Laguerre's Differential equation, Solution of Laguerre's equation, Laguerre Polynomials, Generating function, Other forms for the Laguerre Poynomials, To find first few Laguerre Polynomials,Orthogonal property of the Laguerre Polynomials, Recurrence formula for Laguerre Polynomials, Associated Laguerre Equation.

Chapter: 7.1 to 7.9

UNIT-III

Legendre's Equation: Definition, Solution of Legendre's Equation, Definition of $P_n(x)$and $Q_n(x)$,General solution of Legendre's Equation, To show that $P_n(x)$ is the coefficient of h^n in the expansion of $(1-2xh+h^2)^{\frac{-1}{2}}$, Orthogonal properties of Legendre's Equation, Recurrence formula, Rodrigues formula.

Chapter: 2.1 to 2.5 and 2.7,2.8,2.12

UNIT-IV

Bessel's Equation: Definition, Solution of Bessel's General Differential Equations, General solution of Bessel's Equation, Integration of Bessel's equation in series for n=0,Definition of $J_n(x)$, Recurrence formulae for $J_n(x)$,Generating function for $J_n(x)$. Chapter: 5.1 to 5.7

UNIT-V

Beta and Gamma functions: Euler's Integrals-Beta and Gamma Functions, Elementary properties of Gamma Functions, Transformation of Gamma Functions,Another form of Beta Function, Relation between Beta and Gamma Functions,Other Transformations.

Chapter: 2.9 to 2.15

Prescribed text book: Special Functions by J.N.Sharma and Dr.R.K.Gupta.

Reference Books :-

1.Special Functions- E.D-RamValle(2006)
2.Special Functions by N.Saran(2002).

Note: No Question will be given on finding the general solution of Equations from Units-I,II,III & IV.

Suggested Activities: Seminar/ Quiz/ Assignments.

III BSC VI SEMESTER MATHEMATICS PAPER-VIII A3 SYLLABUS 2020-21

TITLE: MATRIX THEORY (Self study course)

UNIT-I

Basic Concepts of Matrices: Basic concepts, Matrix definition, Square matrix, Unit matrix, Null matrix, Equality of two matrices, Addition of matrices, Multiplication of a matrix by a scalar, Multiplication of two matrices(Chapter: 1.1 to 1.9)

Determinants: Determinants of order2,Determinants of order 3,Minors and cofactors(Chapter: 2.1 to 2.3)

Inverse of a matrix: Adjoint of a square matrix, Inverse or Reciprocal of a matrix, Singular and non-singular matrices. (Chapter: 3.1 to 3.3)

UNIT-II

Rank of a Matrix: Definition, sub matrix , Minor of a matrix, Rank of matrix, Echelon form of a matrix, Elementary transformations of a matrix, Elementary matrices, Invariance of rank under elementary transformations, Reduction to normal form, Equivalence of matrices.

(Theorems without proofs) (Chapter: 4.1 to 4.10)

UNIT-III

Linear Equations: Homogenous linear equations, Fundamental set of solutions, System of linear non-homogenous equations, Conditions for consistency.

(Chapeter: 6)

UNIT-IV

Eigen values and Eigen vectors or characteristic roots and characteristic vectors: Matrix polynomials, Definition, characteristic roots and characteristic polynomial and characteristic equation of a matrix, Cayley-Hamilton theorem.

(Chapter: 7)

UNIT-V

Orthogonal vectors: Inner product of two vectors, orthogonal vectors, unitary and orthogonal matrices, orthogonal group . (Chapeter: 9)

Prescribed Book:

MATRICES- BY A.R.VASISTA, KRISHNA PRAKASHAN MEDIA (P) Ltd.

Reference Books :-

1.Matrices by Shanti Narayana, published by S.Chand Publications.

2.Richard Bronson Theory & Problems of Matrix Operations –TATA McGrewHill(1989)

3.R.D.Sharma & Umash Kumar-Basic Applied Mathematics for Physical Sciences,Pearson Education India(P),Ltd.

4.S.H.Fried Berg, A.L.Insel & L.E.Spence, Linear Algebra, Prentice Hall of India(P) Ltd.

Suggested Activities: Seminar/ Quiz/ Assignments.

III BSC VI SEMESTER MATHEMATICS PAPER-VIII B1 SYLLABUS 2020-21
TITLE: GRAPHY THEORY AND BOOLEAN ALGEBRA
(Cluster Elective for Computer combinations)

UNIT-I

Relations and Digraphs: Relations and directed graphs, special properties of binary relations, equivalence relations, ordering relations, lattices and enumerations.(Except applications: Strings and orderings on strings, Proving three are non computable functions). Chapter: 4.1 to 4.4.

UNIT-II

Graphs:Basic concepts, Isomorphisms and sub graphs, trees and their properties.
Chapter: 5.1 to 5.3

UNIT-III

Graphs: Spanning trees (except Breadth –First Search, Depth First Search, and Prim's Algorithms), directed trees, binary trees, planar graphs, Euler's formula. (except Algorithms. Only problems). Chapter: 5.4 to 5.8

UNIT-IV

Graphs: Multigraphs and Euler circuits, Hamiltonian graphs, Chromatic numbers, the four -color problem. Chapter: 5.9 to 5.12

UNIT-V

Boolean Algebras: Introduction, Boolean algebras, Boolean functions, switching mechanisms, Minimization of Boolaen functions. Chapter: 6.1 to 6.5

Prescribed text book:

Discrete mathematics for computer scientists & Mathematicians by Joe L.Mott, Abraham Kandel, Theodore P.Baker, Prentice-Hall of India Private limited, New Delhi,2nd Edition.

III BSC VI SEMESTER MATHEMATICS PAPER-VIII B2 SYLLABUS 2020-21
TITLE: SPECIAL FUNCTIONS (Cluster Elective)

UNIT-I

Hermite Polynomial: Hermite Differential Equations, Solution of Hermite Equation, Hermite's Polynomials, Generating function, Other forms for Hermite Polynomial, To find first few Hermite Polynomials, Orthogonal properties of Hermite Polynomials, Recurrence formulae for Hermite Polynomials. Chapter: 6.1 to 6.8

UNIT-II

Laguerre Polynomials-I: Laguerre's Differential equation, Solution of Laguerre's equation, Laguerre Polynomials, Generating function, Other forms for the Laguerre Poynomials, To find first few Laguerre Polynomials,Orthogonal property of the Laguerre Polynomials, Recurrence formula for Laguerre Polynomials, Associated Laguerre Equation.

Chapter: 7.1 to 7.9

UNIT-III

Legendre's Equation: Definition, Solution of Legendre's Equation, Definition of $P_n(x)$and $Q_n(x)$,General solution of Legendre's Equation, To show that $P_n(x)$ is the coefficient of h^n in the expansion of $(1-2xh+h^2)^{\frac{-1}{2}}$, Orthogonal properties of Legendre's Equation, Recurrence formula, Rodrigues formula.

Chapter: 2.1 to 2.5 and 2.7,2.8,2.12

UNIT-IV

Bessel's Equation: Definition, Solution of Bessel's General Differential Equations, General solution of Bessel's Equation, Integration of Bessel's equation in series for n=0,Definition of $J_n(x)$, Recurrence formulae for $J_n(x)$,Generating function for $J_n(x)$. Chapter: 5.1 to 5.7

UNIT-V

Beta and Gamma functions: Euler's Integrals-Beta and Gamma Functions, Elementary properties of Gamma Functions, Transformation of Gamma Functions,Another form of Beta Function, Relation between Beta and Gamma Functions,Other Transformations.

Chapter: 2.9 to 2.15

Prescribed text book: Special Functions by J.N.Sharma and Dr.R.K.Gupta.

Reference Books :-

1.Special Functions- E.D-RamValle(2006)
2.Special Functions by N.Saran(2002).

Note: No Question will be given on finding the general solution of Equations from Units-I,II,III & IV.

Suggested Activities: Seminar/ Quiz/ Assignments.

III BSC VI SEMESTER MATHEMATICS PAPER-VIII B3 SYLLABUS 2020-21
TITLE: MATRIX THEORY (Self Study course)

UNIT-I

Basic Concepts of Matrices: Basic concepts, Matrix definition, Square matrix, Unit matrix, Null matrix, Equality of two matrices, Addition of matrices, Multiplication of a matrix by a scalar, Multiplication of two matrices(Chapter: 1.1 to 1.9)
Determinants: Determinants of order2,Determinants of order 3,Minors and cofactors(Chapter: 2.1 to 2.3)
Inverse of a matrix: Adjoint of a square matrix, Inverse or Reciprocal of a matrix, Singular and non-singular matrices. (Chapter: 3.1 to 3.3)

UNIT-II

Rank of a Matrix: Definition, sub matrix , Minor of a matrix, Rank of matrix, Echelon form of a matrix, Elementary transformations of a matrix, Elementary matrices, Invariance of rank under elementary transformations, Reduction to normal form, Equivalence of matrices.
(Theorems without proofs) (Chapter: 4.1 to 4.10)

UNIT-III

Linear Equations: Homogenous linear equations, Fundamental set of solutions, System of linear non-homogenous equations, Conditions for consistency.
(Chapeter: 6)

UNIT-IV

Eigen values and Eigen vectors or characteristic roots and characteristic vectors: Matrix polynomials, Definition, characteristic roots and characteristic polynomial and characteristic equation of a matrix, Cayley-Hamilton theorem.
(Chapter: 7)

UNIT-V

Orthogonal vectors: Inner product of two vectors, orthogonal vectors, unitary and orthogonal matrices, orthogonal group . (Chapeter: 9)

Prescribed Book:
MATRICES- BY A.R.VASISTA, KRISHNA PRAKASHAN MEDIA (P) Ltd.

Reference Books :-

1.Matrices by Shanti Narayana, published by S.Chand Publications.
2.Richard Bronson Theory & Problems of Matrix Operations –TATA McGrewHill(1989)
3.R.D.Sharma & Umash Kumar-Basic Applied Mathematics for Physical Sciences,Pearson Education India(P),Ltd.
4.S.H.Fried Berg, A.L.Insel & L.E.Spence, Linear Algebra, Prentice Hall of India(P) Ltd.

Suggested Activities: Seminar/ Quiz/ Assignments.

III BSC VI SEMESTER MATHEMATICS PAPER-VIII C1 SYLLABUS 2020-21
TITLE: INTEGRAL TRANSFORMS (Cluster Elective)

UNIT-I 12 hrs.

Application of Laplace Transform to solutions of Differential Equations :
Solutions of ordinary Differential Equations. Solutions of Differential Equations with constants co-efficient. Solutions of Differential Equations with Variable co-efficient.

UNIT-II 12 hrs.

Application of Laplace Transform :
Solution of simultaneous ordinary Differential Equations. Solutions of partial Differential Equations.

UNIT-III 12 hrs.

Application of Laplace Transforms to Integral Equations :
Definitions : Integral Equations-Abel's, Integral Equation-Integral Equation of Convolution Type, Integro Differential Equations.Application of L.T. to Integral Equations.

UNIT-IV 12 hrs.

Fourier Transforms-I :
Definition of Fourier Transform – Fourier's in Transform – Fourier cosine Transform – Linear Property of Fourier Transform – Change of Scale Property for Fourier Transform – sine Transform and cosine transform shifting property – modulation theorem.

UNIT-V 12 hrs.

Fourier Transform-II :
Convolution Definition – Convolution Theorem for Fourier transform – parseval's Indentify – Relationship between Fourier and Laplace transforms – problems related to Integral Equations.
Finte Fourier Transforms : -
Finte Fourier Sine Transform – Finte Fourier Cosine Transform – Inversion formula for sine and cosine Transforms only statement and related problems.

Prescribed Book :- Integral Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut
Reference Books :-
1. A Course of Mathematical Analysis by Shanthi Narayana and P.K. Mittal, Published by S. Chand and Company pvt. Ltd., New Delhi.
2. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Company Pvt. Ltd., New Delhi.
3. Lapalce and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan, Meerut.
4. Integral Transforms by M.D. Raising hania, - H.C. Saxsena and H.K. Dass Published by S.Chand and Company pvt. Ltd., New Delhi.
Suggested Activities:
Seminar/ Quiz/ Assignments

III BSC VI SEMESTER MATHEMATICS PAPER-VIII C2 SYLLABUS 2020-21
TITLE: SPECIAL FUNCTIONS (Cluster Elective)

UNIT-I

Hermite Polynomial: Hermite Differential Equations, Solution of Hermite Equation, Hermite's Polynomials, Generating function, Other forms for Hermite Polynomial, To find first few Hermite Polynomials, Orthogonal properties of Hermite Polynomials, Recurrence formulae for Hermite Polynomials. Chapter: 6.1 to 6.8

UNIT-II

Laguerre Polynomials-I: Laguerre's Differential equation, Solution of Laguerre's equation, Laguerre Polynomials, Generating function, Other forms for the Laguerre Poynomials, To find first few Laguerre Polynomials,Orthogonal property of the Laguerre Polynomials, Recurrence formula for Laguerre Polynomials, Associated Laguerre Equation.

Chapter: 7.1 to 7.9

UNIT-III

Legendre's Equation: Definition, Solution of Legendre's Equation, Definition of $P_n(x)$and $Q_n(x)$,General solution of Legendre's Equation, To show that $P_n(x)$ is the coefficient of h^n in the expansion of $(1-2xh+h^2)^{\frac{-1}{2}}$, Orthogonal properties of Legendre's Equation, Recurrence formula, Rodrigues formula.

Chapter: 2.1 to 2.5 and 2.7,2.8,2.12

UNIT-IV

Bessel's Equation: Definition, Solution of Bessel's General Differential Equations, General solution of Bessel's Equation, Integration of Bessel's equation in series for n=0,Definition of $J_n(x)$, Recurrence formulae for $J_n(x)$,Generating function for $J_n(x)$. Chapter: 5.1 to 5.7

UNIT-V

Beta and Gamma functions: Euler's Integrals-Beta and Gamma Functions, Elementary properties of Gamma Functions, Transformation of Gamma Functions,Another form of Beta Function, Relation between Beta and Gamma Functions,Other Transformations.

Chapter: 2.9 to 2.15

Prescribed text book: Special Functions by J.N.Sharma and Dr.R.K.Gupta.

Reference Books :-

1.Special Functions- E.D-RamValle(2006)
2.Special Functions by N.Saran(2002).

Note: No Question will be given on finding the general solution of Equations from Units-I,II,III & IV.

Suggested Activities: Seminar/ Quiz/ Assignments.

III BSC VI SEMESTER MATHEMATICS PAPER-VIII C3 SYLLABUS 2020-21
TITLE: MATRIX THEORY (Self Study course)

UNIT-I

Basic Concepts of Matrices: Basic concepts, Matrix definition, Square matrix, Unit matrix, Null matrix, Equality of two matrices, Addition of matrices, Multiplication of a matrix by a scalar, Multiplication of two matrices(Chapter: 1.1 to 1.9)
Determinants: Determinants of order2,Determinants of order 3,Minors and cofactors(Chapter: 2.1 to 2.3)
Inverse of a matrix: Adjoint of a square matrix, Inverse or Reciprocal of a matrix, Singular and non-singular matrices. (Chapter: 3.1 to 3.3)

UNIT-II

Rank of a Matrix: Definition, sub matrix , Minor of a matrix, Rank of matrix, Echelon form of a matrix, Elementary transformations of a matrix, Elementary matrices, Invariance of rank under elementary transformations, Reduction to normal form, Equivalence of matrices.
(Theorems without proofs) (Chapter: 4.1 to 4.10)

UNIT-III

Linear Equations: Homogenous linear equations, Fundamental set of solutions, System of linear non-homogenous equations, Conditions for consistency.
(Chapeter: 6)

UNIT-IV

Eigen values and Eigen vectors or characteristic roots and characteristic vectors: Matrix polynomials, Definition, characteristic roots and characteristic polynomial and characteristic equation of a matrix, Cayley-Hamilton theorem.
(Chapter: 7)

UNIT-V

Orthogonal vectors: Inner product of two vectors, orthogonal vectors, unitary and orthogonal matrices, orthogonal group . (Chapeter: 9)

Prescribed Book:
MATRICES- BY A.R.VASISTA, KRISHNA PRAKASHAN MEDIA (P) Ltd.

Reference Books :-

1.Matrices by Shanti Narayana, published by S.Chand Publications.
2.Richard Bronson Theory & Problems of Matrix Operations –TATA McGrewHill(1989)
3.R.D.Sharma & Umash Kumar-Basic Applied Mathematics for Physical Sciences,Pearson Education India(P),Ltd.
4.S.H.Fried Berg, A.L.Insel & L.E.Spence, Linear Algebra, Prentice Hall of India(P) Ltd.

Suggested Activities: Seminar/ Quiz/ Assignments.

II BSC III SEMESTER MATHEMATICS CERTIFICATE COURSE SYLLABUS 2020-21
TITLE: BASIC MATHEMATICS

45 HRS.

UNIT-I

Sets: Definition-Types of Sets –Algebra of sets and properties.

UNIT-II

Functions: Algebra Functions-Domain-Range-Composite Functions.

UNIT-III

Relations: Relations- inverse Relations- types of relations-equivalence relation-Partial order-Equivalence relation –partial order- Equivalence class-quotient set-Partition of a set.

UNIT-IV

Theory of Indices:
Identity and problems

UNIT-V

Matrices:
Definition-types –algebra of Matrices-adjoint and Inverse –Determinant of Matrices and Cramer's Rule.

II BSC IV SEMESTER MATHEMATICS FOUNDATION COURSE SYLLABUS 2020-21
TITLE: ANALYTICAL SKILLS

30 HRS.

UNIT-I

Data Analysis:-The data given in a Table, Graph, Bar Diagram, Pie Chart, Venn diagram or a passage is to be analyzed and the questions pertaining to the data are to be answered.

UNIT-II

Sequence and Series:- Analogies of numbers and alphabets completion of blank spaces following the pattern in A:b::C: d relationship odd thing out; Missing number in a sequence or a series.

UNIT-III

Arithmetic ability:-Algebraic operations BODMAS, Fractions, Divisibility rules, LCM&GCD (HCF).

Date, Time and Arrangement Problems: Calendar Problems, Clock Problems, Blood Relationship.

UNIT-IV

Quantitative aptitude:- Averages, Ration and proportion, Problems on ages, Time-distance – speed.

UNIT-V

Business computations:- Percentages, Profit &loss, Partnership, simple compound interest.

Prescribed Book: Quantitative Aptitude for Competitive Examination by R S Agrawal, S.Chand publications.

Reference Books:

1. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
2. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogitaprakasan, Kic X, Kiran Prakasan publishers
3. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.
4. Old question Paper of the exams conducted by (Wipro, TCS, Infosys, Etc) at their recruitment process, source-Internet.

III BSC V SEMESTER CERTIFICATE COURSE SYLLABUS 2020-21
TITLE: LIFE SKILLS

- Value oriented life 3hr
- Goal setting 2 hr
- Decision making 1 hr
- Managerial abilities 3hr
  (With regard to time, change, age etc)
- Marriage counseling 4hr
  (Pre –marital, post marital)
- Conflict resolving 2hr
- Awareness about Gynic problems 3hr
- General counseling 3hr
- Relationships 4hr
  (Personal, interpersonal, family and society)
- Legal awareness 2hr

Note:
At the end of the Semester, Certificate will be issued basing on the percentage of Attendance.

III BSC VI SEMESTER MATHEMATICS CERTIFICATE COURSE SYLLABUS

2020-21

TITLE: REASONING & LOGICAL THINKING .

(Total 30 Hrs)

UNIT-I

Analogy – kinds of Relationships

1. Completing the analogous pair
2. Simple analogy
3. Choosing the analogous pair
4. Double analogy
5. Choosing a similar word
6. Detecting analogies

UNIT-II

Series Completion

1. Number Series
   - Elementary idea of progressions
   - Finding the wrong term in the given series
2. Alphabet series
3. Letter series

UNIT-III

Mathematical Operations

1. Problem solving by substitution
2. Interchange of signs and numbers
3. Deriving the appropriate conclusions

UNIT-IV

Logical Sequence of Words

1. Arranging the group of words in a logical order.

Prescribed book:

A modern approach to verbal & non verbal Reasoning by R.S.Aggarwal.

Ch.S.D.St.Theresa's College for Women (A), Eluru

CBCS B.Sc Structure of Actuarial Science W.E.F (2020-2021)

Year	Semester	Paper	Subject	Hours	Credits	I.A	S.E	Total
I	I	I	Basics of Financial Mathematics	6	5	50	50	100
	II	II	Principles of Economics	6	5	50	50	100
2	III	III	Financial Accounting	6	5	50	50	100
	IV	IV	Survival models	6	5	50	50	100
3	V	V	Life contingencies -1	6	5	50	50	100
		VI	Life contingencies -2	6	5	50	50	100
	VI	VII	**Electives (Any one)** VII(A)- Life contingencies -3 VII(B)- Operations research	6	5	50	50	100
		VIII	**Cluster Electives** VIII(A) -1- Business Communication VIII(A)-2 Bio Statistics VIII(A)-3 Project work / Self Study (or) VIII(B)-1- Business Communication VIII(B)-2- Actuarial Statistics VIII(B)-3- Project work/Self Study	6 hrs per each paper	5 per each paper	50 per each paper	50 per each paper	100 per each paper

CH.S.D.St.Theresa's Autonomous College for women

I B.Sc, Actuarial Science/First Semester (w.e.f. 2020-21)

I B.SC, (MSAS) - PAPER - I

BASICS OF FINANCIAL MATHEMATICS

Total Hrs. of Teaching-Learning:60 @ 4 h/Week **Total Credits:05**

Unit-I Hours:12

Simple and Compound interest, Compound interest tables, Present Value, Normal and Effective rates of interest, Effective rate corresponding to a nominal rate and Vice-Versa, Discount and Discounted value, Varying rates of interest, Equation of Value, Equated time of payment.

Unit-II Hours:12

Repayment of loan by uniform installments when the frequency of installments is the same as that with which interest is convertible, Repayment of loan by uniform installments consisting of both interest and principle repayment, when the frequency of installment is different from that with which interest is convertible, Redemption of Loans by a sinking fund, Lender's sinking fund, Further consideration on redemption of loan, Capital redemption policies, Office premiums, Surrender Value.

Unit-III Hours:12

Nominal and Effective rates of Discount, Average interest yield on the life fund, Money weighted rate of return, Time weighted rate of return and linked internal rate of return,.

Unit-IV Hours:12

Column l_x , Column d_x , Column q_x , Column p_x , The probabilities of survival and death, Stationary population, L_x , T_x , Curtate expectation of life, Complete expectation of life, Central death rate M_x , Selection and select rates, Ultimate table, Aggregate table. Construction of Mortality tables, Stages involved in construction of mortality table, The data to be used, Period of investigation, Unit of investigation, The method of investigation, Census method, application of census method to life office data, Determination of exposed to risk and deaths.

Unit-V Hours:12

Life Assurance premiums-General Considerations, Assurance benefits-Pure Endowment assurance, Endowment assurance, Temporary Assurance or Team assurance, Whole life Assurance, Double Endowment assurance , Increasing Temporary Assurance, Increasing Whole life Assurance, Commutation functions D_x , C_x , M_x , and R_x , Expressions for present values of assurance benefits in terms of Commutation functions, Fixed term (Marriage) Endowment, Educational annuity plan.

Suggested Readings:

1) An Introduction to Mathematics of finance by J.J.McCUTCHEON and W.F.SCOTT
2) ActurialMathematicas by Bowers Gerber Hickman Jpmes Nesbitt

CH.S.D.St.Theresa's Autonomous College for women

I B.Sc, Actuarial Science/Second Semester PAPER II

Course: Principles Of Economics (for ACTUARIAL SCIENCE)

Total Hrs. of Teaching-Learning:60 @ 4 h/Week Total Credits:03

MODULE I

I. INTRODUCTION TO ECONOMICS 10 hours

Nature and scope of economics – Methodology in economics — Concepts of Demand and Supply – Elasticity of demand – price, income, cross.

II. CONSUMER BEHAVIOUR: 12 hours

Cardinal and Ordinal approaches – Law of Diminishing Marginal utility – Indifference curve – Consumer's equilibrium– Consumer surplus.

. III. FEATURES OF VARIOUSMARKETS 10 hours

Market forms – Perfect and Imperfect Markets –Features of various markets – Monopoly, Monopolistic Competition, Oligopoly – Notion of Controlled and Administered prices.

MODULE.II

IV. NATIONAL INCOME AND SOCIAL ACCOUNTS 12 hours

National income and social accounts – concept and measurement of national income – Introduction to Macro economic policy and Money and monetary institutions…. RBI, Commercial banks – Concept of Insurance, Stock exchanges, SEBI, IRDA.

V. **TRADE CYCLES 09hours**

Nature, characteristics and phases of Trade cycles – Control of Trade Cycles.

References:

1. CT-7 study material of Institute of Actuaries of India
2. Ackley (1976) Micro Economics – Theory and policy, Macmilan publishing company, Newyork.
3. Gupta S.B(1994), Monetary Economics, S.Chand& Co., New Delhi.4. Heijdra B.J. and F.V.Ploeg (2001) Foundations of Modern Economics, Oxford university Press, Oxford.

II B.Sc, Actuarial Science/Third Semester
Paper III Course: FINANCIAL ACCOUNTING
Total Hrs. of Teaching-Learning:60 @ 4 h/Week Total Credits:03

Objectives:

- To make the students to acquire the conceptual knowledge of accounting.
- To develop the skills of recording financial transactions and preparation of reports using computers.
- To equip the students with the knowledge of accounting process and preparation of final accounts.

Learning Outcome: Demonstrate their knowledge

- By the end of this course, students will be able to Demonstrate their knowledge by preparing the books like journals, ledgers.
- By the end of this course, students will have the skill to prepare the ratio analysis.
- By the end of this course students have better understanding about the preparation of final accounts of an organisation.

MODULE I : ACCOUNTING CONCEPTS

Need for Accounting- definition features, objectives, functions systems and bases and scope of accounting - Book keeping and Accounting - Branches of Accounting - Advantages and limitations – basic terminology used - Accounting concepts and conventions.

a.Accounting process - Accounting cycle - Accounting equation – classification of accounts – rules of double entry book keeping – identification of financial transaction – journalizing – posting to ledgers, balancing of ledger accounts – computerized accounting. Meaning and features - creating of an organization – types of vouchers.

a.Sub division of journal-preparation of subsidiary books including different types of cashbooks – simple cash book, cashbook with cash and discount columns, cashbook with cash, discount and bank columns, cashbook with cash and bank columns and petty cash book.

Self Study: Grouping of accounts – voucher entry – editing and deleting of vouchers, Preparation of sales register, purchase register, journal proper, debit note register, credit note register, and different cash books including interest and discount transactions using computers.

Assignment : creation of accounts – creation of inventory – creation of stock categories, units of measurement – stock items – entering of financial transactions — voucher numbering – customization of vouchers.

MODULE II :FINAL ACCOUNTS

a. Trail Balance meaning, objectives, methods of preparation – Final Accounts meaning, features, uses and preparation of manufacturing, trading account, profit & Loss Account and balance sheet – adjusting and closing entries.

b. Assignment :Preparation of Trial Balance Sheet and Final Accounts

MODULE III : MANGEMENT ACCOUNTING CONCEPTS

a. Funds flow and cash flow statements uses and limitations–concept of cash construction of cash flow statement as per accounting standard 3

b. meaning of ratio analysis– classification of ratio analysis–computation and interretation of different accounting ratios– liquidity, profitability turnover ratio and solvency ratios

Assignment preparation of funds flow statement and cash flow statements.

MODULE IV : LIFE INSURANCE CONCEPTS AND FINANCIAL DERIVATIVES

a. life insurance companies–preparation of revenue accounts profit and loss account balance sheet and valuation of balance sheet.

Assignment: preparation of insurance claims.

Suggested Readings:

Principles and Practice of Accounting R.L. Gupta & V.K. Gupta Sulthan Chand &sons Accountancy – I, S.P. Jain & K.L Narang ,Kalyani Publishers
Accountancy – I, Tulasian,TataMcgraw Hill Co Financial Accounting –
Dr.V.K.Goyal , Excel Books
Introduction to Accountancy, T.S.Grewal ,S.Chand and CO Accountancy – I, Haneef and Mukherjee, tataMcgraw Hill co Advanced Accountancy – Arulanandam, Himalaya publishers
Advanced Accountancy-I, S.N.Maheshwari&V.L.Maheswari, Vikash Publishing co. Financial Accounting, Ashok Banarjee, Excel
Financial Accounting, Warren, Cengage

II B.Sc, Actuarial Science/Fourth Semester

PAPER IV Course: Survival Models

Total Hrs. of Teaching-Learning:60 @ 4 h/Week Total Credits:03

Principles of modeling: Need, benefits and limitations of models. **(2L)**

Unit I:

Concepts of Survival Models **(10L)**

The distribution and density functions of the random future lifetime, the survival function, the force of mortality or hazard rate and derive relationships between them, Laws of mortality like Gompertz and Makeham, the distribution and density functions of the curtate future lifetime random variable.

Unit II:

Estimating the future lifetime distribution **(10L)**

Truncation, Right censoring, Left or interval censoring, Likelihood construction for censored and truncated data, Kaplan-Meier model, Nelson Aalen model, Cox proportional hazard model, Breslow's approximations to the partial likelihood estimator.

Unit III:

Binomial and Poisson Model **(10L)**

Maximum likelihood estimator of transitions intensities in Binomial and Poisson model and their mean-variances, advantages and disadvantages of multiple state models and the binomial models, including consistency, efficiency, simplicity of the actuarial estimators and their distributions, application to practical observations and generality.

Unit IV:

Graduation **(10L)**

Initial and central exposed to risks, graduation, purpose and methods of graduation, testing goodness of fit and testing smoothness of a set of graduated estimates, statistical test for comparing a set of crude estimates and a standard table or a set of crude estimates and a set of graduated estimates, effect of duplicate policies on estimates.

References

1.UK Institute of Actuaries core reading for subject CT4-Models.
2.Klein J.P. and Moeschberger, M.L.(2003) Survival Analysis: Techniques for Censored and Truncated Data 2nd Edition, Springer Verlag, New York,.
3.Klugman, S.A.(June 2003), "Estimation, Evaluation, and Selection of Actuarial Models".
4.Dick London (1997), Survival Models and their Estimation, second edition, ACTEX publications.
5.Cox, D.R. and Oakes, D.(1984) Analysis of Survival Data, Chapman and Hall, NewYork.

III B.Sc Actuarial Science/Fifth Semester

Paper V Course: Life Contingencies-I

Total Hrs. of Teaching-Learning:45 @ 3 h/Week

Unit I:

Introduction to Life Insurance. (2L)

Meaning and definition of life insurance features, Types of life insurance, principles of life insurance, Terminology in insurance premiums.

Unit II:

Survival Distributions and Life Tables: (13L)

Probability for the Age-at-Death, the survival function, time- until-death for a person aged *x*, curtate-future-lifetime, force of mortality.

Life tables, relation of life table functions to the survival function, life table example. The deterministic survivorship group, other life table functions, assumptions for fractional ages, some analytical laws of mortality, some analytical laws of mortality, select and ultimate tables.

Unit III:

Life Insurance: (15L)

Insurances payable at the moment of death: level benefit insurance, endowment insurance, deferred insurance, varying benefit insurance.

Insurances payable at the end of year of death, relationships between Insurances payable at the moment of death and the end of year of death, recursion equation, commutation functions.

Unit IV:

Life Annuities: (15L)

Single payment contingent on survival, continuous life annuities, discrete life Annuities, life annuities with mthly payments, commutation function formulas for annuities with level payments, varying annuities, recursion equations, complete Annuities-immediate and apportionable annuities-due.

Text Books

1.Bowers, N. L., Gerber, H.U., Hickman, J.C., Jones, D.A., Nesbitt, C.L.(1986), Actuarial Mathematics, The society of actuaries.

Books for References

1. David, C. M., Dickson, Mary R. Hardy and Howard, R. waters.(2009). Actuarial Mathematics for Life Contingent Risks. Cambridge University Press.
2. Deshmukh, S.R. (2009). Actuarial Statistics, Universities Press India.

III B.Sc, Actuarial Science/Sixth Semester

Paper VI Course: Life Contingencies-II

Total Hrs. of Teaching-Learning:60 @ 4 h/Week

Unit I:

Net premiums or Benefit premiums **(12L)**

The random future loss under an assurance or annuity contract, state the principle of equivalence, Notations and formulae of net premium for common life insurance contracts, Fully Discrete Premiums, True m-thly payment premium, Commutation functions, increasing and decreasing Benefit premiums, Profits contract, Types of bonus, Calculating net premiums for with-profit contracts.

Unit II:

Benefit Reserves **(9L)**

Prospective and Retrospective Reserves , Net future random loss for reserves, Conditions for equality of prospective and retrospective Reserves, Fully Continuous Benefit Reserves, other formulas for fully Continuous Benefit Reserves, Fully Discrete Benefit Reserves, Benefit Reserves on a Semi-continuous basis, Benefit Reserves based on True m-thly Benefit premiums, Net Premium Reserves, Thiele's Differential Equation, Death strain at risk(DSAR), Expected death strain(EDS), Actual death strain (ADS), Mortality profit, Mortality profit on a portfolio of policies, Calculating net Reserves for with-profit contracts.

Unit III:

Analysis of Benefit Reserves **(6L)**

Benefit Reserves for General Insurances, Recursion Relations for Fully Discrete Benefit Reserves, Benefit Reserves at Fractional Durations.

Unit IV:

Insurance Models Including Expenses **(8L)**

List the type of expenses incurred in writing a life insurance contract, Describe the influence of inflation on the expenses, Define the gross future loss random variable for the benefits and annuities using equivalence principle.

Unit V:

Multiple Life Functions **(10L)**

Joint distribution of Future Lifetimes, The Joint-Life Status, The Last-Survivor Status, More Probabilities and Expectations, Dependent Lifetime Models: Common Shock, Insurance and Annuity Benefits: Survival Status, Special Two-Life Annuities, Reversionary Annuities, Simple Contingent Functions.

Text Books

1.Bowers, N. L., Gerber, H.U., Hickman, J.C., Jones, D.A., Nesbitt, C.L.(1986), Actuarial Mathematics, The society of actuaries.

References

1. UK Institute of Actuaries core reading for subject CT5-Contingences.
2. Robin Cunningham, Thomas N. Herzog, Richard L. Models for Quantifying Risk, 4th Edition, ACTEX Publications, 2011.
3. Dickson, David C. M., Hardy, Mary R. and Waters, Howard R., Actuarial Mathematics for life contingent risks, International series on actuarial science, Cambridge 2009.4. Deshmukh S. R., An Introduction to Actuarial Statistics, University Press, 2009

III B.Sc, Actuarial Science/Sixth Semester

Paper VII (A)Course: Life Contingencies-III

Total Hrs. of Teaching-Learning:60 @ 4 h/Week

Unit I:

Multiple Decrement Model (12L)

Two random variables, Random Survivorship Group, Deterministic Survivorship Group, Associated single Decrement tables: Basic Relationship, Uniform Distribution Assumption for multiple decrements, Construction of Multiple decrement table, Relationship between single and multiple decrement tables.

Unit II:

Application of multiple decrement theory (12L)

Actuarial present value and their numerical evaluation, benefit premium and reserves, competing risks, multiple state modelling, multiple state Markov model, Kolmogorov forward equations, multiple decrement tables.

Unit III:

Profit testing (11L)

Discounted emerging costs, unit-linked contract, Profit test annual premium contracts, the profit vector, the profit signature, the net present value and the profit margin, determining premiums using profit test, Profit criterion, determining reserves using profit testing, Zeroising negative cashflows, Equity-linked insurance, deterministic profit testing for equity linked insurance, Stochastic profit testing, Stochastic pricing, Stochastic reserving.

Unit IV:

Pension funds (10L)

Multiple decrement service table for pensions calculations, updating a service table, the salary scale function, setting the DC contribution, the service table, funding plans, valuation of benefits: Final salary plans, Career average earnings plans.

Text Books

1.Bowers, N. L., Gerber, H.U., Hickman, J.C., Jones, D.A., Nesbitt, C.L.(1986), Actuarial Mathematics, The society of actuaries.

References

1.UK Institute of Actuaries core reading for subject CT5-Contingencies.
2.Robin Cunningham, Thomas N. Herzog, Richard L. Models for Quantifying Risk, 4th Edition, ACTEX Publications.
3.Dickson, David C.M., Hardy, Mary R. and Waters, Howard R., Actuarial Mathematics for life contingent risks, International series on actuarial science, Cambridge 2009.
4.Deshmukh, S. R., An introduction to Actuarial Statistics, University Press

III BSC Actuarial Science VI Semester Paper-VII(B): Operations Research

UNIT-I

Linear Programming: Meaning and scope of OR. Convex sets and their properties. Definition of general LPP, formulation of LPP, solution of LPP by graphical method, fundamental theorem of LPP, simplex algorithm. Concept of artificial variables. BIG-M/Penalty method and two phase simplex method. Concept of degeneracy and resolving it.

UNIT-II

Duality: Concept of duality, duality as LPP. Dual primal relationship. Statement of fundamental theorem of duality, Dual simplex method.

UNIT-III

Transportation Problems: Definition of transportation problem, TPP as a special case of LPP, feasible solutions by North-West and Matrix minimum methods and VAM. Optimal solution through MODI tableau and stepping stone method for balanced and unbalanced transportation problem. Degeneracy in TP and resolving its.

UNIT-IV

Transshipment problem, formulation and description of Assignment problem and its variations. Assignment problem as special case of TP and LPP, unbalanced assignment problem, optimal solution using Hungarian method.

UNIT-V

Traveling salesman problem, Problem of Sequencing Optimal sequence of N jobs on two and three machines without passing to find processing times of jobs, total elapsed time and idle times of machines.

III B.Sc Actuarial Science/Sixth Semester

Paper VIII(A)-1Course: Business Communication

Total Hrs. of Teaching-Learning:45 @ 3 h/Week

OBJECTIVES :

- To understand the nature and scope of communication
- To provide the knowledge of Business communication
- To understand the non-verbal –verbal communication
- To know the student to effective communication.

Learning Autcomes:

- by the end of this course students can know the difference of verbal and no-verbal communication
- By the end of this course tips for effective use of communication.
- By the end of this course students can known the formal and informal communication.
- By the end of this course students have the knowledge of Barriers to effective communication.

MODULE - I: NATURE AND OF COMMUNICATION

Nature and scope of communication – Introduction- Functions of Communication-Role of a Manager-Communication-Role of a Manager Communication Basics- Communication Networks-Miscommunication-Barriers to Effective Communication.

Assignment: Role of Manager-Function of communication

MODULE – II: TIPS FOR EFFECTIVE INTERNAL COMMUNICATION

Tips for effective internal communication – Internal Communication (Beyond the organizational Hierarchy) - Effective in managerial communication --Strategies for improving organizational communication

QUIZ : Current Affairs.

Assignment : Managerial communication – improving organizational communication.

MODULE-III : NON- VERBAL COMMUNICATION

INTRODUCTION –Forms of non-verbal communication-interpreting non – verbal massages – Tips for effective use of non –verbal communication-verbal communication.

Assignment : Non-verbal communication –interpreting non-verbal massages

MODULE – IV : ORAL PRESENTATION

Cross cultural communication-elements of cultural – principals of effective business writing – purpose of writing-writing style-role of communication-business correspondence principals of effective business writing.

Suggested books :

- Anjaneesath Referil – Business communication
- Sankirtan Bodhi – Business communication
- Bharma Adhikar – Business communication

III B.Sc Actuarial Science/Sixth Semester

Paper VIII(A)-2Course: Bio Statistics Total Hrs. of Teaching-Learning:45 @ 3 h/Week

UNIT I Introduction to biostatistics and applications of biostatistics in pharmaceutical and medical research. Tests of significance: Testing hypotheses- principle and applications of Z, test and F tests. 8 hours

UNIT II Analysis of Variance: 1-way, 2-way and 3-way classification. 8 hours

UNIT III Non-parametric tests: Chi square test, sign test, Wilcoxon signed rank test, Wilcoxon rank sum test, Kruskal Wallis test, run test and median tests. 8 hours

UNIT IV Design of Experiments: Principles of randomization, replication and local control; CRD, RBD, LSD - their applications and analysis of data. 8 hours

UNIT V Factorial Experiments-Principles and applications; Use of software such as design expert and origin in the design of experiment 8 hours

UNIT VI Probit analysis-Dose-effect relationships, calculation of LD50, ED50 8 hours

UNIT VII Regression and correlation: Method of least squares, Correlation Coefficient, rank correlation and multiple regression. 8 hours

UNIT VIII Optimization Techniques: Basic principles and advantages of optimization, Optimization using factorial design, the simplex lattice and sequential optimization. 8 hours 2

Reference Books

1. Statistics (Theory, Methods & Application) by D.C. Sancheti and V.K. Kapoor ; Sultan Chand & Sons; Educational Publishers, New Delhi
2. Comprehensive Statistical Methods by P.N. Arora, Sumeeth Arora and S.Arora;S.Chand Publication
3. Biostatistics- An Introductory Text by Avram Goldstein; The Macmillan Company, New York
4. Pharmaceutical Statistics Practical and Clinical Applications by Stanford Bolton, Charles Bon; Marcel Dekker Inc.

III B.Sc Actuarial Science/Sixth Semester

Paper VIII(B)-1Course: Business Communication

Total Hrs. of Teaching-Learning:45 @ 3 h/Week

OBJECTIVES :

- To understand the nature and scope of communication
- To provide the knowledge of Business communication
- To understand the non-verbal –verbal communication
- To know the student to effective communication.

Learning Autcomes:

- by the end of this course students can know the difference of verbal and no-verbal communication
- By the end of this course tips for effective use of communication.
- By the end of this course students can known the formal and informal communication.
- By the end of this course students have the knowledge of Barriers to effective communication.

MODULE - I: NATURE AND OF COMMUNICATION

Nature and scope of communication – Introduction- Functions of Communication-Role of a Manager-Communication-Role of a Manager Communication Basics- Communication Networks-Miscommunication-Barriers to Effective Communication.

Assignment: Role of Manager-Function of communication

MODULE – II: TIPS FOR EFFECTIVE INTERNAL COMMUNICATION

Tips for effective internal communication – Internal Communication (Beyond the organizational Hierarchy) - Effective in managerial communication --Strategies for improving organizational communication

QUIZ : Current Affairs.

Assignment : Managerial communication – improving organizational communication.

MODULE-III : NON- VERBAL COMMUNICATION

INTRODUCTION –Forms of non-verbal communication-interpreting non – verbal massages – Tips for effective use of non –verbal communication-verbal communication.

Assignment : Non-verbal communication –interpreting non-verbal massages

MODULE – IV : ORAL PRESENTATION

Cross cultural communication-elements of cultural – principals of effective business writing – purpose of writing-writing style-role of communication-business correspondence principals of effective business writing.

Suggested books :

- Anjaneesath Referil – Business communication
- Sankirtan Bodhi – Business communication
- Bharma Adhikar – Business communication

III B.Sc Actuarial Science/Sixth Semester

Paper VIII(B)-2Course: Acturial Statistics

Total Hrs. of Teaching-Learning:45 @ 3 h/Week

UNIT I

Introductory Statistics and Insurance Applications: Discrete, continuous and mixed probability distributions. Insurance applications, sum of random variables. Utility theory: Utility functions, expected utility criterion, types of utility function, insurance and utility theory.

UNIT II

Principles of Premium Calculation: Properties of premium principles, examples of premium principles. Individual risk models: models for individual claims, the sum of independent claims, approximations and their applications.

UNIT III

Survival Distribution and Life Tables: Uncertainty of age at death, survival function, time-until-death for a person, curate future lifetime, force of mortality, life tables with examples, deterministic survivorship group, life table characteristics, assumptions for fractional age, some analytical laws of mortality.

UNIT IV

Life Insurance: Models for insurance payable at the moment of death, insurance payable at the end of the year of death and their relationships. Life annuities: continuous life annuities, discrete life annuities, life annuities with periodic payments. Premiums: continuous and discrete premiums.

SUGGESTED READING:

1. Dickson, C. M. D. (2005): Insurance Risk And Ruin (International Series On Actuarial Science), Cambridge University Press.
2. Bowers, N. L., Gerber, H. U., Hickman, J. C., Jones, D. A. And Nesbitt, C. J. (1997): Actuarial Mathematics, Society Of Actuaries, Itasca, Illinois, U.S.A.

DEPARTMENT OF STATISTICS

The meeting of the Board of Studies in Statistics was held on Thursday, 05.03.2020 at10.30 a.m. in Room No.7.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Mrs. Dr.N.Madhavi, Govt. Degree College, Rajahmundry

External experts:

3. Mr.K.Ashok, P.R.Government College, Kakinada

Faculty:

4. Dr.K.L.Saraswathi Devi
5. Dr.Mrs.D.Madhumalathi
6. Dr.I.Annapurna
7. Mrs.G.Kusuma
8. Ms. R.Sravani

Students:

9. P.Priyanka, III B.Sc. M.St.Comp.
10. A.Sravani, II B.Sc. M.St.Comp.

Resolutions:

Statistics:

The Syllabi of all the Semesters I,II,III,IV,V,VI, Semester wise thoroughly discussed and it is resolved that to change the title of III Semester and IV Semester as the Board felt it is needed. The changed titles are Statistical Methods and Theory of Estimation for Paper III and Testing of Hypothesis for Paper IV. The Board felt to follow the same for other Semesters.

Actuarial Science:

For Actuarial Science Students it was suggested that the students can do internship after finishing the IV Semester of duration 15 to 45 days

Ch.S.D.St.Theresa's College for Women (A), Eluru.
CBCS B.A/B.Sc. Statistics course structure W.E.F (2019-20)

Year	Semester	Paper	Subject	Hours	Credits	I.A	S.E	Total
I	I	I	Descriptive statistics & Probability	6	5	50	50	100
	II	II	Mathematical Expectations & Probability Distributions	6	5	50	50	100
II	III	III	Statistical Methods & Theory of Estimation	6	5	50	50	100
	IV	IV	Testing of Hypothesis	6	5	50	50	100
III	V	V	Sampling & ANOVA	6	5	50	50	100
		VI	Operations research	6	5	50	50	100
	VI	VII	A) Applied Statistics using R-Programming (OR) B) Demography & vital Statistics	6	5	50	50	100
		VIII	A1: Quality & Reliability A2: Designs of Experiments A3: Project work / Self study/ MOOCS (OR) B1: Forecasting methods B2: Actuarial Statistics B3: Project work / Self study/ MOOCS	6	5	50	50	100

I BSC I SEMESTER STATISTICS PAPER-I SYLLABUS 2020-21
DESCRIPTIVE STATISTICS & PROBABILITY

UNIT-I

Concept of primary and secondary data. Methods of collection & editing of primary data. Designing a questionnaire and schedule. Measures of central tendency - Mean, Median, Mode, Geometric mean and Harmonic mean.

UNIT-II

Measures of dispersion: range, quartile deviation mean deviation and standard deviation. Central and non-central moments and their interrelationship. Sheppard's corrections from moments. Skewness based on quartiles and moments and kurtosis based on moments.

UNIT-III

Basic concepts of probability –random experiments, trail, outcome, sample space, mutually exclusive and exhaustive events and, equally likely and favorable outcomes. Mathematical, statistical and axiomatic definitions of probability. Conditional probability and independence of events.

UNIT-IV

Addition and multiplication theorems of probability for 2 events and for n events, Boole's inequality and Baye's theorems.

UNIT-V

Definition of random variable, discrete and continuous random variables, functions of random variable, probability mass function and probability density function, Distribution function and its properties.

Bivariate random variable - meaning, joint, marginal conditional distributions. Independence of random variables.

Text Books:

1. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.
2. 2 BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr M.Jaganmohan Rao,Dr N.Srinivasa Rao, Dr P.Tirupathi Rao, Smt.D.Vijayalakshmi.
3. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI

I BSC II SEMESTER STATISTICS PAPER-II SYLLABUS 2020-21
TITLE: MATHEMATICAL EXPECTATIONS & PROBABILITY DISTRIBUTIONS

UNIT-I

Mathematical Expectations: Mathematical expectation(ME) of a random variable and function of a random variable. moments and covariance using mathematical expectation with examples. Addition and multiplication theorems of expectation. Definition of moment generating function (M.G.F), Cummulant generating function (C.G.F), probability generating function (P.G.F) and C.F statements of their properties. Chebychev's and Cauchy – Schwartz's inequalities.

UNIT-II

Discrete distributions: Binomial and Poisson distributions, their definitions,1^{st} to 4 central moments, M.G.F, C.G.F, P.G.F, C.F , Mean and Variance , Reproductive property wherever exists. Poisson approximation to Binomial.

UNIT-III

Negative Binomial, Geometric and Hyper Geometric distributions – definitions, Mean and Variance, M.G.F, C.G.F, P.G.F, C.F , Reproductive property wherever exists. Binomial approximation to Hyper Geometric, Poisson approximation to Negative binomial distribution.

UNIT-IV

Continuous distributions: Rectangular, Exponential, Gamma, Beta distributions of two kinds. Other Properties such as mean ,variance, M.G.F, C.G.F, C.F , reproductive property wherever exists .

UNIT- V

Normal Distributions : Definition, Importance, properties, M.G.F , reproductive property , Interrelation between Normal and Binomial ,Normal and Poisson distribution. Cachy distribution.

Text Books:

1. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.
2. 2 BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr M.Jaganmohan Rao,Dr N.Srinivasa Rao, Dr P.Tirupathi Rao, Smt.D.Vijayalakshmi.
3. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI

II BSC III SEMESTER STATISTICS PAPER-III SYLLABUS 2020-21
TITLE: STATISTICAL METHODS & THEORY OF ESTIMATION

UNIT-I

Correlation & Regression: Population correlation coefficient and its properties. Bivariate data scattered diagram. Sample correlation coefficient. Computation of correlation coefficient for grouped data. Correlation ratio. Spearman's rank correlation coefficient and its properties, simple linear regression. Correlation verses regression. Properties of regression coefficients. Fitting of quadratic and power curves. Concepts of partial and multiple correlation coefficients (only for three variables).

UNIT-II

Curve Fitting: Principle of least squares, fitting of Straight line, second degree parabola, and Exponential, Power curves by using principle of least squares.

UNIT-III

Theory of Attributes: Analysis of categorical data. Independence and Association and partial association of attributes. Consistency of data, conditions for consistency of two and three attributes cases. Various measures of association- Yule's coefficient of association, coefficient of colligation for two way data and relation between them.

UNIT-IV

Exact Sampling Distribution: Concepts of population, parameter, random sample. Statistic, sampling distribution and standard error. Standard error of sample mean(s) and sample proportion(s). Exact sampling distributions – statement and properties of χ^2, t and F distributions and their interrelationships. Independence of sample mean and variance in random sampling form normal distribution.

UNIT-V

Theory of Estimation: Point estimation of a parameter, concept of bias and mean square error of an estimate. Criteria of good estimator – consistency, unbiasedness, efficiency and sufficient statistics in case of Binomial, Poisson, Normal and Exponential (one parameter only) distributions. Estimation by method of moments, Maximum likelihood (ML), statements of asymptotic properties of MLE. Concept of interval estimation. Confidence intervals of the parameters of normal population by pivot method.

Text Book:

1. Dr. T.C.Ravi Chandra kumar, Dr. R. Sudhakar Reddi, Sri A. Mohan Rao, Sri, S. Srinivasa Rao, Statistics Paper II - Statistical Methods and Inference, Academy.

Books for Reference:

1. V.K.Kapoor and S.C.Gupta, Fundamentals of Mathematical Statistics, Sultan Chand&Sons, New Delhi.
2. Goon AM, Gupta MK, Das Gupta B, Outlines of Statistics, Vol-II, the World Press Pvt.Ltd., Kolakota.
3. Sanjay Arora and Bansi Lal, New Mathematical Statistics Satya Prakashan, New Delhi.
4. Parimal Mukhopadhyay, Mathematical Statistics, New Central Book agency.
5. Levin, Stephan, Krehbiel, Berenson, Statistics for Managers using Microsoft Excel, 4 th edition, Pearson Publication.

II BSC IV SEMESTER STATISTICS PAPER-IV SYLLABUS 2020-21
TITLE: TESTING OF HYPOTHESIS

UNIT-I

Testing of Hypothesis: Concepts of Statistical Hypothesis. Null and alternative hypothesis. Critical region, two types of errors, level of significance and power of a test. One and two tailed tests, test function (non-randomized and randomized). Neymann -Pearson's fundamental lemma for Randomized tests. Example in case of Binomial, Poisson, Exponential and Normal distributions and their powers. Use of central limit theorem in testing.

UNIT-II

Large Sample Theory: Large sample tests and confidence intervals for Mean(s), Proportion(s), Standard deviation(s) and Correlation coefficient(s).

UNIT-III

Small Sample Theory: Tests of significance based on **t** for single mean,equality of two means,and difference of two means(paired t-test),single correlation coefficient and teo correlation coefficients.**F**-test for testing variances.

UNIT-IV

Test of significance based on χ^2 test , χ^2 test for goodness of fit (in case binomial and poisson) and test for independence of attributes. Definition of order statistics and statement of their distributions.

UNIT-V

Non Parametric Tests: Non-parametric test advantages and disadvantages, Comparison with parametric tests. Measurement scale-nominal, ordinal, interval and ratio. One sample runs test, sign test and Wilcoxon-signed rank tests (single and paired samples).two independent sample tests: Median test, Wilcoxon-Mann-Whitney U test, Wald Wolfowitz's runs test.

Text Book:

1. Dr. T.C.Ravi Chandra kumar, Dr. R. Sudhakar Reddi, Sri A. Mohan Rao, Sri, S. Srinivasa Rao, Statistics Paper II - Statistical Methods and Inference, Academy.

Books for Reference:

1. V.K.Kapoor and S.C.Gupta, Fundamentals of Mathematical Statistics, Sultan Chand&Sons, New Delhi.
2. Goon AM, Gupta MK, Das Gupta B, Outlines of Statistics, Vol-II, the World Press Pvt.Ltd., Kolakota.
3. Sanjay Arora and Bansi Lal, New Mathematical Statistics Satya Prakashan, New Delhi.
4. Parimal Mukhopadhyay, Mathematical Statistics, New Central Book agency.
5. Levin, Stephan, Krehbiel, Berenson, Statistics for Managers using Microsoft Excel, 4 th edition, Pearson Publication

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU
III BSC V SEMESTER STATISTICS PAPER-V SYLLABUS 2020-21
TITLE: SAMPLING & ANOVA

UNIT-I

Basic concepts of sampling: Concepts of population, sample, sampling unit, parameter, statistic, sampling errors, sampling distribution, sample fame and standard error, principle steps in sample surveys need for sampling, census versus, sampling and non-sampling error. Sources and treatment of non sampling errors. Advantages and limitations of sampling.

UNIT-II

Types of sampling: subjective, probability and mixed sampling methods. Methods of drawing random samples with and without replacement. Estimates of population mean, total and proportion, their variances and the estimates of variances in the following methods.
SRSWR and SRSWOR**.**

UNIT-III

Stratified random sampling with proportional and optimum allocation**.**

Systematic sampling when N, nk**.**

Comparison of relative efficiencies advantages and disadvantages of above methods of sampling.

UNIT-IV

Analysis of Variance: ANOVA – one way and two way classifications with one observation per cell-concept of Gauss Mark Off linear model, statement of Cochran's theorem. Concept of fixed effect model and random effect model. Expectations of various sums of squares. Mathematical analysis, importance and applications.

UNIT-V

Analysis of Covariance (ANCOVA): Analysis of covariance for a one-way classification with one concomitant variable in C.R.D. Layout and for two-way classification with one concomitant variable in R.B.D.

Text Books:

1.Telugu AcademyBA/BSc III year paper - III Statistics - applied statistics - Telugu academy by prof.K.Srinivasa Rao, Dr D.Giri. Dr A.Anand, Dr V.Papaiah Sastry.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.

Reference Books:

1.Fundamentals of applied statistics : VK Kapoor and SC Gupta.
2.Indian Official statistics - MR Saluja.
3.Anuvarthita Sankyaka Sastram - Telugu Academy.

III BSC V SEMESTER STATISTICS PAPER-VI SYLLABUS 2020-21
TITLE: OPERATIONS RESEARCH

UNIT-I

Linear Programming: Meaning and scope of OR. Convex sets and their properties. Definition of general LPP, formulation of LPP, solution of LPP by graphical method, fundamental theorem of LPP, simplex algorithm. Concept of artificial variables. BIG-M/Penalty method and two phase simplex method. Concept of degeneracy and resolving it.

UNIT-II

Duality: Concept of duality, duality as LPP. Dual primal relationship. Statement of fundamental theorem of duality, Dual simplex method.

UNIT-III

Transportation Problems: Definition of transportation problem, TPP as a special case of LPP, feasible solutions by North-West and Matrix minimum methods and VAM. Optimal solution through MODI tableau and stepping stone method for balanced and unbalanced transportation problem. Degeneracy in TP and resolving its.

UNIT-IV

Transshipment problem, formulation and description of Assignment problem and its variations. Assignment problem as special case of TP and LPP, unbalanced assignment problem, optimal solution using Hungarian method.

UNIT-V

Traveling salesman problem, Problem of Sequencing Optimal sequence of N jobs on two and three machines without passing to find processing times of jobs, total elapsed time and idle times of machines.

Text Books:

1.Kanti swaroop, P.K.Guptha and Man Mohan: Operation Research. Sultan Chand.

2. BA/BSc III Year paper - IV Statistics - quality, reliability and operations Research- Telugu Academy by Dr T.C.Ravichandra Kumar, Dr R.V.S.Prasad, Dr D.Giri, Dr G.S.Devasena.

3.Operation Reach – S.D.Sharma.

List of reference books

1.S.K Sinha: Reliability and life testing. Wiley Eastern.

2.Operations researcHh - Models and methods by Chandrasekar Salimath, Bhupendar Parashar.

3.Operation Research – Taha

III BSC VI SEMESTER STATISTICS PAPER-VII(A) SYLLABUS 2020-21
TITLE: APPLIED STATISTICS USING R -PROGRAMMING

UNIT-I

Time Series: Time series and its components with illustrations, additive, multiplicative and mixed models. Determination of trend by least squares, moving average methods.

UNIT-II

Growth curves and their fitting. Modified exponential. Gompertz and logistic curves. Determination of seasonal indices by ratio to moving average, ratio to trend and link relative's methods.

UNIT-III

Index Numbers: Concept, construction, uses and limitations of simple and weighted index numbers. Laspeyer's, Paasche's and Fisher's index numbers. Criterion of a good index numbers, problems involved in the construction of index numbers. Fisher's index as ideal index number. Fixed and chain base index numbers. Cost of living index numbers and whole sale price index numbers. Base shifting, slicing and deflation of index numbers.

UNIT-IV

Descriptive Statistics in R: Introducing to R, Application of Data Science, R Data Structures, Help functions in R. Lists, Creating Lists, General List Operations, Assessing List Components and Values, Applying Functions to Lists, Recursive Lists, Creating Data Frames, Matrix, Like Operations in Frames, Merging Data Frames, Applying Functions to Data Frames, summary of the data.

UNIT-V

Data Visualization & Analysis with R: Experimental Design, Data Attributes, Data Cleaning, Data Characterization and Analysis. Data Modeling and Mining Techniques, Model Evolution, Visualization, Linear regression, Correlation.

Text Books:

1.Telugu AcademyBA/BSc III year paper - III Statistics - applied statistics - Telugu academy by prof.K.Srinivasa Rao, Dr D.Giri. Dr A.Anand, Dr V.Papaiah Sastry.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.

Reference Books:

1.Fundamentals of applied statistics : VK Kapoor and SC Gupta.
2.Indian Official statistics - MR Saluja.
3.Anuvarthita Sankyaka Sastram - Telugu Academy.

III BSC VI SEMESTER STATISTICS PAPER-VII(B) SYLLABUS 2020-21
TITLE: DEMOGRAPHY & VITAL STATISTICS

UNIT-I

Population Theories: Coverage and content errors in demographic data, use of balancing equations and Chandrasekharan-Deming formula to check completeness of registration data. Adjustment of age data, use of Myer and UN indices, Population composition, dependency ratio.

UNIT-II

Introduction and sources of collecting data on vital statistics, errors in census and registration data. Measurement of population, rate and ratio of vital events. Measurements of Mortality: Crude Death Rate (CDR), Specific Death Rate (SDR), Infant Mortality, Rate (IMR) and Standardized Death Rates.

UNIT-III

Stationary and Stable population, Central Mortality Rates and Force of Mortality. Life(Mortality) Tables: Assumption, description, construction of Life Tables and Uses of Life Tables.

UNIT-IV

Abridged Life Tables; Concept and construction of abridged life tables by Reed-Merrell method, Greville's method and King's Method. Measurements of Fertility: Crude Birth Rate (CBR), General Fertility Rate (GFR), Specific Fertility Rate (SFR) and Total Fertility Rate (TFR).

UNIT-V

Measurement of Population Growth: Crude rates of natural increase, Pearl's Vital Index, Gross Reproduction Rate (GRR) and Net Reproduction Rate (NRR).

Suggested reading:

1. Mukhopadhyay P. (1999): Applied Statistics, Books and Allied (P) Ltd.
2. Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008): Fundamentals of Statistics, Vol. II, 9th Edition, World Press.
3. Biswas, S. (1988): Stochastic Processes in Demography & Application, Wiley Eastern Ltd.
4. Croxton, Fredrick E., Cowden, Dudley J. and Klein, S. (1973): Applied General Statistics, 3rd Edition. Prentice Hall of India Pvt. Ltd.
5. Keyfitz N., Beckman John A.: Demogrphy through Problems S-Verlag New york.

III BSC VI SEMESTER STATISTICS PAPER-VIII(A1) SYLLABUS 2020-21
TITLE: QUALITY & RELIABILITY (Cluster Elective)

UNIT-I

Importance of SQC in industry. Statistical basis of She-wart control charts. Construction of control charts for variables (mean, range and standard deviation)
Interpretation of control charts. Natural tolerance limits and specification limits.

UNIT-II

Construction of control charts for attributes (p, np and c charts with fixed and varying sample sizes). Interpretation of control charts, Process capability index. Concept of six sigma and its importance.

UNIT-III

Acceptance Sampling Plans: Producers risk and consumer's risk. Concept of AQL and LTPD. Single and double sampling plans for attributes and derivation of their OC and ASN functions. Design of single and double sampling plans for attributes using Binomial.

UNIT-IV

Reliability: Introduction, Hazard function, Exponential distribution as life model, its memory-less property. Concepts of censoring and truncation.

UNIT-V

Reliability function and its estimation. System reliability-series, parallel and k out of N systems and their reliabilities.

Text Books:

1.BA/BSc III year paper - IV Statistics - applied statistics - Telugu academy by
Prof.K.Srinivasa Rao, Dr D.Giri. Dr A.Anand, Dr V.Papaiah Sastry.
2. Fundamentals of applied statistics : VK Kapoor and SC Gupta

3. S.K Sinha: Reliability and life testing. Wiley Eastern.

Reference Books :

1. R.C.Gupta: Statistical Quality Control.

BSC VI SEMESTER STATISTICS PAPER-VIII(A2) SYLLABUS 2020-21
TITLE: DESIGNS OF EXPERIMENTS (Cluster Elective)

UNIT-I

Design of experiments: Principles of experimentation, analysis of completely randomized design (C.R.D), Randomized Block Design (R.B.D), and Latin Square Design (L.S.D), including one missing observation, expectation of various sums of squares. Comparison of efficiencies of above designs.

UNIT-II

Missing plot technique: Analysis of Randomized Block Design (R.B.D) with one and two missing observations and Latin Square Design (L.S.D) with one missing observation.

UNIT-III

Balanced Incomplete Block design (BIBD) and Partially Incomplete block design (PBIBD).

UNIT-IV

Factorial Design: Estimation of main effects, interactions and analysis of $2^{2,}$ 2^3 &2^4.

UNIT-V

2^5&2^n. 3^2, 3^3 factorial experiments and confounding.

Books for Reference:

1. S.C. Gupta and V.K.Kapoor, *Fundamentals of Applied Statistics*, Sultan Chand and sons.
2. Das, M.N. and N.C. Giri, *Design and Analysis of Experiments*, 2nd edition, New Age International (P) Limited Publishers, 1986.
3. Montgomery, D.C: *Design of Analysis of Experiments*, John Wiley.
4. Murthy, M.N., *Sampling theory and methods*, Tata McGraw Hill, New Delhi, 1967.
5. Des Raj, *Sampling Theory*, Tata McGraw Hill, New Delhi, 1976.

BSC VI SEMESTER STATISTICS PAPER-VIII(B1) SYLLABUS 2020-21
TITLE: FORECASTING METHODS (Cluster Elective)

UNIT-I

Smoothing Methods: Averaging methods, exponential smoothing methods, a comparison of methods, general aspects of smoothing methods

UNIT-II

Decomposition methods: Trend fitting, the ratio-to moving averages classical Decomposition method, different types of moving averages.

UNIT-III

Models for time series data:

Auto-covariance and auto correlation functions, stationary processes, white noise processes, moving average (MA) processes, auto regressive (AR) processes, Auto regressive and moving average (ARMA) processes, Auto regressive integrated and moving average (ARIMA) processes.

UNIT-IV

Box-Jenkins Models: Identification, Estimation and diagnostic checking for the Models Simulation and Monto Carlo methods

UNIT-V

Application of Time-series analysis: Determining randomness of data, Examining stationery of a time series, removing non-stationarity in a time series, recognizing seasonality in a time series.

List of Reference Books:

1. Box, G.E.P, and Jenkins, G.M(1976) Time Series Analysis-Forecasting and control, Holden-dav, San Francisco
2. Anderson, T.W (1971). The statistical Analysis of time series, Wiley,N.V
   Montgomery, D.C. and Johnson, L.A.(1977). Forecasting and Time series Analysis, MC Grawhill.
3. Kendall, Sir Maurice and Ord, J.K.(1990). Time series Arnold (Third Edition), Edward
4. Forecasting methods by Makridakis
5. V.K.Kapoor and S.C.Gupta: Fundamentals of Applied Statistics. Sultan Chand
6. Parimal Mukhopadhyay: Applied Statistics. New Central Book agency

BSC VI SEMESTER STATISTICS PAPER-VIII(B2) SYLLABUS 2020-21
TITLE: ACTUARIAL STATISTICS (Cluster Elective)

UNIT-I

Introductory Statistics and Insurance Applications: Discrete, continuous and mixed probability distributions. Insurance applications, sum of random variables. Utility theory: Utility functions, expected utility criterion, types of utility function, insurance and utility theory.

UNIT-II

Principles of Premium Calculation: Properties of premium principles, examples of premium principles. Individual risk models: models for individual claims, the sum of independent claims, approximations and their applications.

UNIT-III

Survival Distribution and Life Tables: Uncertainty of age at death, survival function, time-until-death for a person, curate future lifetime, force of mortality, life tables with examples, deterministic survivorship group, life table characteristics, assumptions for fractional age, some analytical laws of mortality.

UNIT-IV

Life Insurance: Models for insurance payable at the moment of death, insurance payable at the end of the year of death and their relationships. Life annuities: continuous life annuities, discrete life annuities, life annuities with periodic payments. Premiums: continuous and discrete premiums.

Suggested readings:

3. Dickson, C. M. D. (2005): Insurance Risk And Ruin (International Series On Actuarial Science), Cambridge University Press.
4. Bowers, N. L., Gerber, H. U., Hickman, J. C., Jones, D. A. And Nesbitt, C. J. (1997): Actuarial Mathematics, Society Of Actuaries, Itasca, Illinois, U.S.A.

DEPARTMENT OF B.SC. COMPUTER SCIENCE:

The meeting of the Boards of Studies in Computer Science was held on Friday, 06.03.2020 at 12.00 Noon in the Department of Computer Science.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

1. Dr.A.Yesu Babu, Sir C.R.R. College Engineering, Eluru

External experts:

2. Mr.Suneel Kumar Duvvuru, Government Degree College, Rajahmundry

Faculty:

3. Mrs.P.Lakshmi Prasanna
4. Mrs.G.Prasanthi
5. Mrs.K.L.L.Lavanya
6. Mrs.A.Mamatha
7. Ms.N.Anusha Rose
8. Mrs.V.Valli Gayathri
9. Mrs.T.Swathi
10. Mrs.G.Radhika
11. Mr.P.L.N.Manoj Kumar

Students:

12. Pallavi, III B.Sc. M.E.Comp.
13. Sithara, III B.Sc. M.S.Comp.

Resolutions:

1. It was resolved to retain the I B.Sc. and II B.Sc. Computer Science syllabus for the academic year 2020-21 as it is without any changes.

2. It was resolved to introduce Basic Relational Algebra Operations, Relational Calculus and Interactive SQL topics in Unit II of V Semester Paper V Database Management Systems.

DEPARTMENT OF COMPUTER SCIENCE

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Computer Fundamentals and Photoshop
	II	Paper II	Programming in C
II Year	III	Paper III	Object Oriented Programming Using Java
	IV	Paper IV	Data Structures
III Year	V	Paper V	Database Management Systems
		Paper VI	Software Engineering
	VI	Paper VII	Operating Systems
		Paper VIII A1	Distributed Systems
		Paper VIII A2	Cloud Computing
		Paper VIII A3	Project Work

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU
I BSC COMPUTER SCIENCE I SEMESTER – PAPER I SYLLABUS 2020-21
TITLE: COMPUTER FUNDAMENTALS AND PHOTOSHOP

Course Outcome: To explore basic knowledge on computers and Photoshop's beauty from the practical to the painterly artistic and to understand how Photoshop will help you create your own successful images.

UNIT-I:

Introduction to computers, characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems :binary, hexa and octal numbering system.

Input and output devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and free ware software, Memories: primary, secondary and cache memory.

Unit –II

Introduction to Adobe Photoshop, Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, Paletts , screen modes, saving files, reverting files, closing files.

Colour manipulations: colour modes- Levels – Curves - Seeing Color accurately.

Unit –III

Working with tool box: working with Rectangular Marquee tool, Move tool, lasso tool, Magic wand tool, Slice tool ,Healing brush tool, Brush tool ,History Brush tool, Eraser tool, Blur tool, Dodge tool, Path Selection tool, Text tool, Pen tool, save and load selection-working with erasers-working with text and brushes - Patch tool – Crop tool-Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin.

Unit –IV

Images: working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections. Create 3D images-3D shapes, How to rotate a shape, 3D Effects, How to convert 2D image to 3D image.

Layers: Working with layers- layer styles- opacity-adjustment layers.

Unit –V

Filters: The filter menu, Working with filters- Editing your photo shoot, presentation –how to create adds ,artstic filter,blur filter,brush store filter,distort filters,noice filters,pixelate filters, light effects, difference clouds, sharpen filters,printing.

Reference Books:

1. Fundamentals of Computers by Reema Thareja from Oxford University Press
2. Adobe Photoshop Class Room in a Book by Adobe Creative Team.
3. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016 by David Maxwell

Student Activity:

1. **Design a poster for technical paper presentation.**
2. **Create a digital scrap book.**

I BSC COMPUTER SCIENCE II SEMESTER – PAPER II SYLLABUS 2020-21
TITLE: PROGRAMMING IN 'C'

Course objective:

- To develop programming skills using the fundamentals and basics of C-language
- To impart the knowledge about pointers which is the backbone of effective memory handling.
- To study the advantages of user defined data type which provides flexibility for application development
- To teach the basics of preprocessors available with C compliler
- To understand about the dynamic memory allocation using pointers which is essential for utilizing memory.
- To learn the basics of file handling mechanism.

Course outcome :

- The students can be able to develop programs using the basic elements like control statements, Arrays and Strings.
- The students can solve the memory access problems by using pointers

UNIT-I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts – Pseudo code – ProgrammingLanguages – Generation of Programming Languages – Structured Programming Language-Design and Implementation of Correct, Efficient and Maintainable Programs. **Introduction to C:** Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments –Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.

UNIT-II

Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement. **Functions**: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions – Type of recursion – Towers of Hanoi – Recursion vs Iteration.

UNIT-III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations that can be performed on Array – one dimensional array for inter-function communication – Two dimensional Arrays – Operations on Two Dimensional Arrays - Two Dimensional Arrays for inter-function communication – Multidimensional Arrays – Sparse Matrices. **Strings:** Introduction – Suppressive Input – String Taxonomy – String Operations –Miscellaneous String and Character functions.

UNIT-IV

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers – Generic Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function – Difference between Array Name and Pointer – Pointers and Strings – Array of pointers – Pointer and 2D Arrays – Pointer and 3D Arrays – Function Pointers – Array of Function Pointer – Pointers to Pointers – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers.**Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions – Self referential Structures – Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.

UNIT-V

Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data from Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments – Functions for Selecting a Record Randomly – Remove () – Renaming a File – Creating a Temporary File.

Prescribed Text Book

1. Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS

Reference Books

1. E Balagurusamy: ―COMPUTING FUNDAMENTALS & C PROGRAMMING‖ – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
3. 2. Henry Mullish & Huubert L.Cooper: The Sprit of C, Jaico Pub. House,1996.

II BSC COMPUTER SCIENCE III SEMESTER PAPER III SYLLABUS 2020-21
TITLE: OBJECT ORIENTED PROGRAMMING USING JAVA

Course objective:

- To understand fundamentals of programming such as variables,conditional and iterative statements.
- To understand fundamentals of OOP in java, including defining classes ,invoking methods and using class libraries.
- To develop problem-solving and programming skills using OOP concept

Course outcome:

- The student can be able to develop java programs using oop concepts such as inheritance and polymorphism.
- The student can develop efficient Java applets and applications using OOP concept
- The students will become familiar with the fundamentals and acquire programming skills in the Java language.

UNIT-I

Fundamentals Of Object–Oriented Programming: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **Overview Of Java Language**: Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **Constants, Variables & Data Types:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **Operators & Expressions**.

UNIT-II

Decision Making & Branching: Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the switch statement, the conditional operator.
Looping: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.
Classes, Objects & Methods: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

UNIT-III

Inheritance: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;
Arrays, Strings And Vectors: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;
Interfaces: Multiple Inheritance: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables.

UNIT-IV

Multithreaded Programming: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

Managing Errors And Exceptions: Types of errors : Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,

UNIT-V

Applet Programming: local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state.

Packages: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package.

Managing Input/Output Files In Java: Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Input Stream Classes, Output Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Using Streams, Reading and writing files.

Prescribed Text Book:

1. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.

Reference Books:

2. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, TATA McGraw-Hill Company.
3. Deitel &Deitel. Java TM: How to Program, PHI (2007)
4. Java Programming: From Problem Analysis to Program Design- D.S Mallik
5. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press

II BSC COMPUTER SCIENCE IV SEMESTER PAPER-IV SYLLABUS 2020-21
TITLE: DATA STRUCTURES

Course objective :

- To Know about the basic concepts of Stacks,Queues and Link-list.
- To understand several fundamental algorithms and various Sorting techniques.
- To design new algorithms for the applications and able to analyze the space & time efficiency of most algorithms.

Course outcome :

- The student should be able to choose an appropriate data structure for a particular problem.
- The students can sort the data using different sorting techniques.

UNIT-I

Introduction to Data Structures : Definition–Types of Data Structures: Primitive,Non primitive,linear, non linear data structures – Algorithm Efficiency-Space complexity-Time Complexity -Abstract Data Type(ADT).
Searching Techniques: Linear search – Binary Search

UNIT-II

Lists, Stacks and Queues: The List ADT-The Stack ADT-Applications of stack:Evaluation of Postfix expression,Conversion of infix to postfix -The Queue ADT
Linked Lists : Single Linked List-Double linked list – Circular linked list.

UNIT-III

TREES : Preliminaries-Binary Trees-The Search Tree ADT-Binary Search Trees-AVL Trees-Tree Traversals-Hashing-General Idea-Hash Function-Separate Chaining-Open Addressing-Linear Probing-Priority Queues(Heaps)-Model -Simple implementations-Binary Heap.

UNIT-IV

SORTING: Preliminaries-Insertion Sort-Shellsort-Heapsort-Mergesort – Quicksort - External Sorting.

UNIT-V

GRAPHS : Definitions-Topological Sort-Shortest Path Algorithms-Unweighted Shortest Paths-Dijkstra's Algorithm-Minimum Spanning Tree-Prim's Algorithm-Applications of Depth-First Search-Undirected Graphs-Biconnectivity-Introduction to NP Completeness.

Prescribed Text Books:

1. R.G.Dromey, "How to solve it by computer"(Chaps 1-2),Prentice-Hall of India,2002
2. M.A.Weiss,"Data Structures and algorithm Analysis in C",2nd ed, Pearson Education Asia,2002

Reference Books:

3. ISRD Group," Data structures using C", Tata McGraw Hill,2007
4. Richard F.Gilberg, Behrouz A.Forouzan, "Data Structures-A Pseudo code Approach with C", Thomson Brooks/COLE,1998.

III BSC COMPUTER SCIENCE V SEMESTER PAPER-V SYLLABUS 2020-21
TITLE: DATABASE MANAGEMENT SYSTEM

Course Objectives

- To give an introduction into DBMS.
- To describe DBMS architecture
- To provide an insight into Conceptual Model & Relational Model
- To demonstrate and understand the theory of Normalization.
- To understand about Transaction Processing, Concurrency Control & Recovery Management.
- To understand about Distributed Processing & Distributed DataBase Management System.

Course outcome:
The student should be able to Master working successfully on the design and development of a database application system .

UNIT-I

Introduction : Databases and Database users: Introduction-Characteristics of the Database Approach-Actors on the Scene-Workers behind the scene-Advantages of using the DBMS approach. **Database System concepts and architecture:** Data Models,Schemas and Instances-Three – Schema architecture and Data Independence – Database Languages and Interfaces – The Database System Environment – Centralized and Client / Server Architectures for DBMSs – Classification of Database Management Systems.

UNIT II

Conceptual Model and Relational Model:
Data Modeling using the Entry-Relationship (ER) model : Using High-Level conceptual data models for Database Design – Entity Types, Entity Sets, Attributes and keys – Relationship types, Relationship sets, Roles and Structural constraints - Weak Entity types – Refining the ER design for the company database – ER diagrams, Naming conventions and design issues.
The relational data model and relational database constraints: Relational model concepts – Relational model constraints and relational database schemas – Update operations, Tranctions and Dealing with constraint violations – Basic Relational Algebra Operations – Relational Calculus – Interactive SQL – Views.

UNIT III

Normalization: Functional dependencies and normalization for relational DATABASES: Functional dependencies – Normal forms based on primary keys – General definitions of second and Third normal forms – Boyce-Codd normal form – Multivalued dependencies and fourth normal form – Join dependencies and fifth normal form.

UNIT IV

Transaction Processing :Introduction to Transaction Processing Concepts and Theory: Introduction to Transaction Processing – Transaction and System concepts – Desirable properties of Transactions – Characterizing schedules based on recoverability.
Concurrency Control Techniques: Two-Phase locking techniques for concurrency control – Concurrency control based on Time stamp ordering.

Database Recovery Techniques: Recovery concepts – Recovery techniques based on differed update – Recovery techniques based on immediate update.

UNIT V

Distributed Database Systems: Introduction – Distributed data processing – Distributed database systems-Architectural models for DDBMS- DDBMS architecture.

Prescribed Book:

Fundamentals of DataBase Systems, Fifth Edition Ramez Elmasri, Shamkant B.Navathe

Referece Text books:

1. Database System Design, Implementation & Management.
   Author: Peter Rob, Carlos Coronel, Seventh Edition, Thomson (2007).
2. Principles of Distributed Database Systems, 2nd Edition
   Author: M.Tamer Ozsu and Patrick Valduriez, Pearson Education

III BSC COMPUTER SCIENCE V SEMESTER PAPER-VI SYLLABUS 2020-21

TITLE: SOFTWARE ENGINEERING

Course Objectives:

- To give an insight into various phases of Object Oriented Software Engineering.
- To describe in detail Requirement Elicitation, Analysis and Design activities of OOSE.
- To be able to know about the Fundamentals of Testing levels.

Course outcome :

The student should be able to develop and document a minor project by using the principles of Object Oriented Software Engineering.

UNIT-I

Introduction to Software Engineering: what is Software Engineering? – Modeling, Problem Solving, Knowledge Acquisition, Rationale. **Software Life Cycle** – SDLC, Process Models – Waterfall Model, Prototyping Model, Spiral Model, Iterative Enhancement Model.

UNIT-II

Requirements Elicitation Concepts: Introduction, Requirements Elicitation Concepts: Functional Requirements – Non Functional Requirements – Completeness, Clarity and Correctness, Realism, Verifiability and Traceability – Greenfield Engineering, Reengineering and Interface Engineering. **Requirement Elicitation Activities**: Indentifying Actors – Identifying Scenarios – Identifying Usecases – Refining Usecases – Identifying Relationships among actors and Usecases – Identifying Initial Analysis objects – Identifying Non-functional requirements.

UNIT-III

Analysis: Introduction-Analysis Concepts: Analysis object models and Dynamic models, Entity, boundary and control objects, Generalization and Specialization. **Analysis Activities**: Identifying Entity Objects, Identifying Boundary Objects, Identifying Control Objects, Mapping Usecases to objects with Sequence Diagrams, Modeling Interactions among objects with CRC cards, Identifying Associations, Identifying Aggregates, Identifying Attributes Modeling State, Modeling Inheritance Relationships between objects, Reviewing Analysis Model, Analysis Summary.

UNIT-IV

System Design: Introduction System Design concepts, System Design Activities.
Addressing Design Goals: Introduction, Concepts, and System Design Activities.

UNIT-V

Testing: Introduction- Testing Concepts-Faults, Erroneous States, Failures, Test Cases, Test Stubs and Drivers, Corrections. Testing Activities: Components Inspection, Usability Testing, Unit Testing, Integration Testing, System Testing.

Text Books:

1. Object Oriented Software Engineering – Using Uml
   Author: Bernd Bruegge and AllenH.Dutoit

III BSC COMPUTER SCIENCE VI SEMESTER PAPER-VII SYLLABUS 2020-21

TITLE: OPERATING SYSTEMS

Course objectives :

- To learn the fundamentals of Operating Systems .
- To gain an insight onto the resources of OS.
- The get complete knowledge on the various components of OS.
- To know the Protection and Security mechanisms of OS.

Course outcome :

The students should be able to Simulate an Operating System by including features like

- Process Management,
- Memory Managemment,
- I/O interface Management
- File System Management.

UNIT-I

Overview of Operating System-: Introduction- What is an operating system-Mainframe systems-Desktop systems-Multiprocessor systems-Distributed systems-Clustered systems-Real Time systems.

Operating System Structures: System Components-Operating System Services-System calls.

UNIT-II

Process Management- Processes: Process Concept-Process scheduling-Operations on Processes-Cooperating processes-InterProcess Communication.

CPU Scheduling: Basic Concepts-Scheduling Criteria-Scheduling Algorithms-Multiple Processor Scheduling.

Deadlocks Introduction: Methods for Handling Deadlocks-Deadlock Prevention-Deadlock Avoidance-Deadlock Detection.

UNIT-III

Memory Management: Swapping-Contiguous Memory Allocation-Paging-Segmentation.

Virtual Memory: Demand Paging-Page Replacement-Allocation of Frames-Thrashing.

UNIT-IV

File System Management &I/O Systems-File System Interface: File Concept-Access Methods-Directory Structure

Mass-Storage Structure: Disk Structure-Disk Scheduling-Disk Management-Swap Space Management- Optical Disk.

UNIT-V

Protection and Security: Goals of Protection-Domain of Protection-Access Matrix-Implementation of Access Matrix.

Security: The Security Problem-User Authentication-Program Threats-System Threats.

Prescribed Textbook: Operating System Concepts Sixth Edition by Silberschatz Galvin Gagne,Wiley Student Edition

III BSC COMPUTER SCIENCE VI SEMESTER PAPER-VIIIA1 SYLLABUS 2020-21
TITLE: DISTRIBUTED SYSTEMS (Cluster Elective)

Course Objectives:

- To give an insight into the Characterization of Distributed Systems & System Models.
- To be able to know the concepts of networking, internetworking & IPC.
- To describe how Transaction Processing, Concurrency Control is handled in Distributed Systems.
- To give an insight into the application of Distributed Systems in Mobile & Ubiquitos Computing.

UNIT-I

Characterization of Distributed Systems : Introduction – Examples of distributed systems – Resource sharing and web.
System Models : Introduction – Architectural models – Fundamental models.

UNIT-II

Characterization of Distributed Systems : Introduction – Examples of distributed systems – Resource sharing and web.
System Models : Introduction – Architectural models – Fundamental models.

UNIT-III

Distributed File Systems: Introduction – File service architecture.
Name Services: Introduction – Name services and the Domain Name System – Directory services.

UNIT-IV

Transactions and concurrency control: Introduction – Transaction – Nested transactions – Locks – Optimistic concurrency control – Timestamp ordering**.**
Distributed Transactions: Introduction – Flat and nested distributed transactions – Atomic commit protocols – Concurrency control in distributed transactions – Distributed deadlocks.

UNIT-V

Mobile and Ubiquitous computing : Introduction – Association – Interoperation – Sensing and context-awareness – Security and privacy – Adaptation.

Prescribed Text book:

1. Distributed Systems Concepts and Design Fourth Edition, Pearson Education, George Coulouris, Jean Dollimore, Tim Kindberg

III BSC COMPUTER SCIENCE VI SEMESTER PAPER-VIII A2 SYLLABUS 2020-21
TITLE: CLOUD COMPUTING (Cluster Elective)

Course Objectives:

- To learn how to use Cloud Services.
- To implement Virtualization
- To Collaborate with cloud
- Apply Map-Reduce concept to applications.

Course outcome :

The students should be able to

- Demonstrate and experiment simple Cloud Applications
- Apply resource allocation, scheduling algorithms.
- Implement Map-Reduce concept.
- Create virtual machines from available physical resources.
- Setup a private cloud.
- Familiarize with Open Stack.

UNIT-I

Introduction& concepts

Introduction to cloud computing: Introduction, characteristics of cloud computing, cloud models, cloud services examples, cloud-based services & applications.

Cloud concepts & technologies:

Virtualization, Load Balancing, Scalability & Elasticity, Deployment, Replication, Monitoring, Software Defined Networking, Networking function virtualization, Mapreduce, identity and Access Management, Service level agreements, Billing.

UNIT-II

Cloud services& platforms

Compute services, Storage services, Database services, Applications Services, Content Delivery services, Analytics Services, Deployment & Management services, Identity & Access Management services, Open source private Cloud Software.

Hadoop & Mapreduce

Apache Hadoop, Hadoop Map Reduce job Execution, Hadoop Schedulers, Hadoop Cluster setup

UNIT-III

Cloud application Design

Itroduction, Design Considerations for cloud applications, Reference Architecture for cloud applications, Cloud applications design Methodologies, Data Storage Approaches.

UNIT-IV

Python Basics

Introduction, Installing Python, Python Data Types & Data Structures, Control flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes 163.

UNIT-V

Python For Cloud

Python for Amazon Web Services, Python for Google Cloud Platform, Python for Windows Azure, Python for Map Reduce, Python Packages for interest, Python Web Application Framework-Django, Designing a RESTful Web API

Cloud Application development in Python

Design Approaches, Image processing App, Document Storage App, MapReduce App, Social Media Analytics App.

Prescribed Book:

1.Cloud Computing A Hands On Approach By Arshdeep Bagha and Vijay Madisetti from University press**.**

Reference Books:

1. Bloor R.,Kanfman M.,Halper F.Judith Hurwitz "Cloud Computing for Dummies" (Wiley India Edition), 2010
2. John Rittinghouse & James Ransome , "Cloud Computing Implementation Management and Strategy", CRC Press, 2010
3. Antohy T Velte , Cloud Computing : "A Practical Approach", Mc Graw Hill , 2009
4. Michael Miller, Cloud Computing : "Web-Based Applications that Change the way you work and collaborate Online ", Que Publishing , August 2008.
5. James E Smith , Ravi Nair, "Virtual Machines", Morgan Kaufmann Publishers, 2006

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III BSC COMPUTER SCIENCE VI SEMESTER PAPER-VIII A3 SYLLABUS 2020-21
(Cluster Elective)

PROJECT GUIDE LINES

Objective: Motivate the students to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

Every Computer Science CLUSTER student has to do the project work as the part of the curriculum in their 6th semester.

Every student is required to carry out project work under the supervision of a project Guide allotted to them.

The student should be under continuous assessment of the project guide. The student is required to present the progress of the project work during the semester .

The project report must possess the following chapters with font style : Times New Roman and font size : 12

Chapter-I : Introduction

Chapter-II : Review of Literature

Chapter – III : Methodology

Chapter – IV : Result Analysis

Chapter – V : Conclusion

The Project work should be either of an individual one or of a group of consisting not more than four members and the project report should be submitted at the end of the VI Semester. The students should defend their dissertation in front of experts during the time of viva-voce .

DEPARTMENT OF PHYSICS & ELECTRONICS

The meeting of the Boards of Studies in Physics & Electronics was held on Tuesday, 10.03.2020 at 11.00 p.m. in the Physics Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominees:

2. Dr.K.Ramachandra Rao, Govt. Degree College (A), Rajamahendravaram.
3. Dr.P.Paul Divakar, Sir C.R.R. Autonomous College, Eluru

External experts:

4. Dr.M.V.K.Mehar, P.R.Govt. College (A), Kakinada.
5. Dr.Ch.Kanaka Rao, Sri Y.N.College (A), Narsapur.

Faculty:

6. Dr.Mrs.A.Nirmala Jyothsna
7. Sr.K.Showrilu
8. Dr.K.Sreelatha
9. Mrs.P.Rani
10. Mrs.M.Saraswathi
11. Ms.A.Sai Sandhya
12. Ms.P.Anusha
13. Mrs.M.Lakshmi Durga
14. Ms.K.Sreelekha
15. Mrs.G.Naga Satya Neelima

Students:

1. P.Hema Varshini, III B.Sc.M.P.C.I Sec.
2. Md.Reshma Sultana, II B.Sc.M.P.C. I Sec.
3. N.Raja Harshitha, III B.Sc. M.E.Comp.
4. S.Lakshmi Sujatha, II B.Sc. M.E.Comp.

Resolutions:

Physics

- For I B.Sc – I Semester, the title of Physics Paper - I is changed as **"Mechanics and Fundamentals of waves"** and title of Physics Paper – II is changed as **"Advanced Mechanics & Waves and Oscillations".**
- As there are wide opportunities for Research in the field of Nanotechnology, it was resolved to offer an additional cluster during VI – Semester for B.Sc Physics students. The cluster is as follows :

  Paper – VII B - Material Science
  Paper – VIII B_1 - Fundamentals of Nanoscience
  Paper – VIII B_2 - Synthesis and Characterization of Nanomaterials
  Paper – VIII B_3 - Applications of Nano Materials and Devices

Electronics

- For Electronics students. it was resolved to retain the same syllabi for all I,II,III,IV,V and VI Semesters.

DEPARTMENT OF PHYSICS

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Mechanics, Waves and Oscillations
	II	Paper II	Mechanics, Waves and Oscillations
II Year	III	Paper III	Wave Optics
	IV	Paper IV	Thermo Dynamics and Radiation Physics
III Year	V	Paper V	Electricity and Magnetism
		Paper VI	Electricity and Solid State Physics
	VI	Paper VII	Electronics
		Paper VIII A1	Circuit Analysis (Cluster Elective)
		Paper VIII A2	Analog and Digital IC – Applications (Cluster Elective)
		Paper VIII A3	Project/MOOCS/Self-Study Course (Cluster Elective) Introduction to Electrical Measurement and Circuit Protection devices. (Self Study course)
	VI	Paper VII (B)	Material Science
		Paper VIII B1	Fundamentals of Nanoscience
		Paper VIII B2	Synthesis and Characterization of Nanomaterials
		Paper VIII B3	Applications of Nano Materials and Devices
PROJECT WORK			

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU
Semester pattern under Choice Based Credit System
I BSC I SEMESTER PHYSICS PAPER I SYLLABUS 2020-21
TITLE: MECHANICS, WAVES & OSCILLATIONS

UNIT-I

Vector Analysis: Scalar and vector fields-Definitions of Grad,Div, and Curl of a vector and their physical significance-vector integration-Line,Surface and Volume integrals-Stoke's,Gauss's and Green's theorems.

UNIT-II

Mechanics of Particles: Laws of motion-motion of variable mass system-Motion of Rocket-Multistage Rocket-Conservation of Energy and Momentum-collisions in two and three dimensions-Concept of impact parameter and scattering crosssection-Rutherford scattering (qualitative treatment only).

UNIT-III

Rotatory Motion: Definition of a rigid body-rotatory body as a system of particles under constraint-rotational kinematic relation-Relation between linear and angular kinematics of a particle in rotatory motion-Kinetic energy and angular momentum-Equation of motion of a rigid rotatory body (Torque of a rigid body)-Euler's equations-Precession of a Top-Gyroscope-Precession of equinoxes.

UNIT-IV

Fundamentals of Vibrations: Simple harmonic oscillator and solution of differential equation-physical characteristics of SHM-Torsion pendulum-measurement of rigidity modulus-compund pendulum –measurement of g-Combination of two mutually perpendicular simple harmonic vibrations of same frequency and of different frequencies-Lissojou's figures.

UNIT-V

Damped and forced oscillations: Damped oscillator and solution of differential equation of damped harmonic oscillator-energy considerations –Logarithmic decrement-Relaxation time-Quality factor-Differential equation of forced oscillator and its solution-Amplitude resonance and velocity resonance.

Assignments :

Applications of Stokes, Gauss , and Greens theorems

Text Books:

1. Common core vol I
2 Unified physics vol I
3. B.Sc Physics Telugu Academy ,Hyderabad
4. Mechanics – D.S.Mathur ,Sultan Chand& Co ,New Delhi
5. Mechanics – J.C.Upadyaya Ram Prasad & Co ,Agra
6. Properties of Matter Brijlal & Subrahmanyam
7.Waves and Oscillations ,S.Badami,V.BalaSubrahmanian and K.Rama Reddy orient Longman
8.Fundamentals of Physics –Halliday

I BSC II SEMESTER PHYSICS PAPER II SYLLABUS 2020-21
TITLE: MECHANICS , WAVES & OSCILLATIONS

UNIT-I

Central Forces: Central Forces – definition and examples – Conservative nature of central forces –conservative force as negative gradient of potential energy-– Equation of motion under a central force – motion under Inverse square law – Kepler's Laws – Derivation of Kepler's laws .

UNIT II

Relativity: Galelian relativity – search for absolute frame of reference- Michelson Morley experiment – Postulates of Special theory of relativity – Lorentz transformations– time dilation – Length contraction – addition of velocities – derivation of mass energy relation with experimental verification.

UNIT III

Vibration of Bars: Longitudinal vibrations in bars –wave equation and its general solution-special cases i) bar fixed at both ends ii) bar fixed at mid point iii) bar fixed at one end iv) bar free at both ends- transverse vibration in bars (introduction only).

UNIT IV

Vibrating Strings: Transverse wave propagation along a stretched string – general solution of wave equation and its significance – Reflection at a boundary – Modes of a stretched string clamped at both ends- Overtones and harmonics - Energy transport.

UNIT V

Mechanics of Continuous Media: classification of beams - types of bending – point load, distributed load – shearing force and bending moment – sign conventions – simple supported beam carrying a concentrated load at mid span – cantilever with an end load.

UNIT VI

Ultrasonics: Ultrasonics ,properties of ultrasonic waves ,production of ultrasonics by piezo electric and magnetostriction methods,detection of ultrasonics,applications of ultrasonic waves.

Assignment topics:

Noise pollution – origin,effect on the environment –prevention

Text Books:

1. Common core vol I
2 Unified physics vol I
3. B.Sc Physics Telugu Academy ,Hyderabad
4.Mechanics – D.S.Mathur ,Sultan Chand& Co ,New Delhi
5.Mechanics – J.C.Upadyaya Ram Prasad & Co ,Agra
6.Properties of Matter Brijlal & Subrahmanyam
7.Waves and Oscillations ,S.Badami,V.BalaSubrahmanian and K.Rama Reddy orient Longman
8.Fundamentals of Physics –Halliday

II BSC III SEMESTER PHYSICS PAPER-III SYLLABUS 2020-21
TITLE: WAVE OPTICS

UNIT-I

Matrix Methods In Paraxial Optics: Concept and derivation of translation,refraction and system matrices-Position of the image plane and magnification of the optical system-application of matrix methods to simple optical systems 1) Thick lens,two thin lenses in contact-Two thin lenses separated by distance-Cardinal points of lens system-unit and nodal planes.

UNIT-II

Interference: The superposition principle – Coherence-Condition for interference of light-Interference by division of wave front-Fresnel's biprism-determination of wave Length of light-determination of thickness of a transparent material-Change of phase On reflection-Lloyd's mirror experiment. Interference by division of amplitude- Obilique incidence of a plane wave on a thin Film due to reflected and transmitted light (cosine law) – coclours of thin films – interference by film with two non parallel reflecting surfaces (wedge shaped film) – determination of diameter of wire – newton's rings in reflected light with and without contact between lens and glass plate and transmitted light –determination of wavelength of monochromatic light.

UNIT-III

Diffraction: Introduction – fraunhofer diffraction – diffraction due to a single slit, limit of resolution – two slit fraunhofer diffraction – N slits – diffraction grating- normal incidence – determination of wavelength of light – dispersive power and resolving power of grating – fresnel diffraction – half period zones – zone plate – Phase Reversal Zone plate ,diffraction at a straight edge.Distinction between fraunhofer and fresnel diffraction. difference between interference and diffraction.

UNIT-IV

Polarisation And Double Refraction: Polarized light – polarization by reflection and refraction – Brewster's law – Malu's law – phenomenon of double refraction in calcite – Nichol prism – refraction of plane wave incidence on a negative crystal like calcite – analysis of polarized light by quarter & half wave plate – Babinet's compensator – optical activity – Laurent's half shade polarimeter.

UNIT-V

Lasers: Spontaneous and stimulated emission of radiation – laser principle – population inversion – Einstein coefficients – types of lasers – Ruby laser and He – Ne laser – applications of lasers – Basic concept of holography – Applications.

ASSIGNMENTS: Aberration: chromatic aberration – achromatic doublet – achromatism of two lenses in contact and separated by distance – monochromatic aberration – spherical aberration – Explanation of coma and astigamatism. Imaging by spherical refracting surface , Optical fiber types – modes – step and graded index fibres and their structure – fiber materials – Principles of fiber communication (qualitative treatment only).

II BSC IV SEMESTER PHYSICS PAPER-IV SYLLABUS 2020-21
TITLE: THERMODYNAMICS AND RADIATION PHYSICS

UNIT-I

Kinetic Theory Of Gases: Deduction of Maxwell's Law of distribution of speeds – C, C_p, C_{rms}-relation-mean free path-Transport Phenomenon – Viscosity and Thermal conduction.

UNIT-II

Thermodynamics: Introduction-Terminology-reversible and irreversible process – Carnot's theorem – Carnot's engine – efficiency –second law thermodynamics – Kelvin and clausius statements – Thermodynamic scale of temperature – Entropy concept –physical significance-measurement of entropy changes in reversible and irreversible processes – Entropy and disorder – Entropy and Universe – Entropy-temperature diagrams-change of entropy in perfect gas and when ice changes into steam.

UNIT-III

Thermodynamic potentials and maxwell's equations: Thermodynamic potentials – derivation of Maxwell's thermodynamic relations –clausius clayperon equation- specific heats – derivation of ratio and difference of two specific heats.

UNIT-IV

Low Temperature Physics: Joule –Kelvin effect- Liquefaction of gases using porous plug experiment – distinction between Joule expansion, Adiabatic expansion and Joule-Thompson's expansion – expression for Joule-Kelvin cooling – Liquefaction of Helium-Kapitza's method – Adiabatic demagnetization – Production of low temperatures. Principle of refrigeration – Vapour compression type and absorption type.

UNIT-V

Quantum Theory Of Radiation: Black body – Fery's black body – distribution of energy in the spectrum of black body – Wein's displacement law – Wein's law – Raleigh Jean's law (statements only) – Quantum theory of radiation – Planck's law – deduction of Wein's displacement law, Wein's law and Raleigh Jean's law from Planck's law. Measurement of radiation – Types of pyrometers – Disappearing filament optical pyrometer – experimental determination – Angstrom pyroheliometer – determination of solar constant-effective temperature of Sun.

UNIT-VI

Statiscal Thermodynamics: Introduction to statistical mechanics – concept of ensemble and phase space-Statistical equilibrium – probability theorems in statistical thermodynamics (Statements only) – Maxwell Boltzmann distribution law (statement and expression only) – Application to ideal gas – Quantum statistics –Fermi Dirac distribution law (statement and expression only) - Application to electron gas – Bose-Einstein distribution law (statement and expression only) - Application to photon gas – Comparison of three statistics.

ASSIGNMENTS: Working of air conditioning machines ,Effects of CFC's on ozone layer , working of refrigerator, Diffusion of Gases

Text Books: 1. B.Sc. Physics Vol II 2. Unified physics Vol II

III BSC V SEMESTER PHYSICS PAPER-V SYLLABUS 2020-21
TITLE: ELECTRICITY & MAGNETISM

UNIT-I

Electrostatics – introduction ,Gauss law & it's applications- electric field due to an (1) Infinite conducting sheet of charge (2) Uniformly charged sphere and (3) charged cyclindrical conductor. Mechanical force on a charged conductor- electric potential , potential due to charged spherical conductor - potential due to electric dipole – potential due to infinite line of charge. Potential energy of a dipole in an electric field. Problems.

UNIT-II

Dieletrics – an atomic view, polarization and charge density ,electric susceptibility ,dielectric constant.Gauss law in dielectrics,displacement vector, relation between D,E,P,χ & K .Boundary conditions at the dielectric surface.problems.

UNIT-III

Capacitance- introduction – capacitance of concentric spheres, cylindrical capacitor ,parallel plate capacitor with and without dielectric. Electric energy stored by a charged capacitor, force between the plates of a capacitor. Attracted disc electrometer- construction and working.problems.

UNIT-IV

Magnetostatics – introduction – definition of magnetic induction B – Biot- savart's law – B due to long straight wire, circular current loop and solenoid – force on a current carrying conductor- B.G Theory ,damping correction – torque on a current loop. problems.

UNIT-V

Magnetic shell – potential, field due to magnetic shell .Equivalence of electric current and magnetic shell – applications of field due to magnetic shell. Hall effect, cyclotron, synchrocyclotron and synchrotron.

Text Books:

1. Electricity and magnetism by Brijlal and Subramanyam
2. Common core Vol III & IV
3. Unified physics Vol I

III BSC V SEMESTER PHYSICS PAPER VI SYLLABUS 2020-21
TITLE: ELECTRICITY AND SOLID STATE PHYSICS

UNIT-I

Magnetic properties of materials– definitions of B, H, Permeability and susceptibility – hysteresis loop. Dia, para and ferromagnetic materials- Idea of magnetic domains- Langevin's theory of Paramagnetism, Weiss's theory of ferromagnetism - ferrimagnetism (concept only).

UNIT-II

Electromagnetic Induction– faradays laws- Lenz's law -expression for induced emf. Time varying magnetic field – Betatron – self inductance – L of a solenoid, Toroid. Mutual inductance – coefficient of coupling – energy stored in a magnetic field. Transformer – principle. Problems,

UNIT-III

Varying and alternating currents – – CR circuit, LR Circuit, LCR circuit with d.c source. Alternating current – relation between current and voltage in pure R, pure C and pure L- vector diagrams. LCR series and parallel resonant circuits- Q factor. Power in a AC circuit – Power factor- problems.

UNIT-IV

Maxwell's equations and electromagnetic waves – review of basic laws of electricity and magnetism- displacement current – Maxwell's equation in integral and differential form – electromagnetic wave equation in dielectric medium – transverse nature of plane electromagnetic waves. Poynting vector – Production and detection of electromagnetic waves- Hertz experiment.

UNIT-V

Solid State Physics: Crystalline nature of matter – crystal systems – Bravai's lattices- miller indices. Diffraction of X-rays – Laue method, Powder diffraction method. Simple crystal structures- NaCl, $CsCl_2$ and diamond. Types of bonding in crystals. (Characteristics of cryatals with different bondings)

Text Books:

1. Common Core Vol III and IV
2. Unified Physics Vol III
3. Solid State Physics by Gupta Kumar and Sharma

III BSC VI SEMESTER PHYSICS PAPER VII SYLLABUS 2020-21
TITLE: ELECTRONICS

UNIT-I

Basic electronics- introduction - Diode – PN junction diode – Volt-Ampere characteristic – Half Wave rectifier – Full Wave rectifier and Bridge rectifier – Capacitive and Inductive filters (qualitative treatment only) – Zener diode – characteristics – Zener diode as voltage regulator.

UNIT-II

NPN and PNP Transistor working – current components in a transistor – CB, CC and CE configurations – Characteristics of transistor in CE configuration-transistor hybrid parameters-determination of h parameters from characteristic CE amplifier – Single stage RC coupled amplifier – frequency response. Oscillators- Positive and negative feedback– Barkhaufsen criterion – Phase shift oscillator circuit and functioning only.

UNIT-III

Digital electronics – binary number system, converting binary to decimal and vice versa– binary addition and subtraction(1's and 2's compliment methods)- Hexa decimal number system – conversion of binary to Hexadecimal and vice versa, decimal to hexadecimal and vice versa - Logic gates - AND, OR, NOT gates using discrete components – Truth tables – NAND, NOR and XOR gates – Half adder and full adder – Demorgan's theorems – statement and proof.

UNIT-IV

Unijunction Transistor (UJT) and Silicon Controlled Rectifier (SCR)(10 hours) Structure and working of UJT- Characteristics-Application of UJT as a relaxation oscillator – structure and working of SCR – Two transistor representation- Characteristics of SCR – Experimental setup to study the SCR characteristics – Application of SCR for power control.

UNIT-V

Photo Electric Devices (10 hours)

Structure and operation characteristics , spectral response and applications of LDR, Photovoltaic Cell, Photo Transistor and LED.

Text Books:

1. Basic Electronics by N.C.Bhargava
2. Basic Electronics by B.L.Thereja
3. Unified Physics Vol III

Paper VIII is a cluster having THREE papers VIII A1 ,VIII A2 & VIII A3

VIII A1 – Circuit Analysis,
VIII A2 – Analog and Digital IC application,
VIII A3 – Project / MOOCS / Self study (Introduction to Circuit protection, control and measurement).

III BSC VI SEMESTER PHYSICS PAPER VIII A1 SYLLABUS 2020-21
TITLE: CIRCUIT ANALYSIS (Cluster Elective)

UNIT I

AC Circuit Fundamentals: The sinusoidal voltage and current - Average and R.M.S values- Phasor representation - the j operator- polar and rectangular forms of complex numbers, A.C.applied to R,L,C – phasor diagrams – concept of impedance –Power factor in an a.c circuits.

UNIT II

Passive network: Concept of ideal as well as practical current and voltage sources –Regulation Kirchhoff's current law and Kirchhoff's voltage law – method of solving A.C and D.C circuits by Kirchhoff's laws – Loop analysis – Nodal analysis.

UNIT III

Network Theorems (DC & AC): Super position theorem – Thevinin's theorem- Norton's theorem-Maximum power transfer theorem- Milliman theorem- Reciprocity theorem – application to simple networks.

UNIT IV

RC and RL Circuits: Transient response of RL and RC circuits with step input- time constants-frequency response of RC and RL circuits – their action as Low pass filter, High Pass filter – frequency response- Passive differentiating and integrating circuits.

UNIT V

Cathode Ray Oscilloscope: CRT and its working , electron Gun, Fluoscent Screen ,CRO block diagram , Measurement of voltage ,frequency and phase ,Function Generator –Block Diagram and its description

Text Books:

1. Unified Electronics Vol II & Vol III.
2. Principles of Electronics by V K MEHTA
3. Basic Electronics by B L. Thereja
4. Electric circuits by David A.Bell 7th edition Oxford higher education
5. Rober L Boylestad , " Introductory circuit analysis ", Universal Book stall fifth edition ,2003.
6. Circuit analysis by P.Gnanasivam – Pearson education
7. Networks,lines &fields by Ryder – PHI
8. Circuits and networks – A. Sudhakar and Shyam Mohan - TMH

III BSC VI SEMESTER PHYSICS PAPER VIII A2 SYLLABUS 2020-21
TITLE: ANALOG AND DIGITAL IC – APPLICATIONS (CLUSTER ELECTIVE)

UNIT I

OPERATIONAL AMPLIFIERS: Definition, Basic Op-Amp, ideal Op-Amp, Block diagram of Op-amp, inverting, non-inverting, virtual ground, Subtractors, Summing & scaling amplifier, Op-Amp parameters, Voltage to Current converter, Integrator, differentiator, logarithmic amplifier.

UNIT II

OP-AMP CIRCUITS: Voltage Regulator, Comparator, zero cross detecting circuit, Schmitt trigger, Wien – Bridge Oscillator, IC555 timer-Pin Diagram & Description, Mono Stable multi vibrator using IC555, Astable multi vibrator using IC555, Active filters – Low Pass, High Pass.

UNIT III

SEQUENTIAL LOGIC CIRCUITS(IC applications) : Flip – Flops, RS, Clocked RS, JK, D, Master Slave Flip – Flops.
REGISTERS : Types of Shift Registers, Shift Left Register, Shift Right Registers.

UNIT IV

COUNTERS: Definition, Applications of Counters, Types of Counters, Asynchronous – Up Counter, Down Counter, Mod – 10 Counter, Synchronous – Ring Counter, Differences between Asynchronous and Synchronous Counters.

APPLICATIONS OF COUNTERS : Digital Clock.

UNIT V

BOOLEAN ALGEBRA: Boolean Laws ,
K-Maps - Standard representation of logic functions (SOP & POS), Pair, Quad & Octets, minimization Techniques (Karnaugh map method – 4 Variables), don't care Conditions. Problems.
Design of Code convertor: BCD to Seven Segment, BCD to Grey, Grey to Binary.

Text Books:

1. G.K.Kharate-Digital electronics-oxford university press
2. M.Morris Mano, " Digital Design " 3rd Edition, PHI, New Delhi.
3. Op Amp and Linear Integrated Circuits By Ramakant Gaykwad
4. Linear Integrated Circuits By Roy Choudary

Reference Books :

1. Jacob Millan ,Micro Electronics,McGraw Hill.
2. Mithal G K, Electronic Devices and Circuits Thana Publishers.
3. Allan Motter shead ,Electronic Devices and Circuits – An Introduction- Prentice Hall

III BSC VI SEMESTER PHYSICS PAPER-VIII A3 SYLLABUS 2020-21
Project/MOOCS/Self study

TITLE: SELF-STUDY (Cluster Elective)

Self study Course: Introduction to Electrical Measurement and Circuit Protection Devices

Chapter – I - Circuit Measurement

Introduction to circuit measurement, in-circuit meters, out-of-circuit meters, basic meter movements, compass and conducting wire, permanent-magnet moving-coil movement, compass and alternating current, rectifier for ac measurement, damping, indicating alternating current, hot-wire and thermocouple meter movements, ammeters, ammeter connected in series, effect on circuit being measured, ammeter sensitivity, ammeter ranges, ammeter safety precautions, voltmeters, voltmeters connected in parallel, loading effect, sensitivity of voltmeters, voltmeter safety precautions, ohmmeter and its ranges, shunt ohmmeter, ohmmeter safety precautions, megohmmeter, multimeter, multimeter controls, multimeter scales, multimeter safety precautions, wattmeter, watt-hour meter.

Chapter – II - Circuit Protection Devices

Introduction, circuit conditions requiring protection devices, direct short, excessive current, excessive heat, fuses, circuit breakers, fuse types, plug-type fuse, cartridge fuse , fuse ratings, current rating, voltage rating, time delay rating, delay, standard, fast, identification of fuses, old military designation, new military designation, old commercial designation, new commercial designation, fuse holders, clip-type fuse holder, post-type fuse holders, checking and replacement of fuses, safety precautions when checking a fuse, replacement of fuses, preventive maintenance of fuses, thermal trip element, magnetic trip element, thermal-magnetic trip element, trip-free/non trip-free circuit breakers, time delay ratings, physical types of circuit breakers, circuit breaker maintenance.

III BSC VI SEMESTER PHYSICS ELECTIVE PAPER VII(B)
SYLLABUS 2020-21
TITLE: MATERIAL SCIENCE

3 Hour/Week **Total Hours: 45**

UNIT-I (9 hrs)

Materials and Crystal Bonding: Materials, Classification, Crystalline, Amorphous, Glasses; Metals, Alloys, Semiconductors, Polymers, Ceramics, Plastics, Bio-materials,Composites, Bulk and nanomaterials. Review of atomic structure – Interatomic forces – Different types of chemical bonds – Ioniccovalent bond or – Metallicbond – Dispersion bond – Dipole bond – Hydrogenbond – Binding energy of a crystal.

UNIT-II (9 hrs)

Defects and Diffusion in Materials: Introduction – imperfections -Types of defects - Point defects-Line defects- Production and removal ofdefects-Deformation- irradiation- quenching-annealing- recovery - recrystallization andgraingrowth. Diffusion in solids- Fick's laws of diffusion.

UNIT-III(9 hrs)

Mechanical Behavior of Materials: Different mechanical properties of engineering materials – Creep – Fracture – Technologicalproperties – Factors affecting mechanical properties of a material – Heat treatment - Cold andhot working – Types of mechanical tests – Metal forming process – Powder – Misaligning – Deformation of metals.

UNIT-IV (9 hrs)

4. **Magnetic Materials**: Dia-, Para-, Ferro- and Ferromagnetic materials,anti-Ferro magnetic materials ClassicalLangevin theory of dia magnetism, Quantum mechanical treatment of paramagnetism.Curie's law, Weiss's theory of ferromagnetism, Ferromagnetic domains.

UNIT-V (9 hrs)

Dielectric Materials:Dielectric constant, dielectric strength and dielectric loss, polarizability, mechanism of polarization,factors affecting polarization, polarization curve and hysteresis loop, types of dielectric materials, applications; ferroelectric, piezoelectric and pyroelectric materials, Clausius - Mosotti equation.

Reference books

1. Materials Science by M.Arumugam, Anuradha Publishers. 1990, Kumbakonam.
2.Materials Science and Engineering V.Raghavan, Printice Hall India Ed. V 2004. New Delhi.
3. Elementary Solid State Physics, 1/e M. Ali Omar, 1999, Pearson India
4. Solid State Physics, M.A. Wahab, 2011, Narosa Publications

III BSC VI SEMESTER PHYSICS PAPER VIII B1 SYLLABUS 2020-21
TITLE: FUNDAMENTALS OF NANOSCIENCE (Cluster Elective)

3 Hour/Week **Total Hours: 45**

UNIT-I (9hrs)

Background and history: Emergence of Nanoscience with special reference to Feynman and Drexler; Role of particle size; Spatial and temporal scale; Concept of confinement, strong and weak confinement with suitable example; Development of quantum structures, Basic concept of quantum well, quantum wire and quantum dot.Finite size Zero, One and Two Dimensional Nanostructures, Concept of Surface andInterfacial Energies. Physics of the solid state – size dependence of properties, crystalstructures, Lattice vibrations, Energy bands:- Insulators Semiconductors and conductors.

UNIT-II (9hrs)

Classification of Nanomaterials: Inorganic nanomaterials: carbon nanotubes and cones, Organic nanomaterials: dendrimers, micelles, liposomes, block copolymers;Bionanomaterials: Biomimtric, bioceramic and nanotherapeutics; Nanomaterials for molecular electronics and optoelectronics.

UNIT-III (9hrs)

Macromolecules: Classification of polymers, chemistry of polymerization, chain polymerization, step polymerization, coordination polymerization. Molecular weight of polymers-number average and weight average molecular weight, degree of polymerization, determination of molecular weight of polymers by viscometry.

UNIT-IV (9hrs)

Molecular & Nanoelectronics: Semiconductors, Transition from crystal technology to nanotechnology. Tiny motors, Gyroscopes and accelerometers. Nano particle embedded wrinkle resistant cloth, Transparent Zinc Oxide sun screens.

UNIT-V (9hrs)

Biomaterials: Implant materials: Stainless steels and its alloys, Ti and Ti based alloys, Ceramic implant materials; Hydroxyapatite glass ceramics, Carbon Implant materials,Polymeric Implant materials, Soft tissue replacement implants, Sutures, Surgical tapes and adhesives, heart valve implants, Artificial organs, Hard Tissue replacement Implants, Internal Fracture Fixation Devices, Wires, Pins, and Screws, Fracture Plates.

Reference Books

1. T. Pradeep: Textbook of Nanoscience and Nanotechnology Chapter (McGraw-Hill Professional, 2012), Access Engineering.
2. C. N. R. Rao, A. Mu¨ller, A. K. Cheetham, "The Chemistry of Nanomaterials: Synthesis,Properties and Applications", Wiley-VCH, 2006.
3. C. Breachignac P. Houdy M. Lahmani, "Nanomaterials and Nanochemistry", Springer,2006.
4. Guozhong Cao, "Nanostructures and Nanomaterials: Synthesis, Properties, and Applications", World Scientific Publishing Private, Ltd., 2011.
5. Zhong Lin Wang, "Characterization of Nanophase Materials", Wiley-VCH, 2004.
6. Carl C. Koch, "Nanostructured Materials: Processing, Properties and Potential Applications", William Andrew Publishing Norwich, 2006.

III BSC VI SEMESTER PHYSICS PAPER VIII B2 SYLLABUS 2020-21
TITLE: SYNTHESIS AND CHARACTERIZATION OF NANOMATERIALS
(Cluster Elective)

No. of hours per week : 03 hrs **Total Hours: 45**

Unit-I (9 hrs)

Nanomaterials synthesis:: Synthesis and nanofabrication, Bottom-Up and Top-Down approach with examples. Chemical precipitation methods, sol-gel method, chemical reduction, hydrothermal, process. Physical Mehtods- ball milling, Physical Vapour deposition (PVD), Sputtering, ChemicalVapor deposition (CVD), pray pyrolysis.

Unit-II (9 hrs)

Classification of materials: Types of materials, Metals, Ceramics (Sand glasses) polymers, composites, semiconductors.Metals and alloys- Phase diagrams of single component, binary and ternary systems, diffusion, nucleation and growth.

UNITS-III (9 hrs)

Glasses:The glass transition - theories for the glass transition, Factors that determine the glass-transition temperaturepreparation of glass materials.Applications of Glasses: Introduction: Electronic applications, Electrochemical applications, optical applications, Magnetic applications.

UNITS-III (9 hrs)

Liquid Crystals:Mesomorphism of anisotropic systems, Different liquid crystallinephase and phase transitions, Thermal and electrical properties of liquid crystals, TypesLiquid Crystals displays, applications of liquid crystals.

UNITS-IV (9 hrs)

Characterization Methods: XRD, SEM, TEM, characterizationtechniques for Nano materials.

References books

1. Encyclopedia of Nanotechnology by M.Balakrishna Rao and K.Krishna Reddy, Vol.I to X, Campus books.
2. Nano: The Essentials-Understanding Nanoscinece & Nanotechnology by T.Pradeep; Tata Mc. Graw Hill
3. Nanotechnology in Microelectronics & Optoelectronics, J.M Martine Duart, R.J Martin Palma, F. Agullo Rueda, Elsevier
4. Nanoelectronic Circuit Design, N.K Jha, D Chen, Springer
5. Handbook of Nanophysics- Nanoelectronics & Nanophotonics, K.D Sattler, CRC Press
6. Organic Electronics-Sensors & Biotechnology- R. Shinar & J. Shinar, McGraw-Hill

III BSC VI SEMESTER PHYSICS PAPER VIII B3 SYLLABUS 2020-21
TITLE: APPLICATIONS OF NANO MATERIALS AND DEVICES
(Cluster Elective)

3 Hour/Week **Total Hours: 45**

UNIT-I (9 hrs)

Optical properties: Coulomb interaction in nanostructures. Concept of dielectric constant for nanostructures and charging of nanostructure.Quasi-particles and excitations. Excitations in direct and indirect band gap semiconductor nanocrystals. Quantitative treatment of quasi-particles and excitations., charging effects.

UNIT-II (9 hrs)

Electrical transport:

Carrier transport in nanostrcutures. Hall effect, determination of carrier mobility and carrier concentration; Coulomb blockade effect, thermionic emission, tunneling and hoping conductivity. Defects and impurities: Deep level and surface defects.

UNIT-III (9 hrs)

ApplicationsApplications of nanoparticles, quantum dots, nanowires and thin films for photonic devices (LED, solar cells). Single electron transfer devices (no derivation). CNT based transistors. Nanomaterial Devices: Quantum dots heterostructures lasers, opticalswitching and optical data storage.

UNIT-IV(9 hrs)

Nanoelectronics: Introduction, Electronic structure of Nanocrystals,Tuning the Band gap of Nanoscale semiconductors, Excitons, Quantumdot, Single electron devices, Nanostructured ferromagnetism,Effect of bulk nanostructuring of magnetic properties,

UNIT-V(9 hrs)

Nanobiotechnology and Medical application: Introduction, Biological building blockssize of building blocks and nanostructures, Peptide nanowires and protein nanoparticles, DNA double nanowires, Nanomaterials in drug delivery and therapy, Nanomedicine, Targeted gold nanoparticles for imaging and therapy.

Reference books:

1.C.P. Poole, Jr. Frank J. Owens, Introduction to Nanotechnology (Wiley India Pvt. Ltd.).
2.S.K. Kulkarni, Nanotechnology: Principles & Practices (Capital Publishing Company).
3. K.K. Chattopadhyay and A.N. Banerjee, Introduction to Nanoscience & Technology (PHI Learning Private Limited).
4. Richard Booker, Earl Boysen, Nanotechnology (John Wiley and Sons).

DEPARTMENT OF ELECTRONICS

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Circuit Analysis
	II	Paper II	Electronic Devices
II Year	III	Paper III	Digital Electronics
	IV	Paper IV	Analog and Digital IC - Applications
III Year	V	Paper V	Basic Communication Techniques
		Paper VI	8085 Microprocessor and its applications
	VI	Paper VII	The 8051 Microcontroller
		Paper VIII A1	Electronic Instrumentation
		Paper VIII A2	Radar Systems and Antennas
		Paper VIII A3	Course on Power Electronics/Project/ MOOCS/ Self-Study Introduction to Micro Electronics (Self Study course)
Certificate Course - Weather Forecasting			
PROJECT WORK			

CH.S.D.ST.THERESA'S AUTONOMOUS DEGREE COLLEGE FOR WOMEN, ELURU
Semester pattern under Choice Based Credit System

I BSC I SEMESTER ELECTRONICS PAPER I SYLLABUS 2020-21
TITLE: CIRCUIT ANALYSIS

UNIT I

AC Circuit Fundamentals: The sinusoidal voltage and current - Average and R.M.S values- Phasor representation -the j operator- polar and rectangular forms of complex numbers, A.C.applied to R,L,C – phasor diagrams – concept of impedance –Power factor in an a.c circuits .

UNIT II

Passive network: Concept of ideal as well as practical current and voltage source – Kirchhoff's current law and Kirchhoff's voltage law – method of solving A.C and D.C circuits by Kirchhoff's laws – Loop analysis – Nodal analysis.

UNIT III

Network Theorems: Super position theorem – Thevinin's theorem- Norton's theorem- Maximum power transfer theorem- Milliman theorem- Reciprocity theorem (problem).

UNIT IV

RC and RL Circuits: Transient response of RL and RC circuits with DC input- time constants- frequency response of RC and RL circuits – their action as Low pass filter, High Pass filter – frequency response- Passive differentiating and integrating circuits.

UNIT V

Resonance: Resonance in Series and parallel RLC circuits- resonant frequency – Q Factor- Band width –Selectivity. Comparison of series and parallel resonance.

Assignments

Cathode Ray Oscilloscope:CRT and its working , electron Gun, Electrostatic and Magnetostatic deflections.Deflection Sensitivity, Fluoscent Screen ,CRO block diagram , Measurement of voltage ,frequency and phase ,Function Generator –Block Diagram and its description, application to simple networks, Tank circuit –LC oscillations.

Text Books:

1. Unified Electronics Vol II & Vol III.
2. Principles of Electronics by V K MEHTA
3. Basic Electronics by B L. Thereja
4. Electric circuits by David A.Bell 7th edition Oxford higher education
5. Rober L Boylestad , " Introductory circuit analysis ", Universal Book stall fifth edition ,2003.
6. Circuit analysis by P.Gnanasivam – Pearson education
7. Networks,lines &fields by Ryder – PHI
8. Circuits and networks – A. Sudhakar and Shyam Mohan - TMH

I BSC II SEMESTER PAPER II - ELECTRONICS SYLLABUS 2020-21
TITLE: ELECTRONIC DEVICES

UNIT-I

Junction diodes: PN Junction Diode -working in forward & reverse bias condition ,junction capacitance – diode current equation (No derivation)- effect of temperature on reverse saturation current ,V- I characteristics ,Zener and avalanche Breakdown , Zener diode – V-I characteristics regulated power supply using Zener diode ,Tunnel diode – Principle , working,V-I Characteristics .

UNIT-II

Bipolar Junction Transistor (BJT): PNP and NPN transistors- Current components in BJT – BJT static characteristics (Input and Output)- CB, CE , (Cut off, active and saturation regions).- CE configuration as two port network- h parameters-h Parameter equivalent circuit – determination of h- parameters from the characteristics- biasing and load line analysis – fixed and self bias and voltage divider bias arrangement, thermal runaway , concept of stability factor, factors affecting stability , transistor as a switch.

UNIT-III

Field Effect Transistor (FET): FET construction – working – drain & transfer characteristics – parameters of FET –FET as an amplifier – MOSFET –Enhancement MOSFET – Depletion MOSFET – construction & working – Drain characteristics of MOSFET – comparison of FET & BJT and JFET & MOSFET .

UNIT IV

Photo Electric Devices: Structure and operation characteristics, spectral response and applications of LDR, Photovoltaic Cell, Photo Transistor and LED.

UNIT V

Power supplies: Rectifiers- Half wave , full wave and bridge rectifiers – Efficiency – Ripple factor, Filter – L-section and π section filters –Voltage regulators – Block diagram of regulated power supply, three terminal fixed voltage I.C regulators (78XX and 79XX) – principal and working of switch mode power supplies (SMPS)

Assignment :

Applications of FET as voltage variable resistor and MOSFET as a switch, Application of SCR for power control. Photo diode , Solar Cell, Unijunction Transistor (UJT) and Silicon Controlled Rectifier (SCR)(10 hours) Structure and working of UJT- Characteristics-Application of UJT as a relaxation oscillator – structure and working of SCR – Two transistor representation-Characteristics of SCR – Experimental setup to study the SCR characteristics,Varactor diode , CC configurations, LCD.

Books for Reference:

1. Basic Electronics by B. L. Thereja
2. Unified Electronics Vols I & II
3. Principles of Electronics by V.K.Mehta
4. Basic Electronics by Grob.
5. Electric circuits by Schaum Series
6. Electric Devices and circuits by David A.Bell 7th edition Oxford higher education
7. A.P.Malvino , "Principles of Elctronics ". TMH , 7th Edition
8. T.F.Bogart , Beasley , "Electronic Devices and circuits "Pearson Education 6th Edition
9. N.N Bhargava , D.C Kulshreshta , and S.C .Gupta "Basic Electonics And Linear Circuits " TMH
10. T.L. Floyd , " Electronic Devices and Circuits " PHI 5th Edition
11. V.K.Metha " Principles of Electronics " S.Chand Co. New edition

12. Godse A.P. , Bakshi U.A (1st Edition), Electronic Devices , Technical Publications Pune

II BSC III SEMESTER PAPER III ELECTRONICS SYLLABUS 2020-21

TITLE: DIGITAL ELECTRONICS

UNIT-I

NUMBER SYSTEM AND CODES: Decimal, Binary, Hexadecimal, Octal, BCD, Conversions, Complements (1's, 2's,9's and 10's), Addition, Subtraction, Gray, Excess-3 Code conversion from one to another.

UNIT-II

BOOLEAN ALGEBRA AND THEOREMS: Boolean Theorems, De-Morgan's laws. Digital logic gates, Multi level NAND & NOR gates. Standard representation of logic functions (SOP and POS), Minimization Techniques (Karnaugh Map Method: 4 variables), don't care condition.

UNIT-III

COMBINATIONAL DIGITAL CIRCUITS: Adders-Half & full adder, Subtractor-Half and full subtractors, Parallel binary adder, Multiplexers (2:1,4:1)) and Demultiplexers (1:2), Encoder (8-line-to-3-line) and Decoder (3-line-to-8-line).

UNIT-IV

SEQUENTIAL DIGITAL CIRCUITS:

Flip Flops: S-R FF , J-K FF, T and D type FFs, Master-Slave FFs,

Registers:- Definition of Register, Types of Registers: shift left register, shift right register.

UNIT-V

MEMORY DEVICES:

General Memory Operations, RAM (Static and Dynamic), ROM, PROM, EPROM – UV EPROM EEPROM, Flash ROM, PLA(Programmable logic Array), PAL(Programmable Array Logic).

Assignments : IC-LOGIC FAMILIES**:** TTL logic, DTL logic, RTL Logic, CMOS Logic families (NAND&NOR Gates)

Text books:

1. M.Morris Mano, " Digital Design " 3rd Edition, PHI, New Delhi.
2. Ronald J. Tocci. "Digital Systems-Principles and Applications" 6/e. PHI. New Delhi. 1999.(UNITS I to IV)
3. G.K.Kharate-Digital electronics-oxford university press
4. S.Salivahana&S.Arivazhagan-Digital circuits and design
5. Fundamentals of Digital Circuits by Anand Kumar

Reference Books :

1. Herbert Taub and Donald Schilling. "Digital Integrated Electronics" . McGraw Hill. 1985.
2. S.K. Bose. "Digital Systems". 2/e. New Age International. 1992.
3. D.K. Anvekar and B.S. Sonade. "Electronic Data Converters : Fundamentals & Applications". TMH. 1994.
4. Malvino and Leach. " Digital Principles and Applications". TMG Hill Edition. corrected)

II BSC IV SEMESTER PAPER-IV ELECTRONICS SYLLABUS 2020-21

TITLE: ANALOG AND DIGITAL IC - APPLICATIONS

UNIT-I

OPERATIONAL AMPLIFIERS: Definition, Basic op-amp Ideal op-amp, Block diagram of op-amp, inverting, noninverting, virtualground, Adders, subtractors, summing amplifier, voltage follower, op-amp parameters, voltage to current convertor ,integrator, differentiator, differential amplifier, Logarithmic amplifier.

UNIT-II

OP-AMP CIRCUITS: voltage regulator, comparator, zerocross detecting circuit, Schmitt trigger. Wein bridge Oscillator , square wave generator, IC555 timer - Pin diagram functional block diagram, Mono Stable multivibrator using IC555, Astable multivibrator using IC555**,** Active filters - low pass, high pass, Band pass.

UNIT-III

COMBINATIONAL & SEQUENTIAL LOGIC CIRCUITS (IC-Applications):

Design of Code convertor: BCD to Seven Segment, BCD to Grey, Grey to Binary.

Design of Counters using State Machine: Mod N counter, Preset Table,Binary Up/Down Counter. Design of Universal Shift Register.

UNIT-IV

DATA CONVERTERS: A/D converter:- Successive Approximation ADC - Single slope and dual slope converter, D/A converter: R-2R Ladder network, Binary Weighted.

UNIT-V

Applications of Registers & Counters :

Counters: Synchronous, Asynchronous, UP counters -Mod-10,Mod-8, Down counter, 4-bit , Ring counter.

Applications of Counters: Digital Clock

Applications of Shift Registers: Parallel to Serial ,Serial to Parallel, UART.

Text Books:

1. G.K.Kharate-Digital electronics-oxford university press
2. M.Morris Mano, " Digital Design " 3rd Edition, PHI, New Delhi.
3. Op Amp and Linear Integrated Circuits By Ramakant Gaykwad
4. Linear Integrated Circuits By Roy Choudary

Reference Books :

1. Jacob Millan ,Micro Electronics,McGraw Hill.
2. Mithal G K, Electronic Devices and Circuits Thana Publishers.
3. Allan Motter shead ,Electronic Devices and Circuits – An Introduction- Prentice Hall

II BSC V SEMESTER PAPER V ELECTRONICS SYLLABUS 2020-21

TITLE: BASIC COMMUNICATION TECHNIQUES

UNIT-I

Amplitude Modulation &Frequency modulation: Introduction- need for modulation – Modulation index-analysis of AM wave-sidebands of AM -Band width-Power of AM wave-AM Modulator - AM signal detection, diode detector-Limitations of AM.- FM introduction – advantages-Frequency deviation and carrier swing-Modulation index-Deviation ratio-Percent Modulation– frequency components of FM – reactance modulator.

UNIT-II

Pulse Modulation: Introduction – pulse transmission – Pulse amplitude modulation-generation and demodulation of PAM - PTM – Sampling theorem- PPM modulation , generation and demodulation of PPM – TDM.

UNIT-III

Pulse Digital Modulation : Pulse code modulation – principle – advantages and applications of PCM –PSK- QPSK .

UNIT-IV

Radio Transmitters and Receivers: General block diagram of AM transmitter systems - Radio receivers classification – principle of super heterodyning – super heterodyne receiver – function of each block – FM receiver block diagram and function of each block – comparison with AM receivers.

UNIT-V

Antenna terminology : isotropic radiator – radiation pattern – radiation intensity, Antenna gain, directive gain(power gain & its importance), directivity – radiation resistance – antenna bandwidth – folded dipole antenna – yagi antenna.
(constructional details and their uses only of all antennas).

Assignment Topics:

1. Principle and applications of PSK, FSK and DPSK (differential phase shift keying).
2. Radio wave propagation- electromagnetic wave spectrum- Radio frequency bands, propagation of radio wave – Surface(or ground) wave propagation – Space wave propagation- Sky wave propagation : Ionosphere and its stratification-Explanation of terms : virtual height, MUF, skip distance, optimum working frequency.
3. Construction and uses of– helical antenna – rhombic antenna.

Reference Books:

1. Communication principles –kennedy
2. Radio engineering – G.K.Mithal
3. Antenna and wave propagation K.D. Prasad

III BSC V SEMESTER ELECTRONICS PAPER-VI SYLLABUS 2020-21
TITLE: 8085 MICROPROCESSOR AND ITS APPLICATIONS

UNIT-I

Introduction to microcomputer & microprocessor-Microprocessor-Architecture of 8085-Functioning of each block-Pin configuration.

UNIT-II

Basic Instructions of 8085- Instruction word size-Instruction cycle-Machine Cycle and state-Timing diagram-Addressing modes and classification of instructions into groups-assemblers-Assembler directives-salient features of assemblers.

UNIT-III

Programming with 8085 microprocessor-Assembly language programs for 1's and 2's complement-Addition, Subtraction, multiplication, Division of two 8-bit numbers. Addition of block of data, Addition with carry, Larger of the Two given numbers-Smaller of the Two given numbers Largest of the given array of numbers and smallest of the given array of numbers (8 Bit numbers) -16-Bit Addition.

UNIT-IV

Address space partition –memory mapped I/O scheme and I/O mapped I/O scheme - memory interfacing and I/O interfacing – data transfer Schemes- Programmed data transfer- schemes synchronous data transfer– Asynchronous data transfer – Interrupt driven data transfer- DMA data transfer scheme-serial data transfer, Burst mode ,Cycle Stealing.

UNIT-V

Interfacing devices and peripheral subsystems - Programmable peripheral interface 8255– programmable interrupts controller 8259 – programmable DMA controller 8257.

Assignment topics : Basic ideas of Semiconductor memories-memory types, SRAM, DRAM, IRAM, CDROM, EPROM, Interrupt mechanisms of 8085, I/O keyboard & display interface 8279, Programmable timer 8253, programmable communication interface 8251.

Text Books:

1. Microprocessor architecture programming and applications with 8085- Ramesh Goenker
2. Fundamentals of microprocessor and microcomputer B.Ram
3. Unified Electronics Vol 3
4. Introduction to microprocessors A.P. Mathur
5. Intel microprocessor 8085 by P.K.Ghosh & Sridhar
6. Intel microprocessor 8085 by Trubiel & Avtar singh.

III BSC VI SEMESTER ELECTRONICS PAPER-VII SYLLABUS 2020-21
TITLE: THE 8051 MICROCONTROLLER

UNIT-I

The 8051 Microcontrollers: Microcontrollers Vs Microprocessors - Microcontrollers and Embedded Processors – Pin description of 8051-Architecture of 8051– the Program counter – 8051 flag bits and PSW register – 8051 Register banks and stack- Data types and directives- - Applications of Microcontroller.

UNIT-II

The 8051 instruction set: Introduction-Data transfer group-Arithmetic group- Logic Instructions –Branch control group-I/O machine control group-compare instructions - Rotate and Swap Instruction- Loop and jump instructions – Call instructions- Single Bit Instructions 8051 Addressing modes: Immediate addressing mode, register addressing mode register indirect addressing mode-Direct addressing mode-Indexed addressing mode.

UNIT-III

8085 Assembly language programming- Introduction to 8051 programming- Assembling and Running an 8051 program – Addition, subtraction of two 8 bit numbers , number of 1's and 0's in a 8 bit number, smaller & larger in a given array of numbers, Division and Multiplication of two 8bit numbers, Addition of an array of 8 bit numbers- concept of signed and unsigned numbers.

UNIT-IV

Timer0,Timer1,Modes of operation of timers, TMOD register, TCON register. The 8051 Serial Communication: Basics of Serial communication - Synchronous Vs asynchronous communication - the 8051 connection to RS232-RXD,TXD pins in the 8051.

UNIT-V

Introduction: Interfacing an LCD to 8051. - Interfacing to ADC- interfacing a DAC to the 8051. Real World Interfacing I: 8051 interfacing to the keyboard, Stepper motor.

Assignment topics: BCD and ASCII application programs , Time delay generation, Timer/Counter Programming: Programming of 8051 timers – Counter programming and calculation - Real World Interfacing II: Temperature Sensors: Interfacing with external ROM, external RAM

Text Books:

1. The 8051 Microcontroller and Embedded Systems – Muhammad Ali Mazidi and Janice Gillispie Mazidi.
2. The 8051 Microcontroller – Kenneth J Ayala

Paper VIII is a cluster having THREE papers VIII A1 ,VIII A2 & VIII A3

VIII A1–Electronic Instrumentation
VIII A2 – Radar Systems and Antennas
VIII A3 – Project / MOOCS / Self study(Introduction to Micro Electronics).

III BSC VI SEMESTER ELECTRONICS PAPER-VIII A1 SYLLABUS 2020-21
TITLE: ELECTRONIC INSTRUMENTATION (Cluster Elective)

UNIT-I

Basic of measurements:Instruments accuracy , precision , sensitivity , resolution range, errors in measurement, Multimeter , principles of measurement of dc voltage and dc currents, ac current and resistance, sources of Errors.

UNIT-II

CRO: Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration(only explanation), time base operation, synchronization, front panel controls, specifications of CRO and their significance.

UNIT-III

Applications CRO: Measurement of voltage, dc and ac frequency , time period, special features of dual trace, digital storage oscilloscope, block diagram and principle of working.

UNIT-IV

Digital instruments: Principle and working of digital instruments, characteristics of a digital meter, working principle of digital voltmeter, Specifications of DVM.
Digital Multimeter: Analog Vs Digital Multimeter , Digital Multi meter - Block diagram, working, frequency counter ,accuracy and resolution.

UNIT-V

Signal generators: Block diagram explanation, specifications of low frequency signal generators, pulse generator, function generator-working, Brief idea for testing, specifications. Distortion factor meter, wave analysis.
Bridges: Introduction , Block diagram and working of LCR bridge – specifications

Reference Books

1. A text book in electrical technology by B.L.Thereja (S.Chand&Co)
2. Digital circuits and systems by Venugopal 2011 (Tata Mcgraw Hill)
3. Digital Electronics by SubrathaGhoshal 2012 (Cengage Learning)

III BSC VI SEMESTER ELECTRONICS PAPER-VIII A2 SYLLABUS 2020-21
TITLE: RADAR SYSTEMS AND ANTENNAS (Cluster Elective)

UNIT-I

Sky wave propagation : Fundamentals of Ionosphere ,Sky wave propagation, critical frequency,MUF and Skip Distance .

UNIT-II

Radar systems: Fundamental- A simple RADAR –overview of frequencies- Antenna gain Radar Equation –Accuracy and Resolution –Integration time and the Doppler shift.

UNIT-III

Designing a surveillance radar: Radar and surveillance-Antenna beam-width consideration-pulse repetition frequency-unambiguous range and velocity-pulse length and sampling-radar cross section-clutter,Noise.

UNIT-IV

Tracking radar- sequential lobbing-Conical scanning-Mono pulse radar-Tracking accuracy and process- Frequency ability –Radar guidance, Signal and data processing**.**

UNIT-V

Antenna Arrays – Two element array. Linear arrays. Multiplication of patterns and binomial array- Wave Polarization - Effect of Earth on vertical patterns. (chapter 11 and 12 in Jordan and Balmain and chapter 4 in Kraus)

Assignment:

Frequency Independent (FI) Antennas -Frequency independence concept. Equiangular spiral. Log periodic (LP) antennas. Array theory of LP & FI structures. (chapter 15 in Jordan and Balmain and chapter 15 in Kraus).

Reference books:

1 .Understanding Radar systems – Simon Kingsley and Shaun Quegan
2. Introduction to Radar systems – MI Skolnik
3. Electromagnetic waves and Radiation Systems –E.C. Jordan and K.G. Balmain
4. Antennas-J.D.Kraus. (Second edition)
5. Antenna Theory-C.A.Balanis (Second edition)

III BSC VI SEMESTER ELECTRONICS PAPER-VIII A3 SYLLABUS 2020-21
TITLE: POWER ELECTRONICS (Cluster Elective)

PAPER- VIII (A3): POWER ELECTRONICS *w.e.f : 2019-2020*

UNIT-I

Power Electronics: Introduction, Need for Semiconductor Power devices, Block diagram of Power Electronic System, Semiconductor Power Devices - **Silicon Controlled Rectifier (SCR) or Thyristor-** Structure and basic operation, Static V-I characteristics, Two transistor analogy, Gate or Control characteristics, Turn-ON and Turn-OFF methods, Dynamic / Switching (Turn-ON and Turn-OFF) characteristics, Ratings, Parameters, Protection, Commutation of SCR.

UNIT-II

Power Devices: Diac and Triac: Basic structure, working and V-I characteristics of Diac and Triac. **Power MOS FET**: Basic structure, Operation modes, switching characteristics. **Power BJT**: Basic structure, Second break down, Saturation and Quasi-saturation state. **Insulated Gate Bipolar Transistors (IGBT):** Basic structure, V-I Characteristics, Switching characteristics

.

UNIT-III

Choppers: Basic chopper configuration, Classification of Choppers (Type A-D), Circuit diagram and operation principle of Step-down (Buck converter) chopper, Step-up (Boost converter) chopper, Step down/up (Buck-boost converter) choppers with R load. Commutation of Choppers – Voltage Commutated Chopper.

UNIT-IV

Power Inverters: Principle of operation of single phase Inverter, Applications and Classification of Inverters, Series and Parallel Inverters – Circuit description**,** Operation modes with wave forms. Single phase Bridge inverters with R load – Half bridge and Full Bridge Inverters. Performance parameters of Inverters, Simple Pulse Width Modulation (PWM) Techniques used in Inverters.

UNIT-V

Power Electronics Applications: Need and function of UPS and SMPS, Block diagram of UPS system, UPS configurations – ON line and OFF line UPS systems (block diagrams) operation, Batteries for UPS. SMPS – Principle of working, Block diagram of SMPS system. HVDC Transmission - Principle of working, Types of HVDC transmission systems. RF heating - Principle of Induction heating and Dielectric heating, Advantages, Disadvantages and Applications. Battery charger, Emergency Lighting System.

Refference Books:

1. **Power Electronics, M.D.Singh & K.B. Khanchandani, TMH**
2. **Power Electronics, K. Hari Babu, Scitech Publication.**
3. **Power Electronics, M.S. Jamil Asghar, PHI.**
4. Power Electronics, P.C.Sen, TMH
5. Power Electronics & Controls, S.K. Dutta
6. Power Electronics Circuits, Devices and Applications, H. Rashid, Pearson Education
7. Power Electronics, Applications and Design, Ned Mohan, Tore.

III BSC VI SEMESTER PHYSICS PAPER-VIII A3 SYLLABUS 2020-21
Project/MOOCS/Self study

TITLE: INTRODUCTION TO MICRO ELECTRONICS (Self Study Course)

Chapter – I

Microelectronics: Introduction, evolution of microelectronics , vacuum-tube equipment , solid-state devices , integrated circuits, state-of-the-art microelectronics, fabrication of microelectronic devices , fabrication of ic devices , packaging techniques , recent developments in packaging , equivalent circuits , j-k flip-flop and IC sizes , IC package lead identification (numbering), ic identification, microelectronic system design concepts , terminology , system packaging interconnections in printed circuit boards , clearance-hole method , plated-through-hole method, layer build-up method , advantages and disadvantages of printed circuit boards , environmental considerations , electrical considerations.

Chapter – II

Miniature/Micro Miniature (2m0 repair program and high-reliability soldering: Introduction, miniature and microminiature (2m) electronic repair program , levels of maintenance , source, maintenance, and recoverability (sm&r) codes , test equipment , general-purpose electronic test equipment (GPETE) , repair stations , rotary-drive machine , circuit card holder and magnifier , high-intensity light , hand tools , pliers, miscellaneous tools and supplies , safety equipment , stereoscopic-zoom microscope , replacement parts , repair station facilities.

Chapter – III

Miniature and Micro miniature Repair procedures: Introduction , miniature and Micro miniature electronic repair procedures , conformal coatings , removal and replacement of discrete components , lead terminations, manually controlled vacuum plunger. , installation and soldering of printed circuit components, application of solder and soldering iron tip , removal and replacement of dips , removal and replacement of to packages , removal and replacement of flat packs , planar-mounted components (flat-packs) , repair of printed circuit boards and cards, replacing eyelets, broken board repair , burned board repair , safety , electrostatic discharge , prevention of ESD damage, grounded workbenches , personal safety.

CERTIFICATE COURSE - WEATHER FORECASTING 2020-21

Introduction to atmosphere: Elementary idea of atmosphere: physical structure and composition; compositional layering of the atmosphere; variation of pressure and temperature with height; air temperature; requirements to measure air temperature; temperature sensors: types; atmospheric pressure: its measurement; cyclones and anticyclones: its characteristics. **(9 Periods).**

Measuring the weather: Wind; forces acting to produce wind; wind speed direction: units, its direction; measuring wind speed and direction; humidity, clouds and rainfall, radiation: absorption, emission and scattering in atmosphere; radiation laws.**(4 Periods).**

Weather systems: Global wind systems; air masses and fronts: classifications; jet streams; local thunderstorms; tropical cyclones: classification; tornadoes; hurricanes.**(3 Periods).**

Climate and Climate Change: Climate: its classification; causes of climate change; global warming and its outcomes; air pollution; aerosols, ozone depletion, acid rain, environmental issues related to climate. **(6 Periods).**

Basics of weather forecasting: Weather forecasting: analysis and its historical background; need of measuring weather; types of weather forecasting; weather forecasting methods; criteria of choosing weather station; basics of choosing site and exposure; satellites observations in weather forecasting; weather maps; uncertainty and predictability; probability forecasts. **(8 Periods).**

Demonstrations and Experiments:

1. Study of synoptic charts & weather reports, working principle of weather station.
2. Processing and analysis of weather data:

(a) To calculate the sunniest time of the year.
(b) To study the variation of rainfall amount and intensity by wind direction.
(c) To observe the sunniest/driest day of the week.
(d) To examine the maximum and minimum temperature throughout the year.
(e) To evaluate the relative humidity of the day.
(f) To examine the rainfall amount month wise.

3. Exercises in chart reading: Plotting of constant pressure charts, surfaces charts, upper wind charts and its analysis.
4. Formats and elements in different types of weather forecasts/ warning (both aviation and non aviation)

Reference books:

1. Aviation Meteorology, I.C. Joshi, 3rd edition 2014, Himalayan Books
2. The weather Observers Hand book, Stephen Burt, 2012, Cambridge University Press.
3. Meteorology, S.R. Ghadekar, 2001, Agromet Publishers, Nagpur.
4. Text Book of Agrometeorology, S.R. Ghadekar, 2005, Agromet Publishers, Nagpur.
5. Why the weather, Charls Franklin Brooks, 1924, Chpraman & Hall, London.
6. Atmosphere and Ocean, John G. Harvey, 1995, The Artemis Press.

DEPARTMENT OF CHEMISTRY

The meeting of the Board of Studies in Chemistry was held on Friday 06.03.2020 at 2.00 p.m. in the Chemistry Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello., Principal

University Nominee:

2. Dr.B.Jagan Mohan Reddy, Adikavi Nannaiah University, Rajahmundry

External experts:

3. Dr.K.A.Emmanuel, Sir C.R.R. College (A), Eluru

Faculty :

4. Dr.C.A.Jyothirmayee
5. Dr.Mrs.M.Rama
6. Dr.Mrs.V.Nagalakshmi
7. Dr.Mrs.N.Gayathri Devi
8. Mrs.K.Chukamma
9. Mr.G.Srinivasa Rao
10. Mrs.K.J.Subhashini
11. Mrs.N.Syamala
12. Mrs.B.Anuradha
13. Ms. N.Madhavi
14. Mrs.P.V.V.Lakshmi
15. Mrs.K.Varalakshmi

Student representatives :

16. A.Christiana, III B.Sc ZNC
17. V.Mahathi, II B.Sc .M.P.C, I Sec.

Resolutions:

- Preliminary Board of Studies meeting of department of chemistry was held on 05/03/2020 is presented in the Boards of studies meeting on 6th March, 2020 by the Chair person Dr.C.A.Jyothimayee.
- It is resolved in the Board I, II, III, IV, V & VI Semester theory and practical syllabus will be continued for the year 2019-20.
- To encourage research and development culture students are advised to download the research articles as per their choice of topics for project selection under the guidance of faculty members and to have internships in collaboration with pharma labs.
- It is resolved to start two add-on courses:

  (i) Research methodology to enable students to prepare a Project proposal and write a research paper.

  (ii) Chem draw in order to enable students to understand Organic chemistry in a better way.

DEPARTMENT OF CHEMISTRY

PAPER TITLES

	Semester	Paper	Title of the Paper
I B.Sc	I	Paper I	Inorganic & Physical Chemistry
	II	Paper II	Organic & General Chemistry
II B.Sc	III	Paper III	Spectroscopy & Organic Chemistry
	IV	Paper IV	Inorganic & Physical Chemistry
III B.Sc	V	Paper V	Inorganic, Organic & Physical Chemistry
		Paper VI	Inorganic, Organic & Physical Chemistry
	VI	Paper VII	Analytical Methods in Chemistry (General Elective)
		Paper VIII A1	Polymer Chemistry (Cluster Elective)
		Paper VIII A2	Instrumental Methods of Analysis (Cluster Elective)
		Paper VIII A3	Pharmaceutical and Medicinal Chemistry (Cluster Elective)

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I BSC I SEMESTER CHEMISTRY SYLLABUS 2020-21
TITLE: INORGANIC & PHYSICAL CHEMISTRY

UNIT-I

P – Block elements: General Characteristics of elements of groups 13, 14, 15.

Group – 13: Synthesis and structure of diborane and higher boranes (B_4H_{10} and B_5H_9), boran – nitrogen compounds ($B_3N_3H_6$ and BN)

Group – 14: Preparation and applications of silanes and silicones.

Group – 15: Preparation and reactions of hydrazine, hydroxylamine.

UNIT-II

1.P – Block elements: General Characteristics of elements of groups 16 and 17

Group – 16: Classification of oxides based on (i) chemical behaviour and (ii) oxygen content.

Group – 17: Inter halogen compounds and pseudo halogens.

2.Organometallic Chemistry: Definition and classification of organometallic compounds, nomenclature, preparation, properties and applications of alkyls of Li and Mg elements.

Physical Chemistry

UNIT-III

Solid state: Symmetry in crystals. Law of constancy of interfacial angles. The law of rationality of indices. The law of symmetry. Definition of lattice point, space lattice, unit cell. Bravis lattices and crystal systems. X-ray diffraction and crystal structure. Bragg's law. Determination of crystal structure by Bragg`s method and the powder method, indexing of planes and structure of NaCl and KCl crystals. Defects in crystals. Stoichiometric and non-stoichiometric defects. Band Theory of semi conductors. Extrinsic and intrinsic semiconductors, n- and p-type semiconductors and their applications in photoelectrochemical cells.

UNIT-IV

1.Gaseous state: Compression factors, deviation of real gases from ideal behaviour. Van der Waal's equation of state. PV-Isotherms of real gases. Andrew's isotherms carbondioxide, Continuity of state, critical phenomena. The Van der Waal's equation and the critical state. Relationship between critical constants and Van der Waal's constants. Joule Thomson's effect. Liquefaction of gases – i) Linde's method ii) Claude's methods

2.Liquid state: Inter molecular forces, structure of liquids(qualitative description) Structural differences between solids, liquids and gases. Liquid crystals, the mesomorphic state. Classification of liquid crystals into Smectic and Nematic. Differences between liquid crystal and solid /liquid. Application of liquid crystals as LCD devices.

UNIT-V

Solutions: Liquid-liquid –ideal solutions, Raoult's law. Ideally dilute solutions, Henry's law. Non-ideal solutions.Vapour pressure - composition and vapour pressure – temperature curves. Azeotropes - HCl- H_2O, ethanol – water systems and fractional distillation. Partially miscible liquids-phenol-water, trimethylamine – water, nicotine-water systems. Effect of impurity on consulate temperature. Immiscible liquids and steam distillation. Nernst distribution law. Calculation of the partition coefficient. Applications of distribution law.

I BSC II SEMESTER CHEMISTRY SYLLABUS 2020-21
TITLE: ORGANIC & GENERAL CHEMISTRY

UNIT-I

Structural theory in Organic Chemistry: Types of bond fission and organic reagents (Electrophilic, Nucleophilic and free radical reagents including neutral molecules like H_2O, NH_3 & $AlCl_3$).

Bond polarization: Factors influencing the polarization of covalent bonds, electronegativity-inductive effect. Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (c) Stability of carbonium ions. Resonance or Mesomeric effect, application to (a) acidity of phenol, and (b) acidity of carboxylic acids. Hyper conjugation and its application to stability of carbonium ions, free radicals and alkenes.

Types of Organic reactions: Addition electrophilic, nucleophilic and free radical. Substitution – electrophilic, nucleophilic and free radical. Elimination – Examples (mechanism not required).

UNIT-II

1.Acyclic Hydrocarbons:

Alkenes – Preparation of alkenes (a) by dehydration of alcohols (b) by dehydrohalogenation of alkyl halides (c) by dehalogenation of 1, 2 dihalides , Saytzey's rule. **Properties:** Addition of hydrogen, heat of hydrogenation and stability of alkenes. Addition of halogen and its mechanism. Addition of HX, Markonikov's rule, addition of H_2O, HOX, and H2SO4 with mechanism and addition of HBr in the presence of peroxide (anti-Markonikov's addition). Oxidation – hydroxylation by $KMnO_4$, OsO_4, peracids (via epoxidation) hydroboration

Dienes – Types of dienes, reactions of conjugated dienes – 1, 2 and 1, 4 addition of HBr to 1, 3-butadiene and Diel's – Alder reaction.

Alkynes – Preparation by dehydrohalogenation of dihalides, dehalogenation of tetrahalides, **Properties:** Acidity of acetylenic hydrogen (formation of Metal acetylides). Preparation of higher acetylenes, Metal ammonia reductions. Physical properties. Chemical reactivity – electrophilic addition of X_2, HX, H_2O (Tautomerism), Oxidation with $KMnO_4$, OsO_4, reduction and Polymerisation reaction of acetylene.

2.Alicyclic hydrocarbons (Cycloalkanes):

Nomenclature, Preparation by Freunds methods, heating dicarboxylic metal salts. Properties – reactivity of cyclopropane and cyclobutane by comparing with alkanes, Stability of cycloalkanes –Baeyer's strain theory, Sachse and Mohr predictions and Pitzer's strain theory. Conformational structures of cyclobutane, cyclopentane, cyclohexane.

UNIT-III

Benzene and its reactivity: Concept of resonance, resonance energy. Heat of hydrogenation, heat of combustion of Benzene, mention of C-C bond lengths and orbital picture of Benzene.

Concept of aromaticity – aromaticity (definition), Huckel's rule – application to Benzenoid (Benzene, Napthalene) and Non – Benzenoid compounds (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation).

Reactions – General mechanism of electrophilic substitution, mechanism of nitration. Friedel Craft's alkylation and acylation (reactions only). Orientation of aromatic substitution – Definition of ortho, para and Meta directing groups. Ring activating and deactivating groups with examples (Electronic interpretation of various groups like NO_2 and Phenolic). Orientation of (i) Amino, methoxy and methyl groups (ii) Carboxy, nitro, nitrile, carbonyl and Sulphonic acid groups. (iii) Halogens (Explanation by taking minimum of one example from each type).

GENERAL CHEMISTRY
UNIT-IV

1.Surface chemistry: Definition of colloids. Solids in liquids(sols), Preparation, purification, properties - kinetic, optical , electrical. Stability of colloids, Hardy-Schulze law, protective colloids.
liquids in liquids (emulsions) preparation, properties, uses. Liquids in solids (gels) preparation, uses.
Adsorption: Physical adsorption, Chemisorption. Freundlich, Langmuir adsorption isotherms. Applications of adsorption.

2. Chemical Bonding: Valence bond theory, hybridization, VB theory as applied to ClF_3, $Ni(CO)_4$, Dipole moment- Orientation of dipoles in an electric field, Dipole moment, induced dipole moment, dipole moment and structure of molecules. Molecular orbital theory – LCAO method, construction of M.O.diagrams for homo-nuclear and hetero – nuclear diatomic molecules (N_2, O_2, CO and NO).

UNIT-V

Stereochemistry of carbon compounds: **Molecular representations** – Molecular representations - Wedge, Fisher, Newman and Saw – Horse formulae. Stereoisomerism, Stereoisomers: enantiomers, diastereomers – definition and examples. Conformational and configurational isomerism – definition. Conformational isomerism of ethane and n-butane.

Enantiomers: Optical activity – wave nature of light, plane polarized light, interaction with molecules, optical rotation and specific rotation. Chiral molecules – definition and criteria – absence of plane, center and Sn axis of symmetry – asymmetric and dissymmetric molecules. Examples of asymmetric molecules (Glyceraldehydes, Lactic acid, Alanine) and dissymmetric molecules (Trans – 1, 2-dichloro cyclopropane).

Chiral centers: definition – molecules with similar chiral carbon (Tartaric acid), definition of mesomers – molecules with dissimilar chiral carbons (2, 3-dibromopentane). Number of enantiomers and mesomers – calculation. D, L and R,S configuration for asymmetric and dissymmetric molecules. Cahn – Ingold – Prelog rules. Racemic mixture – racemisation and resolution techniques.

Diastereomers: definition – geometrical isomerism with reference to alkenes – cis, Trans, and E-Z configuration

II BSC III SEMESTER CHEMISTRY PAPER III SYLLABUS 2020-21
TITLE: SPECTROSCOPY & ORGANIC CHEMISTRY

SPECTROSCOPY 30 hrs (2h / w)

UNIT-I **6h**

General features of absorption - Beer-Lambert's law and its limitations, transmittance, Absorbance, and molar absorptivity. Single and double beam spectrophotometers. Application of Beer-Lambert law for quantitative analysis of 1. Chromium in $K_2Cr_2O_7$
2. Manganese in Manganous sulphate

Electronic spectroscopy: **8h**

Interaction of electromagnetic radiation with molecules and types of molecular spectra. Energy levels of molecular orbitals (σ, π, n). Selection rules for electronic spectra. Types of electronic transitions in molecules effect of conjugation. Concept of chromophore and auxochrome.

UNIT-II

Infra red spectroscopy **8h**

Different Regions in Infrared radiations. Modes of vibrations in diatomic and polyatomic molecules. Characteristic absorption bands of various functional groups. Interpretation of spectra-Alkanes, Aromatic, Alcohols carbonyls, and amines with one example to each.

Proton magnetic resonance spectroscopy (^{1}H-NMR) **8h**

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals - spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone.

ORGANIC CHEMISTRY

UNIT-III

1.Halogen Compounds: Nomenclature and classification of alkyl (into primary, secondary, tertiary,), aryl, aralkyl, allyl, vinyl, benzyl halides. Chemical reactivity – formation of RMgX. Nucleophilic substitution reaction – classification into SN^1 and SN^2. Mechanism and energy profile diagrams of SN^1 and SN^2 reactions. Stereo chemistry of SN^2 (Walden inversion), SN^1 (Racemisation) explanation of both by taking the example of optically active alkyl halide – 2 - bromobutane. Ease of hydrolysis – comparison of allyl, benzyl, alkyl, vinyl and aryl halides.

2.Hydroxy Compounds: Nomenclature and classification of hydroxyl compounds, Alcohols: Preparation with hydroboration reaction, Grignard synthesis of alcohols. Phenols: Preparation (a) from diazoniumsalts (b) from arylsulphonates (c) from cumene. Physical properties: – Hydrogen bonding (inter molecular and intra molecular) effect of hydrogen bonding on boiling point and water solubility. Chemical properties: – (a) Acidic nature of phenols (b) Formation of alkoxide/ phenoxides and their reaction with RX (c) Replacement of OH by X using PCl_5, PCl_3 , PBr_3, $SOCl_2$ and with $HX/ZnCl_2$.(d)Esterificaion by acids (mechanism) ,(e) Dehydration of

alcohols.(f)Oxidation of alcohols by CrO_3, $KMnO_4$.(g)Special reactions of phenols – (a) Bromination, (b) Kolbe – Schmidt reaction, (c) Riemer Tiemann (d) Fries rearrangement (e) Azocoupling. Identification of alcohols by oxidation – $KMnO_4$, Cericammonium nitrate – Lucas reagent; phenols by reaction with $FeCl_3$, Polyhydroxy compounds – Pinacol – pinacolone rearrangement.

UNIT-IV

Carbonyl Compounds: Nomenclature of aliphatic and aromatic carbonyl compounds, structure of carbonyl group. Synthesis of aldehydes and ketones from acid chloride by using 1, 3 – dithianes, nitriles and from carboxylic acids.

Physical properties**:** Absence of hydrogen bonding, keto-enol tautomerism, reactivity of carbonyl group in aldehydes and ketones. Nucleophilic addition reactions with (a) $NaHSO_3$ (b) HCN (c) RMgX (d) NH_2OH (e) $PhNHNH_2$ (f) 2,4 – DNP (g) alcohols formation of hemiacetols and acetols (h)halogenations using PCl_5 with mechanism. Base catalyzed reactions with mechanism: (a) Aldol (b) Cannizaro reaction (c) Perkin reaction (d) Benzoin condensation (e) Halo form reaction (f) Knoevenagel reaction.

Oxidation of aldehyde Bayer-Villiger oxidation of ketones.

Reduction without mechanism:(a) Clemmensen reduction (b)Wolf-Kushner reduction (c)MPV reduction (d)$LiAlH_4$ and $NaBH_4$

Analysis of aldehydes and ketones with (a) 2,4 DNP test (b)Tollen's test (c)Fehling's test (d) Schiff test (e) Halo form test (with equations).

UNIT-V

1.Carboxylic Acids and Derivatives: Nomenclature, classification and structure of carboxylic acids. Methods of preparation by a) hydrolysis of nitriles, amides and esters. b) Carbonation of Grignard reagents. Special methods of preparation of aromatic acids by (a) oxidation of the side chain. (b) Hydrolysis by benzotricholorides. (c) Kolbe reaction**.**

Physical properties:- hydrogen bonding, dimeric association, acidity- strength of acids with the examples of trimethyl acetic acid and trichloro acetic acid. Relative differences in the acidities of aromatic and aliphatic acids.

Chemical properties: Reactions involving H, OH and COOH groups – salt formation, anhydride formation acid chloride formation, amide formation and esterification (mechanism).

Degradation of carboxylic acids by Huns-Diecker reaction, decarboxylation by Schimdt reaction, Arndt-Eistert synthesis, halogenations by Hell-Volhard-Zelinsky reaction.

Derivatives of carboxylic acids: Reaction of acid chlorides, acid anhydrides, acid amides, esters (mechanism of the hydrolysis of esters by acids and bases).

2.Active methylene compounds:

Acetoacetic esters: Preparation by Claisen condensation, keto-enol tautomerism. Acid hydrolysis and ketonic hydrolysis. Preparation of

a) monocarboxylic acids

b) dicarboxylic acids. Reaction with urea.

Malonic ester: Preparation from acetic acid Synthetic applications: Preparation of

a)Monocarboxylic acids (propionic acid and n-butyric acid),

b)Dicarboxylic acids (succinic acid and adipic acid),

c) α, β - unsaturated carboxylic acids (crotonic acids)

Reaction with urea

BSC IV SEMESTER CHEMISTRY PAPER IV SYLLABUS 2020-21
TITLE: INORGANIC & PHYSICAL CHEMISTRY

UNIT-I

1.Chemistry of d-block elements: Characteristics of d-block elements with special reference to electronic configuration, colour, variable valence, magnetic properties, catalytic properties and ability to form complexes. Comparative treatment of second and third transition series with their 3d analogues.

2.Theories of bonding in metals: Valence bond theory. Explanation of metallic properties and its limitations. Free electron theory, thermal and electrical conductivity of metals, limitations. Band theory, formation of bands, explanation of conductors, semiconductors and insulators.

UNIT-II

1.Metal carbonyls and related compounds: EAN rule, classification of metal carbonyls, structures and shapes of metal carbonyls of V, Cr, Mn, Fe, Co and Ni.

2.Chemistry of f-block elements:

Chemistry of lanthanides – electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties, separation of lanthanides by ion exchange and solvent extraction methods.

Chemistry of actinides – electronic configuration, oxidation states, actinide contraction, position of actinides in the periodic table, comparison with lanthanides in terms of magnetic properties.

PHYSICAL CHEMISTRY

UNIT-III

Dilute solutions: Colligate properties, Raoult's law, relative lowering of vapour pressure (Ostwald and Walker's method), its relation to molecular weight of non-volatile solute. Elevation of boiling point and depression of freezing point. Experimental determination of Elevation in boiling point (Cottrel's method) and depression in freezing point (Beckmann's method), Derivation of its(Elevation of boiling point and depression of freezing point) relation to molecular weight of non-volatile solute. Osmosis, osmotic pressure, Experimental determination of osmotic pressure (Berkeley-Hartley method). Theory of dilute solutions. Determination of molecular weight of non-volatile solute from osmotic pressure. Abnormal Colligative properties.

UNIT-IV

Electrochemistry - I: specific conductance, equivalent conductance, measurement of equivalent conductance, variation of specific and equivalent conductance with dilution. Migration of ions and Kohlrausch's law, Arrhenius theory of electrolytic dissociation and its limitations, Ostwald's dilution law. Debye-Huckel- Onsagar's equations for strong electrolytes (elementary treatment only). Transport number, definition and determination by Hittorf method.

Applications of conductivity measurements: Determination dissociation constant (K_a)of acid, determination of solubility product of sparingly soluble salt, conductometric titrations. Types of reversible electrodes – gas electrode, Metal – metal ion, metal – insoluble salt and redox electrodes. Electrode reactions, Nernst equation, single electrode potential.

UNIT-V

1.Electrochemistry -II

Standard Hydrogen electrode- reference electrodes – standard electrode potential, sign conventions, electrochemical series and its significance. Revesible and Irrevesible cells, conventional representation of electrochemical cell . EMF of a cell and its measurements. Computation of cell EMF. Applications of EMF measurements – potentiometric titrations.

2.Phase Rule: Concept of phase, components, degree of freedom. Derivation of Gibbs phase rule. Phase equilibrium of one component – water system. Phase equilibrium of two-component system, Solid-liquid equilibrium. Simple eutectic diagram of Pb-Ag system, desilverisation of lead – NaCl - Water system. Freezing mixtures.

III BSC V SEMESTER CHEMISTRY PAPER - V SYLLABUS 2020-21
TITLE: INORGANIC, ORGANIC & PHYSICAL CHEMISTRY

Part – A (Inorganic chemistry)

UNIT-I

Co-ordination Chemistry:IUPAC nomenclature, bonding theories – review of Werner's theory and Sidgwick's concept of coordination. Valence bond theory, geometries of coordination numbers 4 – tetrahedral and square planar and 6-octahedral and its limitations, crystal field theory, splitting of d- orbital in octahedral, tetrahedral and square planar complexes – low spin and high spin complexes – factors affecting crystal field splitting energy, merits and demerits of crystal-field theory. Isomerism in coordination compounds – structural isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.

UNIT-II

Spectral and magnetic properties of metal complexes: Electronic absorption spectrum of $[Ti(H_2O)_6]^{3+}$ ion. Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility – Gouy method.

Stability of metal complexes: Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect. Determination of composition of complex by Jobs method and mole ratio method.

Part – B (Organic Chemistry)

UNIT-III

1.Nitrogen Compounds: Nitro hydrocarbons: Nomenclature and classification – nitro hydrocarbons – structure. Tautomerism of nitro alkanes leading to aci and keto form. Preparation of nitro alkanes. Reactivity – halogenations, reaction with HONO (Nitrous acid), Nef reaction and Mannich reaction leading to Michael addition and reduction. Amines (Aliphatic and aromatic) Nomenclature, classification into 1^0, 2^0, 3^0 Amines and quaternary ammonium compounds. Preparative methods – 1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffmann's bromamide reaction (mechanism). Reduction of amides & Schmidt reaction. Physical properties and basic character – comparative basic strength of Ammonia, methyl amine, dimethyl amine, trimethyl amine and aniline, N – methyl aniline and N,N –dimethyl aniline (in aqueous and non aqueous medium), steric effects and substituent effects. Use of amine salts as phase transfer catalysts. Chemical properties (a) Alkylation (b) Acylation (c) Carbylaminereaction (d) Hinsbergseparation (5) Reaction with nitrous acid of 1^o, 2^o, 3^o (Aliphatic and aromatic amines). Electrophilic substitutions of Aromatic amines – Bromination and Nitration. Oxidation of aryl and 3^o Amines, Diazotisation. Cyanides and

Isocyanides: Nomenclature (aliphatic and aromatic) structure preparation of cyanides from (a) Alkyl halides (b) from amides (c) from aldoximes. Preparation of isocyanides from Alkyl halides and Amines. Properties of cyanides and isocyanides (a) hydrolysis (b) addition of Grignard reagent (iii) Reduction (IV) Oxidation.

UNIT-IV

2.Heterocyclic Compounds: Introduction and definition: Simple five membered ring compounds with one Hetero atom ex. Furan, Thiophene and Pyrrole. Numbering the ring systems as per Greek letter and numbers. Aromatic character – 6-electron system (four electrons from two double bonds and a pair of non bonded electrons from the hetero atom). Tendency to undergo substitution reactions Resonance structures: Indicating electron surplus carbons and electron deficient hetero atom. Electrophilic substitution reactions at 2 or 5 positions, Halogenation, nitration and sulphonation under mild conditions, reactivity of furan as 1, 3-diene, Diels Alder reaction (one example). Preparation of Furan, Thiophene and Pyrrole from 1, 4 dicarbonyl compounds only. Paul- knorr synthesis, structure of pyridine, basicity – aromaticity- comparison with pyrrole- one method of preparation and properties- reactivity towards nucleophilic substitution reactions- Chichibabin reaction.

Part – C Physical Chemistry

UNIT-IV

1.Chemical Kinetics: Rate of a reaction, factors influencing the rate of a reaction-concentration, temperature, light and catalyst. Definition of order and molecularity. Derivation of rate constants for first, second, third and zero order reactions and examples. Derivation for time of half change. Methods to determine the order of reactions. Effect of temperature on rate of reaction. Arrhenius equation, concept of activation energy.

2. Photochemistry: Differences between thermal and photochemical processes. Laws of photochemistry- Grothus – Draper's law and Stark-Einstein's law of photochemical equivalence. Quantum yield. Photochemical hydrogen – chlorine, hydrogen – bromine reactions. Qualitative description of fluorescence, phosphorescence, Photosensitised reactions- Energy transfer processes (simple example).

III BSC V SEMESTER CHEMISTRY PAPER -VI SYLLABUS 2020-21
TITLE: INORGANIC, ORGANIC & PHYSICAL CHEMISTRY

UNIT-I

1.Reactivity of metal complexes: Labile and inert complexes, ligand substitution reactions-SN^1 and SN^2.Substitution reactions of square planar complexes-Trans effect and applications of Tran's effect.

2.Bioinorganic Chemistry: Essential elements, Biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn, and Cl^{-1}. Metalloporphyrins with emphasis on hemoglobin-structure and function. Chlorophyll -structure and role in photosynthesis.

ORGANIC CHEMISTRY

UNIT-II

1.Carbohydrates: Introduction-Classification and nomenclature – classification into mono, oligo and polysaccharides into pentoses, hexoses etc. into aldoses and ketoses. Mono saccharides. All discussions to be confined to (+) glucose as an example aldohexose and (-) fructose as example of ketohexoses. Chemical properties and structural elucidation. Evidences for straight chain penta hydroxy aldehyde structure (Acetylation, reduction to n-hexane, cyanohydrin formation, reduction of Tollen's and Fehling's reagents and oxidation to gluconic and saccharic acids). Number of optically active isomers possible for the structure, configuration of glucose based on D – glyceraldehydes as primary standard (No proof for configuration is required). Evidence for cyclic structure of glucose (some negative aldehyde tests and mutarotation). Cyclic structure of Glucose: Proposition of cyclic structure (pyranose structure, anomeric carbon and anomers). Proof for the ring size (methylation, hydrolysis and oxidation reactions). Different ways of writing pyranose structure (Haworth formula and chain conformational formula). Structure of fructose. Evidence of 2-keto hexose structure (formation of Penta acetate, formation of cyanohydrin, its hydrolysis and reduction by HI to give 2-carboxy-n-hexane) same osazone formation from glucose and fructose, Hydrogen bonding in osazones, cyclic structure for fructose (Furanose-structure and Haworth formula). Interconversion of monosaccharides: aldopentose to aldohexose e.g. Arabinose to D-glucose, D-mannose. (Kiliani-Fischer method). Epimers, Epimerisation – Lobry De Bruynvan Ekenstein rearrangement – Aldohexose-Aldopentose e.g. D-glucose to D-Arabinose by Ruff's degradation. Aldohexose (+) glucose to Ketohexose (-) Fructose and Ketohexose (Fructose) to Aldohexose (Glucose).

UNIT-III

2.Amino acids and Proteins Introduction: Definition of amino acids, classification of amino acids into alpha beta and gamma amino acids. Natural and essential amino acids – definition and examples, classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: general methods of synthesis of alpha amino acids (specific examples-glycine, alanine, valine and leucine) by following methods: (a) From halogenated carboxylic acids (b) Malonic ester synthesis (c) Strecker's synthesis. Physical properties: Optical activity of naturally occurring amino acids: L-Configuration irrespective of sign rotation, zwitter ion structure salt like character solubility, melting points amphoteric character, definition of isoelectric point. Chemical properties: General reactions due to amino and carboxyl groups – lactams from gamma and delta amino acids by heating peptide bond (amide linkage).

PHYSICAL CHEMISTRY

UNIT-IV

Thermodynamics I: The first law of thermodynamics – statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule Thomson effect – Joule-Thomson coefficient. Calculation of W for the expansion of perfect gas under isothermal and adiabatic conditions for reversible process. State function. Temperature dependence of enthalpy of formation – Kirchoff's equation.

UNIT-V

Thermodynamics II: Second law of Thermodynamics: different statements of the law. Carnot's cycle and its efficiency, Carnot's Theorem. Concept of entropy, entropy as a state function, entropy changes in reversible, and irreversible processes. Entropy changes in spontaneous and equilibrium processes.

III BSC VI SEMESTER CHEMISTRY ELECTIVE PAPER-VII A SYLLABUS 2020-21
TITLE: ANALYTICAL METHODS IN CHEMISTRY

No. of h/w: 3

UNIT-I **10 h**

Quantitative analysis: a) Importance in various fields of science, steps involved in chemical analysis**.** Principles of volumetric analysis :. Theories of acid-base, redox, complexometric, iodometric and precipitation titrations - choice of indicators for these titrations.
b) Principles of gravimetric analysis: precipitation, coagulation, peptization, coprecipitation, post precipitation, digestion, filtration and washing of precipitate, drying and ignition.

UNIT-II **7 h**

Treatment of analytical data: Types of errors, significant figures and its importance, accuracy - methods of expressing accuracy, error analysis and minimization of errors, precision - methods of expressing precision, standard deviation and confidence limit.

UNIT-III **8 h**

Separation techniques in chemical analysis: Introduction, principle, techniques, factors affecting solvent extraction, Batch extraction, Continuous extraction and counter current extraction. Synergism., Application - Determination of Iron (III). **Ion exchange:** Introduction, action of ion exchange resins, separation of inorganic mixtuers, Applications, Solvent extraction: Principle and process.

UNIT-IV **10 h**

Chromatography: Classification of chromatography methods, principles of differential migration Adsorption phenomenon, Nature of adsorbents, solvent systems, Rf values, factors effecting Rf Values. **Paper Chromatography:** Principles, Rf values, experimental procedures, choice of paper and solvent systems, developments of chromatogram - ascending, descending and radial. Two dimensional chromatography - applications.

UNIT -V **10 h**

Thin layer Chromatography (TLC): Advantages - Principles, factors effecting Rf values - Experimental procedures - Adsorbents and solvents - Preparation of plates - Development of the chromatogram - Detection of the spots – Applications - Column Chromatography: Principles - experimental procedures - Stationary and mobile Phases - Separation technique – Applications.
HPLC : Basic principles and applications.

Reference Books VIIA

1. Analytical Chemistry by Skoog and Miller
2. A textbook of qualitative inorganic analysis by A.I. Vogel
3. Nanochemistry by Geoffrey Ozin and Andre Arsenault
4. Stereochemistry by D. Nasipuri
5. Organic Chemistry by Clayden

III BSC VI SEMESTER CHEMISTRY PAPER-VIII A-1 SYLLABUS 2020-21
TITLE: POLYMER CHEMISTRY (Cluster Elective)

No. of h/w : 3

UNIT-I 12 h

Introduction of polymers:

Basic definitions, degree of polymerization ,classification of polymers - Natural and Synthetic polymers, Organic and Inorganic polymers, Thermoplastic and Thermosetting polymers, Plastics, Elastomers, Fibres and Resins, Linear, Branched and Cross Linked polymers, Addition polymers and Condensation Polymers, mechanism of polymerization. Free radical, ionic and Zeigler – Natta polymerization.

UNIT-II 10 h

Techniques of Polymerization: Bulk polymerization , solution polymerization, suspension and emulsion polymerization. Molecular weights of polymers: Number average and weight average molecular weights. Determination of molecular weight of polymers by Viscometry, Osmometry and light scattering methods.

UNIT-III 6 h

Kinetics of Free radical polymerization, Glass Transition temperature (Tg) and Determination of Tg: Free volume theory, WLF equation, factors affecting glass transition temperature (Tg).

UNIT-IV 9 h

Polymer additives: Introduction to plastic additives – fillers, Plasticizers and Softeners , Lubricants and Flow Promoters, Anti aging additives , Flame Retardants , Colourants , Blowing agents , Cross linking agents ,Photo stabilizers , Nucleating agents.

UNIT-V 8 h

Polymers and their applications: Preparation and industrial applications of Polyethylene, Polyvinyl chloride, Teflon, Terelene, Polyacrylonitrile, Nylon 6.6 and silicones.

III BSC VI SEMESTER CHEMISTRY PAPER-VIII A-2 SYLLABUS 2020-21
TITLE: INSTRUMENTAL METHODS OF ANALYSIS (Cluster Elective)

No. of h/w : 3

UNIT – I

Introduction to spectroscopic methods of analysis: 4 h

Recap of the spectroscopic methods covered in detail in the core chemistry syllabus:Treatment of analytical data, including error analysis. Classification of analytical methods and the types of instrumental methods. Consideration of electromagnetic radiation.

UNIT – II

Molecular spectroscopy: 8 h

Infrared spectroscopy:Interactions with molecules: absorption and scattering. Means of excitation (light sources),separation of spectrum (wavelength dispersion, time resolution), detection of the signal (heat,differential detection), interpretation of spectrum (qualitative, mixtures, resolution), advantages ofFourier Transform (FTIR). Quality assurance and quality control (briefly).

UNIT – III 10 h

UV-Visible/ Near IR – emission, absorption, and fluorescence. Excitation sources (lasers, time resolution), wavelength dispersion (gratings, prisms, interference filters, laser, placement of sample relative to dispersion, resolution), Detection of signal (photocells, photomultipliers, diode arrays, sensitivity and S/N), Single and Double Beam instruments, Interpretation (quantification, mixtures, absorption vs. fluorescence).

UNIT – IV

Separation techniques 8 h

Chromatography: Gas chromatography, liquid chromatography, supercritical fluids,Importance of column technology (packing, capillaries), Separation based on increasingnumber of factors (volatility, solubility, interactions with stationary phase, size, electricalfield), Detection: simple vs. specific (gas and liquid), Detection as a means of further analysis (use of tags and coupling to IR and MS), Electrophoresis (plates and capillary)

Mass spectroscopy:8h. Making the gaseous molecule into an ion (electron impact, chemical ionization), Making liquids and solids into ions (electrospray, electrical discharge, laser desorption, fast atom bombardment), Separation of ions on basis of mass to charge ratio,Magnetic, Time of flight, Electric quadrupole. Resolution, time and multiple separations, Detection and interpretation (how this is linked to excitation).

UNIT – V

Elemental analysis: 10 h

Mass spectrometry (electrical discharges): Atomic spectroscopy: Atomic absorption, Atomic emission, and Atomic fluorescence. Excitation and getting sample into gas phase (flames, electrical discharges, plasmas),Wavelength separation and resolution (dependence on technique), Detection of radiation (simultaneous/scanning, signal noise), Interpretation (errors due to molecular and ionic species, matrix effects, other interferences).

III BSC VI SEMESTER CHEMISTRY PAPER-VIII A-3 SYLLABUS 2020-21
TITLE: PHARMACEUTICAL AND MEDICINAL CHEMISTRY (Cluster Elective)

No. of h/w : 3

UNIT-I : 8 h

Pharmaceutical chemistry Terminology: Pharmacy, Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics (ADME, Receptors - brief treartment) Metabolites and Anti metabolites.

UNIT-II

Drugs: 8 h

Nomenclature: Chemical name, Generic name and trade names with examples, Classification: Classification based on structures and therapeutic activity with one example each, Administration of drugs.

UNIT-III

Synthesis and therapeutic activity of the compounds: 12 h

a. **Chemotherapeutic Drugs**

l. Sulphadrugs(Sulphamethoxazole) 2. Antibiotics - β-Lactam Antibiotics, Macrolide Antibiotics, 3. Anti malarial Drugs(chloroquine)

b. **Psycho therapeutic Drugs:**

1. Anti pyretics(Paracetamol) 2. Hypnotics 3. Tranquilizers(Diazepam)
4. Levodopa

UNIT-IV

Pharmacodynamic Drugs: 8 h

1. Antiasthma Drugs (Solbutamol) 2. Antianginals (Glycerol Trinitrate)
3. Diuretics(Frusemide)

UNIT-V

HIV-AIDS: 9 h

Immunity - CD-4cells, CD-8cells, Retro virus, Replication in human body, Investigation available, prevention of AIDS, Drugs available - examples with structures: PIS: Indivanir (crixivan), Nelfinavir (Viracept).

REFERENCE BOOKS

1. Medicinal Chemistry by Dr. B.V.Ramana
2. Synthetic Drugs by O.D.Tyagi & M.Yadav
3. Medicinal Chemistry by Ashutoshkar
4. Medicinal Chemistry by P.Parimoo
5. Pharmacology & Pharmacotherapeutics R.S Satoshkar & S.D.Bhandenkar
6. Medicinal Chemistry by Kadametal P-I & P-II
7. European Pharmacopoeia

SYLLABUS FOR VI SEMESTER

CHEMISTRY LABORATORY COURSE – VIII A1

No. of h/w : 2

1. Preparation of Aspirin
2. Preparation of Paracetamol
3. Preparation of Acetanilide
4. Preparation of Barbituric Acid
5. Preparation of Phenylazo β-naphthol

SYLLABUS FOR VI SEMESTER
CHEMISTRY LABORATORY COURSE – VIII A2

No. of h/w : 2

1. Green procedure for organic qualitative analysis: Detection of N, S and halogens
2. Acetylation of 1_0 amine by green method: Preparation of acetanilide
3. Rearrangement reaction in green conditions: Benzil-Benzilic acid rearrangement
4. Electrophilic aromatic substitution reaction: Nitration of phenol
5. Radical coupling reaction: Preparation of 1,1-bis -2-naphthol
6. Green oxidation reaction: Synthesis of adipic acid
7. Green procedure for Diels Alder reaction between furan and maleic anhydride

SYLLABUS FOR VI SEMESTER
CHEMISTRY LABORATORY COURSE – VIII A3

PROJECT WORK

DEPARTMENT OF BOTANY

The Boards of Studies meeting in Botany was held on Saturday 07.03.2020 at 2.00 p.m. in the Department of Botany.

Members:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.T.Padmavathi, Adikavi Nannaya University, Rajamahendravaram.

External experts:

3. Dr.B.Siva Kumari, Andhra Loyola College, Vijayawada

Faculty:

4. Dr.Mrs. BBRG. Vijaya Lakshmi.
5. Mrs.G.Rani
6. Ms.B.Asha Latha

Students:

7. N.Bhagavathi Devi, III B.Sc.BZC
8. B.Renuka Sai, II B.Sc B.Z.C

Resolutions:

1. It was resolved to follow Adikavi Nannaya University CBCS theory and practical revised syllabus of Botany Papers I, II, III, IV, V, VI, VII, VIIIA1, VIIIA2 and VIIIA3 respectively without any changes for the academic year 2020-2021 as the syllabus is updated with 20% skill oriented topics which provides entrepreneur opportunities and it is relevant to the needs of the society and also approved in '2019-20 Academic Council'.

DEPARTMENT OF BOTANY

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Microbial Diversity, Algae & Fungi
	II	Paper II	Diversity of Archaegoniatae & Plant Anatomy
II Year	III	Paper III	Plant Taxonomy and Embryology
	IV	Paper IV	Plant Physiology and Metabolism
III Year	V	Paper V	Cell biology and Genetics
		Paper VI	Medicinal Botany and Plant Ecology
	VI	Paper VII	Economic Botany and Plant Biotechnology (Elective-1)
		Paper VIII A1	Nursery and Gardening (Cluster Elective)
		Paper VIII A2	Organic farming and Sustainable Agriculture. (Cluster Elective)
		Paper VIII A3	Self study - Crop Cultivation Techniques & Economic Development/Project/Intern ship/ MOOC'S (Cluster Elective)

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I BSC I SEMESTER PAPER I BOTANY SYLLABUS 2020-21
TITLE: MICROBIAL DIVERSITY, ALGAE AND FUNGI

UNIT-I

Microbial Diversity: Origin of life: Introduction, Spontaneous, Biogenesis, Pasteur experiments, Germ theory of disease. **Microorganisms:** Introduction, Classification (R.H.Whittaker's five kingdom concept, Carl Woese's–Domain system). **Special groups of Bacteria (Brief account):** Archaebacteria, Mycoplasma, Chlamydia, Actinomycetes, Rickettsias and Cyanobacteria.

UNIT-II

Microbial Diversity: Bacteria-Introduction, general characteristics, cell structure and nutrition. **Reproduction:** *Asexual*–Binary fission, endospores, *Sexual*–Transformation, Conjugation, Transduction. Economic importance of Bacteria.

UNIT-III

Microbial Diversity: Viruses-Introduction, T4 phage structure and replication (Lytic and Lysogenic), Structure of (TMV, Viroids and Prions). **Plant diseases caused by Viruses:** Symptoms, transmission and control measures of-Tobacco Mosaic Virus, Bhendi vein clearing, Papaya leaf-curl diseases.

UNIT-IV

Algae: General account: Introduction, Thallus organization and Reproduction. Fritsch classification (up to classes) and Economic importance. **Structure, reproduction and life history:** Oedogonium, Ectocarpus and Polysiphonia.

UNIT-V

Fungi: General account: Introduction, Mycelium structure, Reproduction and Classification (outlines of Ainsworth). **Structure, reproduction and life history:** Albugo (Mastigomycota), Penicillium (Ascomycota) and Puccinia (Basidiomycota). **Lichens:** Introduction, External morphology– Crustose, Foliose and Frutcose Lichens, internal structure of thallus, External and internal structure of Apothecium, Economic importance.

Practical

Laboratory Exercises:

1. Knowledge of Equipment used in Microbiology: Spirit lamp, Inoculation loop, Hot-air oven, Autoclave, laminar air flow chamber, Incubator.
2. Preparation of solid and liquid media for culturing of microbes (Demonstration).
3. Study of viruses and bacteria using electron photo micrograph /slides /models: TMV, Bacteriophage, HIV, Cocci, Bacillus, Spirillum bacteria).
4. Gram staining technique (Demonstration).
5. Study of Plant disease symptoms caused by Bacteria (Citrus canker, leaf blight of rice, Angular leaf spot of Cotton) and viruses (TMV, Bhendi Vein clearing and Leaf curl of Papaya), Fungi (Late blight of potato, Red rot of Sugarcane and Paddy blast).
6. Vegetative and reproductive structures of the following materials/slides/mounts /specimens: **Cyanobacteria:** Nostoc and Scytonema. **Algae:** Oedogonium, Ectocarpus, Polysiphonia, **Fungi:** Penicillium and Puccinia.
7. **Lichens:** Morphology of Crustose, Foliose, Fruticose, TS of Thallus, TS of Apothecium
8. Section cutting of diseased material infected by Fungi: Albugo.
9. Field Visit to microbiology research institutes and report submission.

I BSC II SEMESTER – PAPER II BOTANY SYLLABUS 2020-21
TITLE: DIVERSITY OF ARCHAEGONIATE & PLANT ANATOMY

UNIT-I

Bryophyta: **General account:** Introduction, Characteristics, Reproduction and Classification (up to classes). **Structure, reproduction and Life history:** *Marchantia* and *Anthoceros*. Evolution of Sporophyte in Bryophytes.

UNIT-II

Pteridophyta: General account: Introduction, Characteristics, Reproduction and Classification (up to classes). **Structure, reproduction and Life history:** *Lycopodium* and *Marsilea*. Heterospory and Seed habit. Stelar Evolution in Pteridophytes

UNIT-III

Gymnosperms: General account: Introduction, Characteristics, Reproduction and Classification (up to classes). Morphology, Anatomy, Reproduction and Life history: Pinus and Gnetum. (Gnetum:Assignment/Seminar/Group discussion/Quiz).

UNIT-IV

Anatomy: Tissues and Tissue systems. **Meristems:** Introduction, *Shoot apical meristems* – Apical Cell theory, Histogen theory, Tunica- Corpus theory, *Root apical meristems* - Apical Cell theory, Histogen theory, Korper-Kappe theory, Quiscent centre theory. **Tissues:** *Simple*– Parenchyma, Collenchyma and Sclerenchyma. *Complex*–Xylem and Phloem. *Secretory*– Schizogenous, Lysogenous and Hydathodes. **Tissue systems:** Epidermal, Ground and Vascular.

UNIT-V

Stem secondary growth: Anomalous secondary growth in Bignonia, Boerhaavia and Dracaena. Botanical name, Family and Economic importance of timber yielding plants: Teak wood, Rose wood, Red sanders and Neem wood.

Practical

Laboratory Exercises:

1. Vegetative and reproductive structures of following materials/slides/mounts /specimens: *Marchantia, Anthoceros. Lycopodium, Marselia. Pinus*
2. **Section cuttings:** Lycopodium stem TS. Marselia Rhiome TS. Marselia petiole TS. Pinus needle TS.Pinus stem.
3. Demonstration of double staining technique.
4. Tissue organization in root and shoot apices using permanent slides.
5. Section cuttings of Anomalous secondary structures: Bignonia stem TS.Boerhaavia stem TS.Dracaena stem TS.
6. Anatomical study of wood in T.S., T.L.S. and R.L.S using permanent slides.
7. Field visits to any pine forest.

II BSC III SEMESTER PAPER III BOTANY SYLLABUS 2020-21
TITLE: PLANT TAXONOMY AND EMBRYOLOGY

UNIT–I :

Plant Taxonomy: Introduction, Aims of taxonomy, Aspects of systematic–Identification, nomenclature and classification.**Types of classification:** Artificial, Natural and Phylogenetic. **Systems of classification:** Bentham & Hooker's system of classification, Merits and demerits. Engler & Prantl system of classification, Merits and demerits (Out lines only). **Botanical nomenclature:** Introduction, ICBN (International code of Botanical Nomenclature) - Principles, Rules (ranks of taxa, nomenclature of taxa, typification, principles of priority, valid publication, author citation, rejection of names).

UNIT–II

Plant Taxonomy: Phylogeny: Origin and Evolution of Angiosperms. **Herbarium:** Introduction, Herbarium techniques (field visit, collection, pressing, drying, mounting, labeling, handling, organization) and Applications of herbarium. **Systematic study and Economic importance of following families-**Annonaceae, Brassicaceae, Rutaceae, Curcurbitaceae and Apiaceae.

UNIT–III

Plant Taxonomy: Systematic study and economic importance of plants belonging to the following families - Asteraceae, Asclepiadaceae, Lamiaceae, Euphobiaceae and Poaceae.

UNIT–IV

Embryology: Introduction**,** Anther structure, **Microsporogenesis:** Development of male gametophyte. Ovule structure and types; **Megasporogenesis**: Development of Monosporic, Bisporic and Tetrasporic types (Adoxa, Drusa and Peperomia) of Embryosacs, Structure of mature Embryo sac. Pollination and Fertilization (out lines).

UNIT–V

Embryology: Endosperm: Development, Types and Haustoria. **Embryo:** Dicot and Monocot embryo development. **Polyembryony:** Types and significance.

Practical

Laboratory Exercises:

1. Systemiatic study of plants belonging to the following families: Annonaceae – *Annona squamosa,* Rutaceae–*Murraya paniculata,* Cucurbitaceae–*Coccinia indica,* Asteraceae – *Tridax procumbens,* Asclepiadaceae– *Calotropis gigantia,* Lamiaceae – *Osmium sanctum.*
2. Derivation of following plants up to their family level: Brassicaceae, b. Apiaceae, c. Euphorbiaceae, d.Poaceae.
3. Demonstration of herbarium techniques: Field visit, Collection, Pressing, Drying, Mounting, Labeling, Handling and Organization.
4. **Study of ovule types:** Orthotropus, Anatropus and Campylotropus.
5. Embryosac structures using permanent slides / Photographs / models: 2 nucleate, 4 nucleate and 8 nucleate.
6. **Structure of endosperm:** Nuclear and cellular.
7. Developmental stages of Dicot, Monocot embryos using permanent slides/Photos/models.
8. Preparation and submission of 25 herbarium specimens for evaluation during the practical Examination.
9. Field visits, Study of local flora and submission of field note book.

II BSC IV SEMESTER PAPER IV BOTANY SYLLABUS 2020-21
TITLE: PLANT PHYSIOLOGY AND METABOLISM

UNIT – I

Plant Physiology: Plant–Water relations: Importance of water to plant life, Diffusion, imbibitions, osmosis and plasmolysis; **Ascent of sap:**Introduction, Mechanism of ascent of sap-Pulsation theory (J.C. Bose), Cohesion tension theory (Dixon and Jolly). **Transpiration:**Definition, Transpiration types, Structure of stomata, Mechanism of closing and opening of stomata, Starch sugar hypothesis and steward's hypothesis, Antitranspirants.

UNIT – II

Plant Physiology: Mineral Nutrition: Introduction, Essential macro and micro mineral nutrients, their role in plant Metabolism and Deficiency symptoms. (Assignment/Quiz) **Mineral ion uptake:** Passive transport–Diffusion, Ion exchange, Donnan equilibrium, Active transport–Carrier concept. **Enzymes:** Introduction, Structure and properties of enzymes, Mechanism of enzyme action, Factors regulating enzyme action.

UNIT – III

Plant Metabolism: Photosynthesis: Definition, Structure of Chloroplast, Photosynthetic Pigments, Quantosomes, Hill Reaction. **Mechanism of photosynthesis:** *Light Phase*-Introduction, Emerson Enhancement phenomenon, Cyclic and Non-Cyclic Photophosphorylation. *Dark phase*-C3, C4 and CAM path ways, Photorespiration (C_2 Cycle), significance. **Translocation of organic solutes:** Introduction, Source–Sink relationships, Mechanism of Phloem Transport-Munch's Mass flow Hypothesis.

UNIT – IV

Plant Metabolism: Respirtion: Introduction, Structure of Mitochondria, Types of Respiration-Aerobic Anaerobic, Glycolysis, Krebs Cycle, Electron Transport System. **Nitrogen metabolism**: Introduction, Biological nitrogen fixation in rhizobium, Protein synthesis (out lines)–Transcription and Translation. **Lipid Metabolism:** Introduction, Types of lipids, Beta-oxidation.

UNIT – V

Plant Physiology: Phytohormones: Definition and importance. **Physiological effects of phytohormones:** Auxins, Gibberellins, Cytokinins, ABA and Ethylene. **Physiology of flowering:** Photoperiodism, Role of phytochrome in flowering, Vernalization. Physiology of senescence and ageing.

Practical

Laboratory Exercises:

1. Separation of chloroplast pigments using paper chromatography technique.
2. Determination of osmotic potential of plant cell sap by plasmolytic method using leaves of Rhoeo / Tradescantia.
3. Determination of rate of transpiration by cobalt chloride method.
4. Effect of Temperature on membrane permeability by colorimetric method.
5. Evolution of oxygen during photosynthesis by '*Hydrilla* funnel' experiment.
6. Study the effect of amylase enzyme on starch.
7. Demonstration of ascent of sap/Transpiration pull.
8. Demonstration of osmosis by 'egg membrane' experiment.
9. Demonstration of imbibitions.
10. Demonstration of phototropism.
11. Demonstration of stomatal frequency using leaf epidermal peelings.
12. Demonstration of Dicot and Monocot stomata Structure.

III BSC V SEMESTER PAPER-V BOTANY SYLLABUS 2020-21
TITLE: CELL BIOLOGY AND GENETICS

UNIT–I

Cell Biology: Introduction, Prokaryotic and Eukaryotic cells. **Plant cell wall:** Introduction, Ultra structure and Functions. **Plasma membrane:** Introduction, Structure, Theories and Functions.

UNIT–II

Cell Biology: Mitochondria: Structure, Functions, Mitochondrial DNA. **Chloroplast:** Structure, Functions, Chloroplast DNA. **Nucleus:** Structure and Functions. **Cell division:** Mitosis, Meiosis and their Significance.

UNIT–III

Cell Biology: Chromosome: Introduction, Structure, Organization of DNA in Chromosome (Nucleosome Model), Euchromatin, Heterochromatin. **DNA:** Introduction, Structure (Watson and Crick), DNA Types and Functions, DNA Replication (Semi Conservative). **RNA:** Introduction, Types and Functions

UNIT–IV

Genetics: Mendelien Inheritance: Introduction, Law of Dominance, Law of Segregation, Law of Independent Assortment, Back cross and Test cross. Chromosome Theory of Inheritance. **Linkage:** Introduction, Complete & Incomplete linkage, Factors Effecting Linkage and Significance.

UNIT–V

Genetics: Crossing Over: Introduction, Mechanism of Crossing over, Theories – Johnson Hypothesis, Torsion Hypothesis, Breakage and Exchange Theory, Types – Single, Double and Multiple Crossing over and Significance. **Mutations:** Introduction, Types of Mutations, Physical & Chemical Mutagens, Gene Mutations.

Practical

Laboratory Exercises:

1. Study of Plant Cell Structure through Temporary Mounts.
2. Study of Plant Cell Organelles through Photomicrographs.
3. Study of Various Stages of Mitosis Using Cytological Preparation of Onion Root Tips.
4. Stages of Meiosis: Permanent Slides/Photographs.
5. Numerical Problems Solving Mendel 'Laws of Inheritance' – Monohybrid & Dihybrid crosses.
6. Chromosome Mapping Using 3 Point Test Cross Data.

III BSC V SEMESTER PAPER-VI BOTANY SYLLABUS 2020-21
TITLE: MEDICINAL BOTANY AND PLANT ECOLOGY

UNIT–I:

Medicinal Botany: History, Scope and Importance of Medicinal Plants. **Ayurveda:** Introduction, Panchamahabuthas, Sapthadaathus, Tridoshas, Plants Used in Ayurvedic Treatment. **Homeopathy:** Introduction, Laws of Homeopathy, Diagnosis and Treatment. **Naturopathy:** Introduction, Concepts, Treatment.

UNIT–II:

Medicinal Botany: Role of Medicinal Plants in Primary Health Care: Botanical Name, Family, Active Principle and Medicinal Importance of Following Plants - *Ocimum sanctum, Aloe vera*, *Curcuma longa*, *Aerva lanata and Eclipta alba.* **Role of Medicinal Plants in Modern medicine:** Botanical Name, Family, Chemical constituent and Medicinal Uses of following plants - *Rawolfia serpentine*, *Gymnema sylvestris, Centella asiatica, Phyllanthus emblica, Catheranthus roseus.*

UNIT–III:

Medicinal Botany: Important Medicinal plants: History, Biological source, Morphology, Cultivation, collection, Preservation, Active principle, Administration and Medicinal uses of following plants - Cinchona officinalis, Strychnos nuxvomica, Andrographis paniculata. **Important medicinal products:** Introduction, Properties, Biological source, Uses of following products - Alkaloids, Steroids, Gums, Resins, Latex. **Conservation:** Introduction, Objectives, Rare species, Endemic and Endangered medicinal plants, Conservation methods.

UNIT–IV:

Plant Ecology: Introduction, Components of ecosystems, Food chains, Food webs. **Ecological pyramids:** Number, Biomass and Energy pyramids. **Ecological Succession**: Introduction, Hydrosere and Xerosere. **Population Ecology:** Natality, Mortality, Growth curves, Ecotypes, Ecads.

UNIT–V

Plant Ecology: Community ecology: Frequency, Density, Cover, Life forms, Biological spectrum. **Ecological factors:** light, temperature, Edaphic and Biotic factors. **Biogeochemical cycles**: Water and Nitrogen.

Practical

Laboratory Exercises:

1. Botanical name, family, morphology of useful part and medicinal uses of following medicinal plants. *Rawolfia serpentine*, *Gymnema sylvestris, Centella asiatica, Phyllanthus emblica, Catheranthus roseus, Ocimum sanctum*, *Aloe vera*, *Curcuma longa*, *Aerva lanata, Eclipta alba, Cinchona officinalis, Strychnos nuxvomica*, *Andrographis paniculata.*
2. **Study of medicinal products:** Alkaloids, Steroids, Gums, Resins, Latex.
3. Collection and preparation of herbarium of 15 medicinal plants.Visit to Medicinal garden.
4. **Study of instruments:** Anemometer, light meter, Hygrometer, Wet and dry bulb thermometer.
5. Determination of soil p^H
6. Study of 5 endemic and 5 endangered plants with Photographs.
7. Visit to Forest ecosystem.

III BSC VI SEMESTER PAPER-VII (ELECTIVE) BOTANY SYLLABUS 2020-21
TITLE: ECONOMIC BOTANY AND PLANT BIOTECHNOLOGY

UNIT-I

Economic Botany: Introduction and Scope. Vavilov's centers of crop plants. Morphology and Nutritive value of following crops-Cereals: Rice and wheat. Millets: Jowar and Bajra.

UNIT-II

Economic Botany: Botanical name, family, part used and economic importance of following- Legumes: Red gram, Green gram, Black gram, Bengal gram. **Spices:** Cloves, Cardamom, Pepper, Cinnamomum. **Oils:** Ground nut oil, Sun flower oil, Gingili oil, Palm oil. **Beverages:** Tea and Coffee.

UNIT-III

Economic Botany: Coconut plant: General description, Extraction of oil, Preparation of copra and coir and Economic importance. **Banana plant:** General description, Propagation, Harvesting, Curing, arketing and Economic importance of plant parts.

UNIT-IV

Plant Biotechnology: Introduction, History, Scope and Importance. **Gene transfer techniques in plants:** Introduction, Agrobacterium mediated gene transfer and DNA mediated gene transfer techniques. **Applications of Biotechnology in crop improvement:** Viral resistant, bacterial resistant, Fungal resistant, cold resistant and Drought resistant plants, Golden Rice.

UNIT-V

Plant Biotechnology: Tissue culture techniques: Introduction, Scope and Totipotency. Sterilization techniques, MS medium, Inoculation, Incubation, Regeneration of plants from callus (organogenesis, Embryogenesis), Transfer of plantlets to fields. **Applications of tissue culture:** Micropropagation, Germ plasm storage, Embryo rescue, Somaclonal variation, Haploid plants, Artificial seeds, Production of secondary metabolites, Somatic hybrids and Transgenic plants.

Practical

Laboratory Exercises:

1. Collection, identification and economic importance of following products: Rice. Wheat. Red gram. Green gram. Black gram. Bengal gram. Cloves. Cardamom. Pepper. Cinnamomum. Ground nut oil. Sun flower oil. Gingili oil. Palm oil. Tea. Coffee.
2. Visits to tea, rice and oil processing units/ Research centres.
3. Study of gene transfer techniques through photographs: Agro bacterium mediated gene transfer technique. Direct gene transfer technique. Electro poration, Micro injection, Micro projectile bombardment.
4. Study of Golden Rice.
5. Instruments used in tissue culture: Autoclave, Hot air oven, Incubator, Laminar flow chamber.
6. Visits to tea, rice/oil processing units/Biotechnology and tissue culture Labs.

III BSC VI SEMESTER PAPER-VIII A1(Cluster Elective)BOTANY SYLLABUS 2020-21
TITLE: NURSERY AND GARDENING

UNIT-I

Nursery: Introduction, Objectives and Scope. Structural construction of nursery. Raising seedlings and Transplantation.

UNIT-II

Nursery: Vegetative propagation: Introduction, Importance and Scope. Grafting technique: Introduction, types – Detached Scion grafting and bud grafting. Layering: Introduction, Natural and Artificial layering.

UNIT-III

Gardening: Introduction, Objectives and Scope. Features of garden-Fencing, Lawn, Flower beds, Boarders, Steps. Home gardening: Guidelines, Characters, Designs and Benefits.

UNIT-IV

Gardening: Famous gardens of India: Ooty, Bangaluru, Kolkota and Darjeeling. Bonsai: Introduction, Principles, Cultivation and Common styles of Bonsai. Land scaping: Goals, Catogeries, Designs, Benefits, Computer applications in landscaping.

UNIT-V

Gardening: Cultivation, Harvesting and Packaging of important cut flowers: Carnation, Chrysanthemum, Anthuriums, Gladiolus, Marigold, Rose, Lilium and jasmine. Hydroponic culture technique. Terrace garden technique.

Practical

Laboratory Exercises:

1. Seedling raising and transplantation.
2. Vegetable grafting techniques
3. Grafting techniques: Mango, Sapota and Rose.
4. Layering techniques: Crotons, Ixora and Guava.
5. Demonstration of Bonsai cultivation.
6. Terrace garden technique.
7. Hydroponics technique.
8. Flower bouquet preparations.
9. Visit to Horticulture University.

III BSC VI SEMESTER PAPER-VIII A2(Cluster Elective)BOTANY SYLLABUS 2020-21
TITLE: ORGANIC FARMING AND SUSTAINABLE AGRICULTURE

UNIT-I

Organic farming: Introduction, Principles, Benefits, Scope. Agencies and Institutions related to Organic farming. Types of Soil, Soil tillage, Land preparation, Mulching, Planting materials, Seed treatment, Water management.

UNIT-II

Organic farming: Natural organic fertilizers: Introduction, Nadep compost, Compost, Animal manure. **Artificial organic fertilizers:** Introduction, Ghana Jeevamrutham, Drava jeevamrutham, Pancha gavva. Bio-fertilizers: Introduction, Azolla, Symbiotic Bacteria, Non-symbiotic Bacteria, and Mychorrhiza.

UNIT-III

Organic farming: Bio-pesticides: Introduction, Vavili aaku decoction, Neem decoction and Datura decoction. Policies and Incentives of organic production. Farm inspection crop and Certification.

UNIT-IV

Sustainable agriculture: Cereals: Maize. Millets: Korralu (Fox tail) and Ragulu. Pulses: Soya beans, Ulavalu (Horse gram).

UNIT-V

Sustainable agriculture: Organic vegetables: Introduction, '36X36 model' organic kitchen garden. **Organic fruits:** Orange, Water melon, Guava, Lemon. Sericulture and Mushroom cultivation Techniques.

Practical

Laboratory Exercises:

1. Construction of Compost manure pit.
2. Preparation of Ghana Jeevamrutham, Drava Jeevamrutham and Pancha gavva.
3. Cultivation of Azolla.
4. Study of Symbiotic Bacteria, Non-symbiotic Bacteria, and Mychorrhiza with the help of photographs/specimens.
5. Preparation of Vavili aaku decoction, Neem decoction and Datura decoction.
6. Field visits to organic farming units.
7. Study of nutritional value and preparation of recipes: Maize, Korralu (Fox tail) Ragulu, Soya beans and Ulavalu (horse gram)
8. Construction of '36X36 model' Organic kitchen garden.
9. To study the nutritional value and preparation of commercial products: water melon candy, lemon cubes , Guava nectar and orange squash.
10. Field Visits to sericulture and mushroom cultivation Units.

III BSC VI SEMESTER PAPER-VIII A3(Cluster Elective)BOTANY SYLLABUS 2020-21
TITLE: CROP CULTIVATION TECHNIQUES AND ECONOMIC DEVELOPMENT

UNIT-I

Cocoa cultivation: Introduction, Morphology, Climate & Soil types. Plantation & Irrigation management. Harvest & Post Harvest techniques.

UNIT-II

Oil palm cultivation: Introduction, Morphology, Climate & Soil types. Plantation & Irrigation management. Harvest & Post Harvest techniques.

UNIT-III

Sugar cane cultivation: Introduction, Morphology, Climate & Soil types. Plantation & Irrigation management. Harvest & Post Harvest techniques.

UNIT-IV

Mango cultivation: Introduction, Morphology, Climate & Soil types. Plantation & Irrigation management. Harvest & Post Harvest techniques.

UNIT-V

Cashew nut cultivation: Introduction, Morphology, Climate & Soil types. Plantation & Irrigation management. Harvest & Post Harvest techniques.

Practical

Laboratory Exercises:

1. Visit to Cocoa gardens, Pruning, Post harvesting techniques, Modelez India Foods Private Limited, Eluru /Local area
2. Visit to Oil palm research centre, harvesting techniques at Pedavegi / Local area
3. Visit to Sugar factory, observation of sugar processing – Delta sugar, Vijayawada, Andhra sugars, Tanuku / Local area.
4. Visit to Mango gardens, Mango Processing, Nuziveedu / Local area.
5. Visit to Cashew nut gardens, processing of cashew nut, Jangareddygudem / Local area.

Syllabus for Botany Certificate Course: 2020 - 2021

Herbal Therapy

I. Introduction and scope of medicinal plants.

II. Collection and preservation of important medicinal plants.

III. Visit to medicinal important industries and organizations.

IV. Study of the following plants and plant products:

a. Home remedies

1. *Curcuma longa* – Turmeric,
2. *Zingiber* officinale - Ginger
3. *Piper nigrum* - Pepper
4. *Allium sativum* - Garlic
5. *Elettaria cardamomum* - Cardamom
6. *Cinnamomum zeylanicum* - Cinnamon
7. *Cuminum cyminum* - Cumin
8. *Syzygium Aromaticum* –Cloves
9. *Trigonella foenum graecum* – Fenugreek
10. *Ferula asafetida* – Asafoetida

b. Medicinal importance of the following plants

11. *Centella asiatica* – Brahmi
12. *Eclipta alba* – Gunta Galagara
13. *Aloe vera – Kalabanda*
14. *Coriandrum sativum* – Coriander
15. *Mentha arvensis* – Pudina
16. *Ocimum sanctum* –Tulasi
17. *Azadirachta indica* – Neem
18. *Gymnema sylvestris* – Podapatri
19. *Hibiscus rosa sinensis* – Mandara
20. *Murraya koenigii* - Curry leaf

c. Medicinal importance of the following fruits

21. *Annona squamosa* - Custard apple
22. *Carica papaya* - Papaya
23. *Citrus aurantifolia* - Lime
24. *Punica grnatum* - Pomo granite
25. *Phyllanthus emblica* – Amla

DEPARTMENT OF ZOOLOGY

The meeting of the Boards of Studies in Zoology was held on Thursday, 05.03.2020 at 2.00 p.m. in the Zoology Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello., Principal

University Nominee:

2. Sri K.Visweswara Rao, Sir C.R.R. Autonomous College, Eluru

External experts:

3. Dr.V.Sandhya, SCHVPMR Govt. Degree College, Ganapavaram
4. Sri. D.Ganesh, Eco Aqua lab, Eluru

Faculty:

5. Dr.Mrs.R.Indira
6. Dr.Mrs.K.S.V.K.S.Madhavi Rani
7. Mrs.N.L.Prasanna
8. Mrs.N.Nirmala
9. Mrs.M.Jaha Begum
10. Ms.D.Hima Bindu

Students:

11. K.Tripheena, III B.Sc. ZNC
12. A.Rishitha, II B.Sc. BZC

The Board of Studies members revised the I,II and III B,Sc Zoology syllabus Semester wise, model question papers, Add-On Courses, internships, project works, MOOCS, and environmental studies and made the following resolutions.

Resolutions:

- It is resolved to continue the same syllabus without any changes for the I,II and III B,Sc Zoology syllabus for I, II, III, IV, V, VI, VII, VIII papers for the academic year 2020-2021.
- It is resolved to continue 2 Add-On courses – Vermicompost Technology and Public Health for Final years from all disciplines as they are skill based and self employable.
- **Environmental studies: I B.Sc:** It is resolved to continue the same syllabus for the academic year 2020-2021

DEPARTMENT OF ZOOLOGY

PAPER TITLES

	Semester	Paper	Title of the Paper
I B.Sc	I	Paper I	Animal Diversity of Invertebrates
	II	Paper II	Animal Diversity of Vertebrates
II B.Sc	III	Paper III	Cytology , Genetics and Evolution.
	IV	Paper IV	Embryology, Physiology and Ecology.
III B.Sc	V	Paper V	Animal Biotechnology
		Paper VI	Animal Husbandry
	VI	Paper VII	Immunology
		Paper VIII A1	Principles of Aquaculture (Cluster elective)
		Paper VIII A2	Aquaculture Management (Cluster elective)
		Paper VIII A3	Self study course - Clinical Technology
PROJECT WORK			

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I BSC I SEMESTER PAPER I ZOOLOGY SYLLABUS 2020-21
TITLE: ANIMAL DIVERSITY OF INVERTEBRATES

UNIT – I

Brief history, significance of **Diversity of Non Chordates** - **Phylum Protozoa**:- General characters and outline Classification up to classes with Examples: Elphidium- Structure, Life cycle - **Phylum Porifera**:- General characters and outline Classification up to classes with Examples Sycon- Structure, Skeleton, Canal System in Sponges.

UNIT – II

Phylum Coelenterata :- General characters and outline Classification up to classes with Examples Aurelia-Structure, Life cycle, Polymorphism in Coelenterates, Corals and Coral Reef Formation. **Phylum Platyhelminthes**:- General characters and outline Classification up to classes with Examples Fasciola hepatica - Structure, Flame cell, Life cycle. **Phylum Nemathelminthes:-** General characters and outline Classification up to classes with Examples.

UNIT – III

Phylum Annelida :- General characters and outline Classification up to classes with Examples Leech - Structure, Digestive system, Nephridium, Reproductive system, **Vermiculture:** Earthworms Sps, Processing of vermicompost, Economic importance of Vermicompost .

UNIT – IV

Phylum Arthropoda:- General characters and outline Classification up to classes with Examples Prawn (Penaeus)- External characters, Appendages, Respiratory system, Green gland, Ommatidium, Statocyst Peripatus - Structure, Affinities. **Phylum Mollusca**:- General Characters and Outline Classification up to classes with Examples. Pearl formation in Pelecypoda.

UNIT – V

Phylum Echinodermata: General characters and outline Classification up to classes with Examples Water Vascular System of Star Fish. **Hemichordata**: General Characters and Outline Classification up to Classes with Examples; Balanoglossus - Structure and affinities **Nonchordate Larval Forms**: Amphiblastula, Ephyra, Trochophore, Nauplius, Glochidium, Bipinnaria, Tornaria Larva.

Modern Text Book Of Zoology Invertebrates -- R.L. kotpal
A Text Book of Invertebrates. -- Arumugam et.al.,
Economic Zoology- -- Saras Publication.

I B.Sc, Zoology I Semester Practical - I- Animal Diversity Of Invertebrates

3hours / week

Observation of the following slides/specimens/models:

Protozoa: Elphidium, *Entamoeba histolytica*

Porifera: Spongilla, Euspongia, Sycon, Sycon-L.S,T.S,

Coelenterata: Obelia colony,Medusa ,Physalia, Velella,Corallium, Gorgonia, Aurelia, Pennatula.

Platyhelminthes: Planaria, Fasciola hepatica larval stages of Meracidum,Redia,Cercaria, Echinococcus granulosus.

Nematehelminthes: Ascaris Male&Female, Ascaris-T.S,

Annelida: Neries,Heteroneries,Aphrodite,Trochophore larva.

Arthropoda: Nauplius,Mysis,Zoea Larvae,Anopheles,culex, mouth parts (Male&Female). house fly mouth parts. Scorpion, Crab,Prawn,scolopendra, Sacculina,Limulus,Paripatus.

Mollusca: Chiton,Murex,Sepia,Loligo,Octopus,Nautilus,Glochidium Larva.

Echinodermata: Ophiothrix, Echinus,Clypeaster,Cucumaria, Antedon, Asterias,Bipinnaria larva.

Hemichordata : Balanoglossus,Tornaria larva.

- **Demonstration of dissection/dissected/Virtual Dissections**

  Virtual labs: Informative Dissections on four invertebrates-
  Earthworm-Anatomy
  Cray fish- Anatomy
  Squid- Anatomy
  Sea star - Anatomy

Laboratory record work shall be submitted at the time of practical examination.
One species is to be adopted for demonstration compulsorily by the faculty.
Computer aided techniques should be adopted as per UGC guide lines.

An "animal album" containing photographs, cut outs, with appropriate write up about the above mentioned taxa. Different taxa/ topics may be given to different sets of students for this purpose. These need not be repeated as drawings by the album maker.

Suggested manuals

1. Practical Zoology- Invertebrates S.S.Lal
2. Practical Zoology - Invertebrates P.S.Verma
3. Practical Zoology K.P.Kurl

I BSC II SEMESTER PAPER II ZOOLOGY SYLLABUS 2020-21
TITLE: ANIMAL DIVERSITY OF VERTBRATES

UNIT I

Protochordata: Salient Features of Cephalochordata, structure of Branchiostoma Salient Features of Urochordata, Structure and Life- History of Herdmania, Significance of Retrogressive Metamorphosis. General characters of Chordates.

UNIT – II

Cyclostomata: General Characters of Cyclostomes - Comparison of Petromyzon and Myxine. **Pisces:**General Characters of Fishes, Classification Up To Sub-Class Level with Example. Scoliodon: External Features, Digestive system, Respiratory System , Heart, Brain.
Migration in Fishes, Types of Scales, Dipnoi fishes.

UNIT – III

Amphibia: General Characters and Classification of Amphibia up to Order Level. Rana hexadactyla: External Features , Digestive System , Respiratory System , Heart, Brain. Parental Care in Amphibians. **Reptilia:** General Characters and Classification of Reptilia up to Order Level**. Calotes**: External Features, Digestive System , Respiratory System , Heart, Brain.

UNIT – IV

Aves: General Characters and Classification of Aves Up To subclass Level With Examples. Brief account of Archaeopteryx Columba livia : External Features , Digestive System , Respiratory System , Heart, Brain. Migration in Birds, Flight Adaptations in Birds.

UNIT – V

Mammalia: General Characters and Classification of Mammalia Up to Sub-class Level with Examples. Comparison of Prototheria, Metatheria and Eutheria. Dentition in Mammals.

Suggested Readings:

1. E.L.Jordan and P.S. Verma '*Chordate Zoology'* -. S. Chand Publications.
2. Mohan P.Arora. '*Chordata – I*, Himalaya Publishing House Pvt.Ltd.
3. Marshal, Parker and Haswell '*Text book of Vertebrates*'. ELBS and McMillan, England.
4. Alfred Sherwood Romer. Thomas S. Pearson '*The Vertebrate Body*, Sixth edition, CBS college
   Publishing, Saunders College Publishing
5. George C. Kent, Robert K. Carr. *Comparative Anatomy of the Vertebrates*, 9th ed. McGraw Hill.
6. Kenneth Kardong *Vertebrates: Comparative Anatomy, Function and Evolution*, 4th ed, 'McGraw Hill.
7. J.W. Young, *The Life of Vertebrates*, 3rd ed, Oxford University press.
8. Harvey Pough F, Christine M. Janis, B. Heiser, *Vertebrate Life*, Pearson, 6th ed, Pearson Education Inc.2002.
9. Modern text book of zoology vertebrates ---- R.L kotpal

I B.Sc, Zoology II Semester Practical –II - Animal Diversity of Vertebrates

Observation of the following slides/spotters/models

Protochordata: Herdmania,Amphioxus, Amphioxus T.S. through Pharynx.

Cyclostomata: Petromyzon,Myxine.

Pisces: Pristis, Torpedo. Channa Pleuronectes, Hippocampus, Exocoetus Echineis, Labeo, Catla, Clarius, Auguilla, *Protopterus,* Placoid scale, Cycloid scale, Ctenoid scale

Amphibia: Ichthyophis, Ambystoma, Siren, Axolotl larva, Hyla, Rachophous.

Reptelia: Draco, Chemaeleon, Uromastix, Russels viper, Naja, Krait,Enhydrina, Testudo,Trionyx, Crocodile.

Aves: Passer,Psittacula ,Bubo, Alcedo , Pigeon, corvus ,peacock ,Study of different types of feathers: Quill,Contour,filoplume,down.

Mammalia: Ornithorthynchus, Tachyglossus Hedgehog, Pteropus, Funambulus, Manis. Loris.

Osteology: Appendicular skeletons of varanus, Fowl and Rabbit- Fore limbs, Hind limbs and Girdles.

Demonstration of dissection/dissected/Virtual Dissections:

Virtual labs: Informative Dissections on three Chordates
Lamprey- Anatomy
Shark- Anatomy
Perch- Anatomy
Cat-Digestive system, Cardio respiratory system, Urinogenital system

Laboratory recod work shall be submitted at the time of practical examination
One species is to be adopted for demonstration compulsorily by the faculty.
Computer aided techniques should be adopted as per UGC guide lines.

An "**animal album**" containing photographs, cut outs, with appropriate write up about the above mentioned taxa. Different taxa/ topics may be given to different sets of students for this purpose. These need not be repeated as drawings by the album maker.

Suggested manuals

1. Practical Zoology – Vertebrata S.S.Lal
2. A manual of Practical Zoology – Chordata P.S.Verma

II BSC- III SEMESTER, PAPER III ZOOLOGY SYLLABUS 2020-21
TITLE: CYTOLOGY, GENETICS AND EVOLUTION

UNIT-I

Cytology: Definition, Prokaryotic and Eukaryotic cells, Brief account on Virus, Viroids, Mycoplasma,lectronic microscopic structure of animal cell, Plasma membrane –Fluid mosaic model, Functions of plasma membrane.

UNIT – II

Cytology: Structure and functions of cell organelles - Endoplasmic reticulum, Golgibody, Ribosomes, Lysosomes and Mitochondria, Nucleus, Chromosomes - Structure, types, functions, giant chromosomes.

UNIT – III

Genetics – I: Mendel's Principles of Inheritance, Incomplete dominance andcodominance, Lethal genes, Epistasis, Pleiotropy.

UNIT IV

Genetics – II: Sex Determination-Theory of Heterogamesis, Genic Balance theory, Environmental theory, Free maritins, Gynandromorphs,5. Sex linked inheritance - X linked recessive genes in Man, Y linked inheritance, Sex influenced and sex limited genes, Extra chromosomal inheritance -Inheritance of kappa particles in *Paramoecium* and shell coiling in *Limnaea,* **Additional input***:* Breat cancer in Mice,Human Karyotyping.

UNIT V

Evolution: origin of life, NeoDarwinism or Modern synthetic theory of Evolution, Hardy Weinberg Equilibrium,Isolating Mechanisms,Natural Selection and its types (Directional, Stabilizing, Disruptive), Speciation (Allopatric and Sympatric).

Zoogeography: Study of physical and faunal characters of Oriental, Australian and Ethiopian regions.

Suggested readings

Lodish, Berk, Zipursky, Matsudaria, Baltimore, Darnell *'Molecular Cell Biology'* W.H. Free man and company New York..

Gardner, E.J., Simmons, M.J., Snustad, D.P. (2008). *Principles of Genetics*. VIII Edition. Wiley India.

Snustad, D.P., Simmons, M.J. (2009). *Principles of Genetics*. V Edition. John Wiley and Sons Inc.

Klug, W.S., Cummings, M.R., Spencer, C.A. (2012). *Concepts of Genetics*. X Edition. Benjamin Cummings.

Russell, P. J. (2009). *Genetics- A Molecular Approach.* III Edition. Benjamin Cummings.

Griffiths, A.J.F., Wessler, S.R., Lewontin, R.C. and Carroll, S.B. *Introduction to Genetic Analysis*. IX Edition. W. H. Freeman and Co.

Ridley, M. (2004). *Evolution*. III Edition. Blackwell Publishing

Barton, N. H., Briggs, D. E. G., Eisen, J. A., Goldstein, D. B. and Patel, N. H. (2007). *Evolution*. Cold Spring, Harbour Laboratory Press.

Hall, B. K. and Hallgrimsson, B. (2008). *Evolution*. IV Edition. Jones and Bartlett Publishers

Campbell, N. A. and Reece J. B. (2011). *Biology*. IX Edition, Pearson, Benjamin, Cummings.

II B.Sc- Zoology III Semester, Practical - III - Cytology, Genetics And Evolution

Periods : 30 **Max. Marks : 50**

I. Cytology

1. Preparation of temporary slides of Mitotic divisions with onion root tips
2. Observation of various stages of Mitosis and Meiosis with prepared slides
3. Mounting of salivary gland chromosomes of *Chiranomous*

II. Genetics

1. Study of Mendelian inheritance - Dominance, Segregation, Independent Assortment in Pea , Fly through Virtual lab
2. Study of linkage, recombination, gene mapping using the data
3. Problems on Genetics - Mendelian inheritance, Linkage and crossing over, Sex linked inheritance
4. Study of human karyotypes

III. Evolution

1. Study of fossil evidences
2. Study of homology and analogy from suitable specimens and pictures
3. Phylogeny of Human with pictures
4. Macroevolution using Darwin finches (pictures)
5. Visit to natural history museum and submission of a report / submission of a Report

Suggested manuals

Manual of laboratory experiments in cell biology Edward,G.

II BSC IV SEMESTER PAPER IV ZOOLOGY SYLLABUS 2020-21
TITLE: EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY

UNIT I

Developmental Biology and Embryology: Gametogenesis - Fertilization - Types of eggs -. Types of cleavages - Development of Frog up to formation of primary germ layers -Formation and functions of Foetal membrane in chick embryo - Development, types and functions of Placenta in mammals.

UNIT II

Human Physiology – I: Elementary study of process of digestion - Absorption of digested food - Respiration – Structure of Lung, transport of oxygen and carbondioxide - Circulation - Structure and functioning of heart, Excretion - Structure of nephron, urine formation, counter current mechanism.

UNIT III

Human Physiology – II: Nerve impulse transmission - origin and propagation of action potentials along myelinated and non myelinated nerve fibres, Muscle contraction - Ultra structure of muscle fibre, Physical and chemical basis of muscle contraction, Endocrine glands - Structure, secretions and functions of pituitary, thyroid, parathyroid, adrenal glands and pancreas, Hormonal control of reproduction in a mammal.

UNIT IV

Ecology – I : Meaning and scope of Ecology,Important Abiotic factors of ecosystem-Temperature, Light, Water,Nutrient cycles - Nitrogen, carbon and phosphorus,Components of Ecosystem Eg.Lake, Food chains and Food Web, **Additional input:** Kolleru lake

UNIT V: Habitat and ecological niche,Community interactions - Mutualism, commensalism, parasitism,Competition, predation, Ecological Succession with Hydrosere as an Example, Population Studies- Natality, Mortality, Population density, Survivor ship curves, Age Pyramids, Growth curves, R and K selected species

References:

Gilbert, S. F. (2006). *Developmental Biology,* VIII Edition, Sinauer Associates,Inc., Publishers, Sunderland, Massachusetts, USA.
Balinsky, B.I. (2008). *An introduction to Embryology*, International ThomsonComputer Press.
Carlson, Bruce M (1996). *Patten's Foundations of Embryology,* McGraw Hill,Inc.
M.P.Arora, '*Ecology*' Himalaya Publishing company.P.D.Sharma, *Environmental Biology'.*
P.R.Trivedi and Gurdeep Raj. '*Environmental Ecology'*
Buddhadev Sarma and Tej Kumar, *Indian Wildlife Threats and Preservation*
Chapman J.L. and Reiss M.J, *Ecology Principles and Applications*, Second Ed., Cambridge University Press, London.
Benny Joseph, *Environmental Studies*, TATA MGraw Hill Com., New Delhi.
Eugene P. Odum, *Fundamentals of Ecology* Third Ed., NataraJ Publishers,Dehradun.

II B.Sc. Zoology IV Semester, Practical - IV

EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY

Periods : 24 **Max. Marks : 50**

I. Embryology

1. Study of T.S. of testis and ovary of a mammal
2. Study of different stages of cleavages (2, 4, 8 cell stages)
3. Study of chick embroyos of 18 hours, 24 hours, 33 hours and 48 hours of incubation

II. Physiology

1. Qualitative tests for identification of carbohydrates, proteins and fats
2. Qualitative tests for identification of ammonia, urea and uric acid
3. Study of activity of salivary amylase under optimum conditions
4. Study of prepared slides of T.S. of duodenum, liver, lung, kidney, spinal cord, bone and cartilage

III. Ecology

1. Determination of pH of a given sample
2. Estimation of dissolved oxygen of a given sample
3. Dissolved oxygen minilab (Virtual lab: Measurement and observation of the effect of temperature on the amount of DO in water)
4. Estimation of total alkalinity of a given sample
5. Estimation of salinity of a given sample

Suggested manuals

An atlas of embryology Freeman & Bracegirdle

III BSC V SEMESTER ZOOLOGY PAPER-V SYLLABUS 2020-21
TITLE: ANIMAL BIOTECHNOLOGY

UNIT – I

Tools of Recombinant DNA technology - Enzymes and Vectors

1.Restriction modification systems: Types I, II and III. Mode of action, nomenclature, applications of Type II restriction enzymes in genetic engineering

-DNA modifying enzymes and their applications: DNA polymerases. Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases

2.Cloning Vectors: Plasmid vectors:pBR and pUC series, Bacteriophage lambda and M13 based vectors, Cosmids, BACs, YACs,

UNIT – II

Techniques of Recombinant DNA technology

Cloning: Use of linkers and adaptors,**Gene delivery:** Microinjection, electroporation, biolistic method (gene gun), liposome and viral-mediated delivery, **PCR:** Basics of PCR, **DNA Sequencing**: Sanger's method of DNA sequencing- traditional and automated sequencing.

Hybridization techniques: Southern, Northern and Western blotting, **Genomic and cDNA libraries**: Preparation and uses.

UNIT – III

Cell culture media: Natural and Synthetic, **Cell cultures:** primary culture, secondary culture, continuous cell lines; Protocols for Primary Cell Culture; Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, Vero); Organ culture; Cryopreservation of cultures.

Hybridoma Technology: Cell fusion, Production of Monoclonal antibodies (mAb), Applications of mAb, **Stem cells:** Types of stem cells, applications.

UNIT – IV

Reproductive Technologies & Transgenic Animals

Manipulation of reproduction in animals: Artificial Insemination, *In vitro* fertilization , super ovulation, Embryo transfer, Embryo cloning, **Transgenic Animals:** Strategies of Gene transfer; Transgenic - sheep, - fish; applications.

UNIT – V

Industry: Fermentation: Different types of Fermentation: Short notes on - Submerged & Solid state; batch, Fed batch & Continuous; Stirred tank, Air Lift, Fixed Bed and Fluidized; Downstream processing - Filtration, centrifugation, extraction, chromatography, spray drying and lyophilization, **Agriculture:** fisheries – monoculture in fishes, polyploidy in fishes; DNA fingerprinting.

II B.Sc. Zoology V Semester, Practical - V
TITLE: ANIMAL BIOTECHNOLOGY

Any SIX of the following:

1.Maintenance and storage of*E.coli* DH5 alpha cells.
2. Isolation of Plasmid DNA from *E.coli*
3**.** Preparation of genomic DNA from *E. coli*/animals/ human.
4. DNA quantification using agarose gel electrophoresis (by using lambda DNA as standard).
5. Restriction digestion of lambda (λ) DNA using EcoR1 and Hind III.
6. Preparation for insertion and vector for ligation.
7. Performance of ligation reaction using T4 DNA ligase.
8. Preparation of competent cells
9. Transformation of *E. coli* with plasmid DNA using CaCl2,
10. Selection of transformants on X-gal and IPTG
11. Techniques: Western Blot, Southern Hybridization, DNA Fingerprinting
12. Interpretation of sequencing gel electropherograms
13. Amplification of DNA by PCR
14.Packing and sterilization of glass and plastic wares for cell culture.
15.Preparation of culture media

SUGGESTED READING

1. Brown TA. (2010). Gene Cloning and DNA Analysis. 6th edition. Blackwell Publishing, Oxford, U.K.
2. Clark DP and Pazdernik NJ. (2009). Biotechnology: Applying the Genetic Revolution. Elsevier Academic Press, USA
3. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.
4. Sambrook J and Russell D. (2001). Molecular Cloning-A Laboratory Manual. 3rd edition. Cold Spring Harbor Laboratory Press
5. Wiley JM, Sherwood LM and Woolverton CJ. (2008). Prescott, Harley and Klein's Microbiology. McGraw Hill Higher Education
6. Brown TA. (2007). Genomes-3. Garland Science Publishers
7. Primrose SB and Twyman RM. (2008). Genomics: Applications in human biology. Blackwell Publishing, Oxford, U.K.
8. Animal Cells Culture and Media, D.C. Darling and S.J. Morgan, 1994.BIOS Scientific Publishers Limited.
9. Methods in Cell Biology, Volume 57, Jennie P. Mathur and David Barnes, 1998. Animal Cell Culture Methods Academic Press.
10. P.K. Gupta: Biotechnology and Genomics, Rastogi publishers (2003).
11. B.D. Singh: Biotechnology, Kalyani publishers, 1998 (Reprint 2001)

III BSC V SEMESTER ZOOLOGY PAPER-VI SYLLABUS 2020-21
TITLE: ANIMAL HUSBANDRY

UNIT – I

General introduction to poultry farming. Principles of poultry housing. Poultry houses. Systems of poultry farming. Management of chicks, growers and layers. Management of Broilers.

UNIT – II

Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.

UNIT – III

Selection, care and handling of hatching eggs. Egg testing. Methods of hatching. Brooding and rearing. Sexing of chicks.

UNIT – IV

Breeds of Dairy Cattle and Buffaloes – Definition of breed, Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds, Systems of inbreeding and crossbreeding. Housing of dairy animals, Selection of site for dairy farm; systems of housing – loose, housing system. Conventional dairy barn, Cleaning and sanitation of dairy farm, Records to be maintained in a dairy farm. short notes on Weaning of calf. Castration and dehorning. Deworming and Vaccination programme.

UNIT – V

Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks.

III B.Sc. Zoology V Semester, Practical - VI

TITLE: ANIMAL HUSBANDRY

Any SIX of the following: **Hours : 24**

1. Study of various breeds of layers and broilers (photographs)
2. Identification of disease causing organisms in poultry birds (as per theory)
3. Study of the anatomy of a poultry bird by way of dissecting a bird. (Demonstration)
4. Study of various activities in a poultry farm (layers and broilers) and submission of a report.
5. Study of various breeds of cattle (photographs/microfilms)
6. Study of various activities carried out in a dairy farm and submission of a report.

SUGGESTED READING

1. Brown TA. (2010). Gene Cloning and DNA Analysis. 6th edition. Blackwell Publishing, Oxford, U.K.
2. Clark DP and Pazdernik NJ. (2009). Biotechnology: Applying the Genetic Revolution. Elsevier Academic Press, USA
3. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.
4. Sambrook J and Russell D. (2001). Molecular Cloning-A Laboratory Manual. 3rd edition. Cold Spring Harbor Laboratory Press
5. Wiley JM, Sherwood LM and Woolverton CJ. (2008). Prescott, Harley and Klein's Microbiology. McGraw Hill Higher Education
6. Brown TA. (2007). Genomes-3. Garland Science Publishers
7. Primrose SB and Twyman RM. (2008). Genomics: Applications in human biology. Blackwell Publishing, Oxford, U.K.
8. Animal Cells Culture and Media, D.C. Darling and S.J. Morgan, 1994.BIOS Scientific Publishers Limited.
9. Methods in Cell Biology, Volume 57, Jennie P. Mathur and David Barnes, 1998. Animal Cell Culture Methods Academic Press.
10. P.K. Gupta: Biotechnology and Genomics, Rastogi publishers (2003).
11. B.D. Singh: Biotechnology, Kalyani publishers, 1998 (Reprint 2001)

III BSC VI SEMESTER ZOOLOGY PAPER-VII SYLLABUS 2020-21
TITLE: IMMUNOLOGY

UNIT I

Overview of Immune system: Introduction to basic concepts in Immunology, Innate and adaptive immunity

UNIT II

Cells of immune system, Organs of immune system

UNIT III

Antigens: Basic properties of antigens, B and T cell epitopes, haptens and adjuvants, Factors influencing immunogenicity

UNIT IV

Working of Immune system: Structure and functions of major histocompatibility complexes Exogenes and Endogenes pathways of antigen presentation and processing, Basic properties and functions of cytokines.

UNIT V

Immune system in health and disease: Classification and brief description of various types of hyper sensitivities, Introduction to concepts of autoimmunity and immunodeficiency **Vaccines:**General introduction to vaccines, Types of vaccines.

Text Books:

1. 'Immunology' 5th edition. 2003. - R.A. Goldsby, T.J.Kindt, B.A.Osborne and J.Kuby. W.H. Freemann and Company, Newyork.
2. 'Essentials of Immunology' - Ivanriots.

III B.Sc. Zoology V Semester, Practical - VI
TITLE: IMMUNOLOGY

Hours : 24

1. Demonstration of lymphoid organs (as per UGC guidelines)
2. Histological study of spleen, thymus and lymph nodes (through prepared slides)
3. Blood group determination
4. Demonstration of
    a. ELISA
    b. Immunoelectrophoresis

III BSC VI SEMESTER ZOOLOGY PAPER - AQUACULTURE-2020 – 2021

Cluster Elective Paper: VIII 1

TITLE-PRINCIPLES OF AQUACULTURE

UNIT I

Introduction / Basics of Aquaculture: Definition, Significance and History of Aquaculture Present status of Aquaculture – Global and National scenario,Major cultivable species for aquaculture: freshwater, brackish water and marine, Criteria for the selection of species for culture

UNIT II

Types of Aquaculture: Freshwater, Brackishwater and Marine,Concept of Monoculture, Polyculture,Composite culture, Monosex culture and Integrated fish farming.

Culture systems: Ponds, Raceways, Cages, Pens, Rafts and water recirculating systems

Culture practices: Traditional, extensive, modified extensive, semi-intensive and intensive cultures of fish and shrimp.

UNIT III

Design and construction of aquafarms: Criteria for the selection of site for freshwater and brackish water pond farms, Design and construction of fish and shrimp farms.

Seed resources: Natural seed resources and Procurement of seed for stocking: Carp and shrimp

Nutrition and feeds: Nutritional requirements of a cultivable fish and shellfish, Natural food and Artificial feeds and their importance in fish and shrimp culture

UNIT IV

Management of carp culture ponds: Culture of Indian major carps: Pre-stocking management – Dewatering, drying, ploughing/desilting; Predators, weeds and algal blooms and their control, Liming and fertilization; Stocking management – Stocking density and stocking; Post stocking management – Feeding, water quality, growth and health care; and Harvesting ofponds

UNIT V

Organic Vannamei farming (Litopenaeus vannamei), Culture of pearl oysters, Culture of seaweeds - species cultured, culture techniques, important by-products, prospects, Biofloc in Aqua mimicry, **Culture of ornamental fishes –** Setting up and maintenance of aquarium; and breeding.

REFERENCES BOOKS

1. Bardach, JE *et al*. 1972. *Aquaculture – The farming and husbandry of freshwater and marine organisms*, John Wiley & Sons, New York.
2. Bose AN et al.1991. *Coastal aquaculture Engineering*. Oxford & IBH Publ.Co.Pvt.Ltd.
3. Chakraborty C & Sadhu AK. 2000. *Biology Hatchery and Culture Technology of Tiger Prawn and Giant Freshwater Prawn.* Daya Publ. House.
4. FAO. 2007. *Manual on Freshwater Prawn Farming*.
5. Huet J. 1986. *A text Book of Fish Culture*. Fishing News Books Ltd.
6. ICAR. 2006. *Hand Book of Fisheries and Aquaculture*. ICAR.
7. Ivar LO. 2007. *Aquaculture Engineering*. Daya Publ. House.
8. Jhingran V.G. 2007. *Fish and Fisheries of India*. Hindustan Publ. Corporation, India.
9. Landau M. 1992. *Introduction to Aquaculture*. John Wiley & Sons.
10. Lovell RT.1998. *Nutrition and Feeding of fishes*. Chapman & Hall.

III B.Sc, ZOOLOGY PRACTICAL SYLLABUS - 2020 - 2021
CLUSTER ELECTIVE PAPER: VIII 1
VI SEMESTER- AQUACULTURE PRACTICAL: I

Periods :24

1.Cultivable fishes:

1. Identification and study of important cultivable and edible fishes - Any ten
2. Identification and study of important cultivable and edible crustaceans - Any five
3. Identification and study of common aquarium fishes – Any five
4. General description and recording biometric data of a given fish.

2.Nutrition:

1. Identification and study of Live food organisms – (plankton) Any five
2. Formulation and preparation of a balanced fish feed
3. Estimation of Proximate composition of aquaculture feeds – Proteins, carbohydrates, lipids, moisture, ash content.
4. Gut content analysis to study artificial and natural food intake.

3.Field Visits:

Visit to a fish breeding centre / fish farms and submit a report

or

Visit to a feed manufacturing unit and submit a report

III BSC VI SEMESTER ZOOLOGY PAPER- 2020 – 2021
Cluster Elective Paper: VIII 2
TITLE- AQUACULTURE MANAGEMENT

UNIT I

Breeding and Hatchery Management: Bundh Breeding and Induced breeding of carp by Hypophysation; and use of synthetic hormones, Types of fish hatcheries; Hatchery management of Indian major carps, Breeding and Hatchery management of *Penaeus monodon*/ *Litopenaeus vannamei*,Breeding and Hatchery management of giant freshwater prawn.

UNIT II

Water quality Management: Water quality and soil characteristics suitable for fish and shrimp culture, Identification of oxygen depletion problems and control mechanisms in culture ponds, Aeration: Principles of aeration and Emergency aeration, Liming materials, Organic manures and Inorganic fertilizers commonly used and their implications in fish ponds

UNIT III

Feed Management: Types of feeds; Feed additives and Preservatives; role of probiotics, Feed formulation and manufacturing; Feed storage, Feeding strategies: Feeding devices, feeding schedules and ration size; Feed evaluation- feed conversion efficiencies and ratios

UNIT IV

Disease Management: Principles of disease diagnosis and health management; Prophylaxis, Hygiene and Therapy of fish diseases, Specific and non-specific defense systems in fish; Fish immunization and vaccination, Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds, Etiology, Symptoms, prophylaxis and therapy of common shrimp diseases in shrimp ponds.

UNIT V

Economics and Marketing: Principles of aquaculture economics – Capital costs, variable costs, cost-benefit analysis,Fish marketing methods in India; Basic concepts in demand and price analysis,**Fisheries Extension:** Fisheries Training and Education in India; Role of extension in community development,**Fish Genetics:** Genetic improvement of fish stocks – Hybridization of fish,Gynogenesis, Androgenesis, Polyploidy, Transgenic fish, Cryopreservation of gametes, Production of monosex and sterile fishes and their significance in aquaculture.

REFERENCE BOOKS:

1. Boyd CE. 1979. *Water Quality in Warm Water Fish Ponds*. Auburn University
2. Boyd, CE. 1982. *Water Quality Management for Pond Fish Culture.* Elsevier Sci. Publ. Co.
3. Chakraborty C & Sadhu AK. 2000. *Biology Hatchery and Culture Technology of Tiger Prawn and Giant Freshwater Prawn*. Daya Publ. House
4. Conroy CA and Herman RL. 1968. *Text book of Fish Diseases*. TFH (Great Britain) Ltd, England.
5. Halver J & Hardy RW. 2002. *Fish Nutrition.* Academic Press.
6. Ian C. 1984. *Marketing in Fisheries and Aquaculture*. Fishing News Books.
7. ICAR. 2006. *Handbook of Fisheries and Aquaculture*. ICAR.
8. Jhingran VG. 2007. *Fish and Fisheries of India.* Hindustan Publishing Corporation, India.
9. Jhingran VG & Pullin RSV. 1985. *Hatchery Manual for the Common, Chinese and Indian Major Carps*. ICLARM, Philippines.
10. Kumar D. 1996. *Aquaculture Extension Services Review: India.* FAO Fisheries CircularNo. 906, Rome.

III B.Sc, ZOOLOGY PRACTICAL SYLLABUS 2020 - 2021

CLUSTER ELECTIVE PAPER: VIII 2

VI SEMESTER- AQUACULTURE PRACTICAL: II

Periods :24

1.Diseases

1. Identification and study of fish and shrimp diseases - Using specimens / pictures
2. External examination of the diseased fish – diagnostic features and procedure.
3. Autopsy of fish – Examination of the internal organs (Virtual lab)

2.Pond Management

1. Water Quality -Determination of temperature, pH, salinity in the pond water sample, Estimation of dissolved oxygen, free carbondioxide, total alkalinity, total hardness, phosphates and nitrites.
2. Soil analysis – Determination of soil texture, pH, conductivity, available nitrogen, available phosphorus and organic carbon.
3. Identification and study of aquatic insects and aquatic weeds – Each 5

III BSC VI SEMESTER ZOOLOGY PAPER- 2020 – 2021
Cluster Elective Paper: VIII 3 SELF STUDY COURSE
TITLE- CLINICAL TECHNOLOGY

UNIT I

Blood composition and functions, Blood groups and transfusion problems, Blood diseases – Anemia, Leukemia, Leucocytosis, Leucopenia.

Practical:Identification of blood groups,- Estimation of Haemoglobin, Blood cell counting - RBC and WBC, Determination of blood clotting time.

UNIT II

Cholesterol and its significance in Cardiovascular problems, Blood Sugar levels and Diabetes,Types of Cancer, Biopsy and autopsy – clinical importance.

Practicals:- Estimation of Blood sugar level, Urine sugar.

.**UNIT III**

Types of immunity – Innate and acquired, Antigens – Haptenes and epitopes and their properties, Structure and biological properties of human immunoglobulin G (IgG), HyperSensitivity – Immediate and Delayed.

Practical: Study of Vaccination Schedule.

UNIT IV

Blood Parasites –Structure, life cycle and Clinical significance of Plasmodium, Intestinal Parasites – Structure,Life cycle and clinical significance of Entamoeba, Ascaris, ncylostoma, *Enterobius*

Practicals: Identification of the following blood parasites: *Plasmodium* ,- Identification of the following intestinal parasites- Entamoeba, Ascaris, Ancylostoma, Enterobius.

UNIT V

Commonly Occurring Communicable Diseases**,** Bacterial diseases – Typhoid, Tuberculosis, Viral diseases – Chikungunya, Polio, Sexually transmitted diseases – HIV, Zoonotic diseases – Rabies.

Practical: Identification of Slides/Pictures of the above mentioned organisms.

Internship: A report and certificate should be submitted from any reputed Clinical lab.

Text Books:

1. 'Immunology' 5th edition. 2003. - R.A. Goldsby, T.J.Kindt, B.A.Osborne and J.Kuby. W.H. Freemann and Company, Newyork.
2. 'Essentials of Immunology' - Ivanriots.
3. 'A text book of Immunology and Immunotechnology' by B. Annadurai, S.Chand Publications.
4. 'Principles of Immunology' N.V. Shastri., Himalaya Publishing HousePvt.Ltd.
5. 'Genetic Engineering' by Mohan P. Arora., Himalayan Publishers
6. 'Practical Immunology' - Talwar.
7. ' Introduction to basic Molecular Biology Techniques' by G.R.Naik., Himalaya Publishing House Pvt.Ltd.
8. 'Biology' - Campbell and Reece.
9. 'Medical Zoology' - Sobti.
10. 'Parasitology' – Chandler

III BSC V SEMESTER ZOOLOGY PAPER- 2020 – 2021
TITLE: ADD-ON COURSE(1) -VERMICOMPOST TECHNOLOGY

Aims& Objective:

- Students will be able to compost in a limited space and describe the decomposing process.
- The interested students will get the knowledge of composting,
- Students will get the employment,
- They can generate employments,
- They will also turn towards organic farming,
- Will help to maintain the environment pollution free and
- Will get the knowledge of biodiversity of local earthworms.

The detail of the course is as follows:

Focus:

To convert unwanted, organic matter, particularly food scraps and paper into fertile soil.

Name of the course: Vermicompost Technology

Stream: Science or any stream

Subject: Vermiculture/ vermicompost

Duration: 3-5months i.e.105 days

Language: English

Selection /Admission Criteria: First come first serve

Attendance: 90%

Available infrastructure: small & large scale vermiculture units

Course Content: Syllabus

1. Introduction to vermiculture. definition, meaning, history, economic important,their value in maintenance of soil structure, role as four r's of recycling reduce, reuse, recycle, restore.
2. Useful species of earthworms. Local species of earthworms. Exotic species of earthworms. Complementary activities of autoevaluation.
3. Taxonomy Anatomy, physiology and reproduction of Lumbricidae, Vital cycle of Eisenia fetida.
4. Small Scale Earthworm farming for home gardens-- Earthworm compost for home gardens, Conventional commercial composting-- Earthworm Composting larger scale.
5. Earthworm Farming (Vermiculture), Extraction (harvest), vermicomposting harvest and processing.
6. Enemies of Earthworms, Sickness and worm's enemies, Frequent problems and prevention.

Practical Syllabus :

1. Key to identify different types of earthworms
2. Field trip- Collection of native earthworms & their identification
3. Study of Life stages & development of Eisenia fetida
4. Study of Vermicompost equipments, devices
5. Preparation vermibeds, maintenance of vermicompost & climatic conditions.
6. Harvesting, packaging, transport and storage of Vermicompost and separation

III BSC V SEMESTER ZOOLOGY PAPER- 2020 – 2021
TITLE: ADD ON COURSE(2) - PUBLIC HEALTH

Aims& Objective:

- Students will be able to learn about the communicable diseases and prevention
- Students will create awareness among the public.
- They will also turn towards sustainable health practices.
- Will help to maintain the environment pollution free and primary health care.

The detail of the course is as follows:

Focus:
To concentrate on general health practices
Name of the course: Public Health
Stream: Science or any stream
Subject: Communicable diseases, Environmental awareness
Duration: 3-5months i.e.105 days
Language: English
Selection /Admission Criteria: First come first serve
Attendance: 90%
Available infrastructure: Microscopes, Micro prepared slides
Course Content: Syllabus

1. General components of Environment.
2. Health for All- Primary health care standards
3. Water sources,
4. Community Sanitation
5. Environmental Pollution Effects & Control
6. Communicable diseases-Air borne diseseas- Measels, Mumps, Diptheria, Waterborne diseases- Cholera,Typhoid, Jaundice,
7. Contact Diseases-AIDS, STD, Leprosy
8. Parasitic Diseases-Helminths,

Practical:

1. Study of disease causing organisms of Measels, Mumps, Diptheria, Cholera,Typhoid, Jaundice, AIDS, STD, Leprosy and Helminthes
2. Community Extension on communicable diseases
3. Visit to areas to study about Environmental pollution

DEPARTMENT OF HOMESCIENCE

Meeting of the Board of Studies in Home Science was held on Satureday, 07.03.2020 at 2.00 p.m. in the Home Science Department.

Members:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.Y.Lakshmi Prabha, St.Joseph's College for Women (A), Visakhapatnam.

Subject Expert:

3. Ms.G.Sucharitha, Government Polytechnic College for Women, Guntur

Faculty:

4. Dr.Mrs.K.V.Padmavathi
5. Dr.Mrs.K.Rani
6. Dr.Mrs.M.Padmaja
7. Mrs.P.S.Bhanu Prasanna
8. Ms.T.Jhansi Lakshmi
9. Ms.G.Fathima

Students:

10. B.Suneela, III B.Sc. H.Sc.
11. B.Kiranmayi, II B.Sc. H.Sc.

Resolutions:

After thorough review of the syllabus the board felt that syllabus is highly satisfactory and hence suggested to continue during the forthcoming academic year. However the following suggestions are made by the members.

- Internships can be further continued as per the practice.
- Students expressed that it would be beneficial, if they are exposed to Industrial visits in Textiles and Clothing.
- Experts suggested to plan for Educational Tour to Home Science students towards Ramoji Film City as it has got many applications for Home Science course.

Course Pattern:

Semester I 1. Family Housing 2. Food Science and Microbiology 3. Human Physiology	**Semester II** 1. Interior Decoration 2. Nutritional Biochemistry 3. General Psychology
Semester III 1. Fiber Science 2. Normal Nutrition **3.** Human Development-I	**Semester IV** 1. Textile Design 2. Community & Therapeutic Nutrition **3.** Human Development-II
Semester V 1. Resource Management 2. Apparel Design 3. Home Science Extension 4. Nutrition for Fitness **Subject Electives:** 5-1: Family dynamics/ 5-2:Communication systems and Social change 6-1:Entrepreneurship Artistry/ 6-2: Disaster Management / 6-3:Women Empowerment	**Semester VI** 1. Home Economics 2. Family Attire and Domestics 3. Food Service Management 4. Extension Education and Community Development **Subject Electives:** 5.1: Creche and Preschool management/ 5.2: Children with disabilities 6.1: Computer Aided Apparel Designing (CAAD)/ 6.2: Sociology / 6.3: Women Entrepreneurship

- Project work in any area of Home Science
- Two Internships
    1. Dietetics 2. Entrepreneurship during first and second year summer vacation
- Extra credits may be scored by doing MOOCS/ Self study courses/ Credit transfer from College approved Institutions/ Industries.

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I BSC I SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: FAMILY HOUSING

Objectives

- To develop an understanding of housing as it affects family wellbeing and social relationships
- To equip students about the operation, use and care of various gadgets to save resources

UNIT-I

Meaning and scope of Home science. Concept of Family, Resource, Management, House, Home. S**e**lection of site. Language of draftsman. Principles of house planning. Blue print. Agencies for Housing-NBO, HUDCO, AP State Housing Corporation, VMRDA, HUDA, PMAY – Urban, PMAT – Gramin, RAY, TNHB, MHADA etc. Kitchen – characterstics, work areas and layout.

UNIT – II

Influence of house on health and family living. Disinfection and pest control – classification of disinfectants and household pests, types of disinfection and disinfestations. Housing needs in different stages of family life cycle. Owning vs. renting a house. Home accidents – reasons and preventive measures.

UNIT –III

Household equipment – importance, classification, factors in selection, materials used in construction, study of the major and minor equipment – construction, mechanism, use and care of refrigerator, vacuum cleaner, washing machine, geyser, microwave oven, mixer, iron, immersion coil, kettles, toasters, percolators and mechanical appliances.

UNIT – IV

Appropriate technology for fuel energy conservation – hot case, hay box, rural refrigerator and gas plant.

UNIT – V

House plants – classification – indoor, outdoor, ornamental, climbers, cacti and bonsai. Propagation and care of plants.

Assignment: Household equipment , appropriate technology.
Skill Oriented: Household cleaning, care of metallic and non metallic ware.

I BSC I SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: FOOD SCIENCE AND MICROBIOLOGY

Objectives

- To learn about various food groups
- To equip students about the various methods of food processing

UNIT I

Foods-Definition and objectives in the study of foods - Relation to nutrition and function of foods. - ICMR food group classification - Cereals and millets-structure, composition and nutritive value, processing, use in variety of preparations, selections, nutritional aspects and cost.

UNIT II

Pulses and legumes: Composition and nutritive value, production, selection and variety, storage and processing. - Vegetables and fruits: Classification, nutritional aspect, pigments present, enzyme browning.

UNIT III

Milk and Milk products: nutritive value, use in cookery - Meat, fish, poultry and eggs: nutritive value, use in cookery - Nuts and oils seeds: nutritive value, use in cookery - Spices and condiments: nutritive value, use in cookery – Beverages.

UNIT IV

Food preservation-methods, techniques, principles and their applications-high temperature, low temperature, removal of moisture, irradiation and preservatives - Multi purpose foods, dehydrated foods, frozen foods, ready mixers. - Improving nutritional quality of foods: Germination, Fermentation, Supplementation, Substitution, Fortification and enrichment.

UNIT V

Food Sanitation and hygiene - Control and inspection - Planning and implementation of training program for health personal. - Food spoilage . Microbiology of foods and dairy products (vegetables, fruits, eggs, meat, milk, fish),Methods of food preservation, Food borne infections, Food poisoning, Aflatoxins .

Assignment: Functions of Foods, Food preservation methods, food spoilage.

Skill Oriented:Food guide pyramid, multi purpose foods, ready mixers.

I BSC I SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: HUMAN PHYSIOLOGY

Objectives

- To impart fundamental knowledge regarding the physiology of human beings.
- To be aware of the various diseases and disorders of the various systems.

UNIT I

The skeletal system-Classification of bones, structure and functions.
Nervous system – Structure and types of neuron. Brain – parts and functions, spinal cord, autonomic nervous system, reflex action.

UNIT II

Blood – Composition, functions, volume, development of erythrocytes, blood groups, coagulation of blood, Rh factor, anaemia.
Cardiovascular system – anatomy of heart, heart rate, circulation of blood – systemic, Pulmonary, Portal, Coronary etc, Blood pressure – Determinants of B.P.

UNIT III

Digestive system – Structure of the alimentary canal, process of digestion, role of salivary glands, liver, pancreas in digestion. Dentition formula, structure of tooth. Absorption of food. Digestive system disorders.
Excretory system – Structure and functions of kidneys, formation of urine, composition and volume of urine and micturition, kidney disorders.

UNIT IV

Respiratory system – Structure of respiratory organs, mechanism of respiration, lung volume, exchange of gases in lungs, anoxia and artificial respiration.

UNIT V

Endocrine glands and hormones – Structure and chemical nature, their influence on growth, metabolism and reproduction.
Reproductive system – anatomy of male and female reproductive system, menstrual cycle. Reproductive system disorders.

Assignment: Preparing 3D models of body organs.

Skill Oriented: Blood group and RH factor testing.

I BSC II SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: INTERIOR DECORATION

Objectives

- To acquaint the students with the general principles of design.
- To develop an understanding of the application of these principles in various compositions and arrangements.

UNIT-I

Objectives of Interior Decoration. Importance of good taste. **Design** – classification: structural and decorative- naturalistic, stylized, geometric and abstract. Requirements of good design. Relationship of art elements, art principles and objectives of Interior decoration. **Elements of art**- Line, Form, Texture, Light, Pattern, Space and Colour-dimensions, emotional effect, Prang color chart, classes of color, harmonies of color, guidelines for choosing color scheme.

UNIT –II

Principles of art – **Balance** – introduction, definition, classification and application of balance in interior design. **Rhythm** – introduction, definition, methods of obtaining rhythmic movement and application of rhythm in interior design. **Harmony** – introduction, definition, Harmony in composition- repetition, contrast and transition. Harmonious lines and shapes-shape harmony in arrangements, harmonious or consistent sizes, harmony of textures, harmony of ideas, harmony of color. **Emphasis**-introduction, definition, methods of obtaining Emphasis. Emphasis in interior design. **Proportion**-introduction, definition, Proportion in interior design.

UNIT –III

Accessories- Introduction, classification, types and placing of accessories in interior decoration. **Picture framing-** Introduction, Proportion in framing of Pictures, **Flower arrangement-** Introduction, history, importance, styles, types, shapes, varieties of arrangements, equipment needed for flower arrangement, selection and care of flowers, steps in making flower arrangement, placement of flower arrangements.

UNIT –IV

Furniture-types of furniture, factors in selection, materials used in furniture construction, arrangement of furniture in different rooms. **Window treatments**-Hard and soft treatments. **Floor decorations**-Types and origin**.**

UNIT – V

Table setting- Introduction, requisites for table laying, place setting for formal and Informal meals, seating arrangement, general rules for serving food.

Assignment: Productive work used in Interior Decoration.

Skill Oriented: Flower arrangements, Floor decorations, Furniture arrangements.

I BSC II SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: NUTRITIONAL BIOCHEMISTRY

UNIT I
Definition and introduction to nutrition-good nutrition and mal nutrition- visible symptoms of good health. Nutrition and Infection.

UNIT II
Macro Nutrients - Classification, digestion, absorption, functions, dietary sources, clinical manifestations of deficiency and excess and storage in the body of the following in brief: Energy, Carbohydrates, lipids and proteins.

UNIT III
Classification, digestion, absorption, functions, dietary sources, RDA, clinical manifestations of deficiency and excess of the following in brief: Fat soluble vitamins-A, D, E and K Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin-C

UNIT IV
Classification, digestion, absorption, functions, dietary sources, RDA, clinical manifestations of deficiency and excess of the following in brief:Minerals – calcium, iron, iodine, fluorine and zinc.

UNIT V
Interrelation between nutrients . Nutritional Programmes by Government for defieincy diseases.

Assignment: Visible symptoms of good health, Acid Base balance, BMR.

Skill Oriented: Identification of deficiency symptoms.

I BSC II SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: GENERAL PSYCHOLOGY

Objectives

- To enable the students to understand the basic concepts and principles of psychology
- To develop an understanding about the theories of psychology in relation to the normal adult human beings.

UNIT I

Psychology – Definition, history, Scope and utility of Psychology in different fields. Methods of Psychology – introspection, naturalistic observation, experimental and clinical methods.

UNIT II

Perception and awareness – Definition, perceptual organization, perceptual constancies, perception of space, Illusion – types. Special senses-perception of vision, taste, smell, touch and hearing.

UNIT III

Learning – Definition, theories of learning. Memory – Types, Process of memorization, Forgetting – Types and Theories.

UNIT IV

Intelligence – Definition, theories, Classification of intelligence, assessment of intelligence, Aptitudes.

UNIT V

Personality – Definition and its nature, theories, personality types. Assessment of Personality.

Assignment: IQ Tes5ting, Collection of Perception images.

Skill Oriented: Perceptional organization, knowing Muller Lyer visual error.

II BSC III SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: FIBER SCIENCE

Objectives

- To understand classification of textile fibers, their properties and process involved in making yarns.
- To know about spinning, its importance and kind of yarns.

UNIT-I

Textiles and clothing-Introduction, Importance of study of textiles to the consumer, classification of fibers. Fiber properties-external structure and internal structure, chemical composition. Fiber properties- Visual, burning and microscopic tests.

UNIT-II

Conventional spinning of staple fibers (cotton), yarn count, amount of twist, kind of yarns. Fiber blends and mixtures, reasons for blending.

UNIT-III

Natural fibers-**Plant Fibers**-**Cotton**- history, varieties and cultivation, Ginning and baling, evaluation of cotton fabrics and uses.

Animal Fibers-Wool-history, varieties- according to sheep and fleece, reprocessed and reused wool, manufacturing process of woolens and worsteds and evaluation of wool fabrics.

Silk- History, sericulture, filature operations, manufacture of silk yarns, varieties, evaluation of silk fabrics, spun silk, wild silk and pure dye silk.

UNIT-IV

Man made fibers- Study of production, properties, use and care of man made fibers, history of **Rayon**, Viscose and Saponified rayons- **Fortisan**.

UNIT-V

Synthetic fibers- **Polyamides**-history, a brief study of production, properties, use and care of **Nylon 6, 6** and evaluation of nylon fabrics. **Polyesters**- **Dacron**- a brief study of- production, properties, use and evaluation of Dacron fabrics.

Assignment: Various Fibres which are not included in the syllabus.

Skill Oriented: Basics of Tailoring Skills.

II BSC III SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: NORMAL NUTRITION

Objectives

- To study the nutritional requirements throughout life cycle
- To learn to assess the nutritional status of a community

UNIT-I

Meal planning – importance, factors affecting meal planning – nutritional, sociological, religious, economical, availability and material resources.
Resting metabolic rate: factors affecting BMR, SDA of foods

UNIT-II

Adulthood: nutritional requirements – sex, activity, type of work – moderate, sedentary, heavy work, food intake, menopause – complications.
Pregnancy and Lactation: Physiology of pregnancy, psychological changes, nutritional requirement, complications. Mechanism of lactation, quantity and quality of milk production, advantages of breast milk.

UNIT-III

Infancy and Preschool : Nutritional requirement, breast feeding verses artificial feeding, weaning, effect of malnutrition on intelligence, behavior, growth and development of children. Nutritional problems of children in pre school age.

UNIT-IV

School going: Nutritional requirements, food habits, feeding problems,packed lunches.
Adolescence : Nutritional requirements, food habits, nutritional problems.

UNIT-V

Old age: Nutritional requirements, modification of diet, nutritional problems.

Assignment: Nutritional requirements for various age groups, women related problems like PCOD, Fibroids and Endomentriosis.

Skill Oriented: Mechanism of Lactation, Physiology of Pregnancy.

II BSC III SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: HUMAN DEVELOPMENT-I

Objectives

- To enable the students to understand the sequential stages of Development throughout the life span.
- To understand the behaviour, attitudes and interests in different stages of life span.

UNIT I

Growth and development – Definition, Principles, factors affecting growth and development. Pre-natal development – How life begins, development during 1, 2 & 3 trimesters common complaints and danger signals during pregnancy. Factors affecting the growth of foetus.

UNIT II

Parturition :Stages of birth process, types of birth, post natal adjustments, factors affecting adjustment of the new born. Characteristics, features and physiological functions of the neonate.

UNIT III

Babyhood – Characteristics, tasks, physical and motor development, physiological functions, skills, speech development, emotional behaviour, development of socialization.

UNIT IV

Needs of children, consequences of non-satisfaction of needs, common ailments during infancy and their prevention. Immunization schedule, ORT, infant and maternal mortality rate. Importance of Infant stimulation –areas of stimulation.

UNIT V

Play – importance, values, theories, patterns of children's play, selection of play equipment etc. Habits and Habit formation, Habit breaking.

Assignment: Preparation of Infant stimulation material, play equipment.

Skill Oriented: Preparation of Flash cards on milestones of Child Development, Prenatal Development.

II BSC IV SEMESTER HOME SCIENCE SYLLABUS 2020- 2021
TITLE: TEXTILE DESIGN

Objectives

- To develop awareness and appreciation of textile design
- To acquaint students with Indian traditional costumes.

UNIT-I

Fabric construction-weaving-preparation, essential weaving operations, selvages, Yarn count. Classification of weaves, basic weaves-characteristics and variations Decorative weaves-swivel, lappet, dobby, leno, pile and jacquard.

UNIT-II

Decorative fabric construction- Knitting, crocheting, braiding, tufting, felting, bonding and laces.

UNIT-III

Fabric finishing- uses, singeing, bleaching, mercerizing, calendaring, tentering, degumming, sizing, weighting, schenerising, embossing, crepe effects, moiring, napping and flocking.

UNIT-IV

Surface designs through- dyeing, selection of dye, classification, natural and synthetic dyes, affinity, color fastness tests and dyeing methods.

UNIT-V

Printing- Dyes used for printing, preparation of fabric, methods of printing-block, roller, duplex, discharge, resist, stencil, screen, spray, batik, tie and dye and fabric painting.

Assignment: Productive work like Jwellery making
Skill Oriented: Painting and printing techniques. Workshop on Screen printing and painting

II BSC IV SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: COMMUNITY AND THERAPEUTIC NUTRITION

Objectives

- To know the modified nutrient requirement during different diseases
- To give the students practical experience of therapeutic diets

UNIT-I

Community nutrition: National and international organizations and nutrition programs, Assessment of nutritional status of a community, Nutrition education programs –steps, teaching aids and techniques

UNIT-II

Dietitian: Role of dietitian in hospitals and community, qualifications, responsibility, health care team. Therapeutic diet – normal diet, modification of diets, therapeutic adoption – liquid, fluid, soft, bland diets, tube feeding, parental feeding. Nutrient modification – high, moderate and low nutrients.

UNIT-III

Nutrition in metabolic disorders: Causes, symptoms, dietary principle, clinical features of obesity, Diabetes mellitus – complications, changes in carbohydrate, fat and protein metabolisms.

UNIT-IV

Nutrition in gastro intestinal disorders: Causes, symptoms, dietary principle, clinical features of constipation, diarrhea and peptic ulcer .Liver disorders- Jaundice, Cirrhosis. Nutrition in renal disorders – causes, symptoms, dietary principle, clinical features of nephritis, renal failure and renal calculi, Dialysis.

UNIT-V

Nutrition in cardiovascular disorders: Hypertension, Atherosclerosis – risk factors, symptoms, dietary principle, preventive measures.
Nutrition in stress conditions – Fevers –types, AIDS - Causes, symptoms, dietary principle. Food allergy.

Assignment: Assessment of nutritional status of a community, Diagnosis of diseases
Skill Oriented: Preparation of teaching aids for imparting Nutrition Education

II BSC IV SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: HUMAN DEVELOPMENT-II

Objectives

- To enable the students to understand strategies and theories of human development and behaviour.
- To give special emphasis on personal adjustments of adults.

UNIT I

Early Childhood years (2-6 years) – Characteristics, developmental tasks, physical, language, emotional, intellectual and social developments. Speech disorders, play and self help skills.

UNIT II

The emerging child in the middle childhood years – characteristics, developmental tasks, physical and motor development, improvement in speech, emotional expressions, social behaviour etc. Children's gangs. Juvenile delinquency – causes and rehabilitation.

UNIT III

Puberty – Characteristics, criteria for puberty, growth spurt, body changes, development of primary and secondary sex characteristics. Effects of puberty on pubescents.

UNIT IV

Adolescence – Characteristics, Physical changes, development of emotional maturity changes in social behavior, family relationships during adolescence.

UNIT V

Young adulthood and middle adulthood years – characteristics, developmental tasks and personal adjustments. Defense mechanisms. Old age – characteristics, developmental tasks, adjustments to physical, physiological, motor and mental changes. Vocational and family adjustments.

Assignment: Different stages of life span, primary and secondary sex characters

Skill Oriented:Picture talks preparation, preparation of literature for school going children

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: RESOURCE MANAGEMENT

Objectives

- To impart knowledge on resource management concepts.
- Toimprove the students managerial ability

UNIT – 1

Resources – classification and characterstics. Guides to increasing satisfaction. Management – conceptual framework of the homemanagement process. Steps in the management process. Misconceptions and obstacles of management.

UNIT – II

Factors motivating management – values, goals and standards. Interrelationship of management, family values and goals.

UNIT –III

Personal qualities associated with management. Systems approach to management. Decision making-types, steps in the process, methods of resolving conflicts.

UNIT – IV

Family family management - Family income, Family budget, Family financial records, family savings and family investments.

UNIT – V

Time management – time plans, factors to be considered for making a time plan, time management process. Energy management – efforts in household activities, energy costs, fatigue, energy management process. Work simplification: Techniques-Paper&pencil, Classes of change. Cottage stay - History, objectives, planning and organizing resources towards cottage stay.

Assignment: Productive work, preparation of wall hanging, Artificial Flower making, Wealth from Waste

Skill Oriented: Cottage Stay, Preparation of Family Financial Records

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: APPAREL DESIGN

Objectives

- To gain knowledge involved in procedures of apparel designing.
- To develop skill in construction of lady's and children's wear.

UNIT –I

Parts of sewing machine, use and care. Sewing equipment-cutting, measuring, marking, pressing, embroidery and general tools.Pattern making-Introduction, principles,methods,merits,demerits and application in clothing construction.Body measurements- Standard measuring points of different garments.Layout and calculating the amount of material required.

UNIT-II

Introducing design in garments, basic cuts and silhouettes, application of art principles- Harmony, Rhythm, Balance, Proportion and Emphasis.

UNIT-III

Renovation of old garments, comparison and selection of ready made garments with tailor made and home made garments. Problems faced by Indian consumer in selecting textiles and clothing.

UNIT-IV

Principles of fitting, various fitting problems and remedies. Modifying a design for different purposes.

UNIT-V

Indian costumes- a brief study of different modes of wearing male and female costumes of different states-Kashmir, Punjab, Rajasthan, Gujarat, Andhra Pradesh, Tamil nadu, Kerala and Karnataka.

Assignment: Indian Costumes of different states not included in the syllabus

Skill Oriented: Apparel Designing and Construction

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: HOME SCIENCE EXTENSION

Objectives

- To give knowledge of extension education.
- To know about the process and procedures in extension education.

UNIT-I

Nature and role of extension education, meaning, philosophy and principles underlying the philosophy of extension, objectives of extension education. The concept of extension education process, qualities of an extension worker.

UNIT-II

Teaching and learning- definitions, elements of learning situation and steps of teaching process, principles of motivation in extension.

UNIT-III

Role of home science in rural development, community development and extension education in India (history of CD and NES) Panchayat Raj system.

UNIT-IV

Extension methods-tools and techniques, classification according to use and form, study of extension teaching methods (Individual, Group and Mass contacts), their advantages and disadvantages.

UNIT-V

Audio visual aids- definition, purpose, cone of experience, the effective use of audio-visual aids, advantages and disadvantages.

Assignment: International Organisations like UNICEF,WHO, CARE etc.

Skill Oriented: Preparation of Visual Aids

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: FOOD SERVICE MANAGEMENT

Objectives

- To learn about different food service institutions
- To acquaint students with skills and techniques of food service management

UNIT-I

Catering industry- introduction, development and scope, classification of food service institutions-types of menu- menu card preparation. Role of computer in food service management.

UNIT-II

Food services:- types and techniques-table service, waiter service, self service, sing point service, socialized service, room service-personnel taking, preparing and delivering the order, menu, telephone etiquettes. Quality control-standardization, portion size, cost control-labor cost, food cost, over head cost.

UNIT-III

Food service equipments: classifications, selection criteria and methods of purchasing-furniture, linen table ware, special equipments.

UNIT-IV

Personnel management: principles of management, tools of management-organization chart, work simplifications, work schedule, job chart, sanitations and hygiene in FSI- personnel, food, and environment.

UNIT-V

Space management:-Kitchen-types, layout, storage-types, layout, service area-layout, design, décor, cleaning area-units, waste disposal.

Assignment: Kitchen Plans, Menu Card Preparation, Role of Computers in catering.

Skill Oriented:Pyrchasing methods, Organisation of Canteen.

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: FAMILY DYNAMICS (Subject Elective V-1)

Objectives

- To enable the students to understand fundamentals and changing trends in the institution of family.
- To study the institution of marriage for its distinctiveness, goals and stages in family life cycle.

UNIT I

Family – Definition, functions, types, composition of the family, nuclear, joint and extended families. Features of a modern family. Changing trends in modern families. Relationships in the family.

UNIT II

Marriage – Definition, Marriage as a personal relationship- Values and Goals, Distinctiveness, preparation for marriage. Criteria for mate selection, age at marriage. Sex education – meaning and components, Hindu marriage act and special marriage act.

UNIT III

Types of marriages – approved and unapproved. Love versus arranged marriages. Marriage ceremonies – Hindu, Christian and Muslim. Areas of marital adjustment, inter marriages (national, religious, racial, caste etc) and their problems. Parenthood tasks of new mother and father.

UNIT IV

Family life cycle – classification, developmental needs and tasks of parents and children in different stages. Marital conflicts, Divorce-causes and legal grounds, role of counseling in marriage.

UNIT V

Size of the family – family planning, population education, consequences of population explosion. Status of women in the modern world – Educational, employment, marital, legal and social status. Domestic Violence.

Assignment: Preparing 3D models of marriage, difference between Nuclear and Joint Family.

Skill Oriented: Construction of Diapers, Wrappers, Baby quilt, Bath towel etc.

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021

TITLE: COMMUNICATION SYSTEMS & SOCIAL CHANGE (Subject Elective V-2)

OBJECTIVES:

- To develop an understanding on importance of Communication.
- To enable the students to know about different types of Media and its significance.

Unit 1

Understanding Self: Awareness of self in communication. Intrapersonal Communication. Self-concept and self esteem

Unit 2

Interpersonal Communication: Concept, types and functions of interpersonal communication. Dyadic, small and large group communication. Stages in human relationship development. Small group communication: types and functions

Unit 3

Organization, Public and Mass Communication: Organizational communication: concept, types, functions and networks. Public communication- concept and techniques. Mass Communication-concept, significance, functions and elements. Theories and models of mass communication. Intercultural communication- concept, stages and barriers. Relationship between culture and communication.

Unit 4

Mass Media: Mass Media- characteristics and significance of print, electronic and web based media. Print Media: types, nature, characteristics, reach, access.

Unit5

Radio: types, nature, characteristics, reach, access. Television and cinema: types, nature, characteristics, reach, access. ICTs: types, characteristics, reach and access.

PRACTICALS

3 HOURS/WEEK
14 WEEKS / SEMESTER

1. Exercises for understanding Self.
2. Studying group dynamics in organizations- formal and informal.
3. Audience analysis- readership, listenership and viewership studies
4. Content analysis of mass media

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: HOME ECONOMICS

Objectives

- To impart knowledge on economic concepts.
- To improve the students analytical skills about the consumer problems.

UNIT – I

Definition**, scope** and importance of the study of economics. Consumption – human wants- classification, characteristics and their origin.

UNIT – II

Standard of living-meaning, definition, importance, causes for low Standard of living, ways of improving standard of living in India, Engel's law of consumption.

UNIT –III

Law of diminishing marginal utility, law of demand, law of Equi-Marginal utility, consumer surplus.

UNIT – IV

Money-evolution, inconveniences of barter system, functions of money, price levels, Index numbers, household purchases. Taxation-types, canon/principles of taxation, Indian taxes, Inheritance and Bequest.

UNIT – V

Consumer education – the homemaker as a consumer, consumer problems, Role, Rights and Responsibilities of the homemaker as a consumer, common malpractices, consumer movements, consumer protection.

Assignment: Productive work, preparation of table mats and serviettes.

Skill Oriented: Room arrangements, Festival decorations.

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: FAMILY ATTIRE AND DOMESTICS

Objectives

- To develop awareness of wardrobe planning and household textiles.
- To acquaint students with traditional textiles and embroidery.

UNIT-I

Wardrobe planning- aims, personal analysis, inventory, principles of wardrobe planning- budget, occasion ,climate, occupation, interest, no. of family members, age, figure, fashion, quality, accessories etc Principles applied to general figure problems and use of color, prints, lines and checks.

UNIT-II

Household textiles- Introduction, definition, classification. Table linen- fabric count, size, finish, design, suitability, serviceability, workmanship, use and care. Towels and bathroom ensembles- size, fiber content, dimensions of pile, absorption, strength, compactness of background, color-co-ordination, use and care. Bed linen-types, brands, size, quality, attraction, fiber content, color co-ordination, construction, weight, finish, warmth, comfort, workmanship, use and care.

UNIT-III

Indian traditional textiles-History of art of weaving in India. Chanderi saries, Paithanies, Banaras and Surat brocades, Patola, Bandhani, Kanjeevaram and Kalamkari. Indian Embroidery-Kaseeda, Phulkari, Chamba roomals, Kanthas of Bengal, Lucknow work-motifs, stitches used and colors etc.

UNIT-IV

Laundry work- water, soap, detergents, bleaches, starches and blues. Laundry equipment, stain removal, methods and principles of laundering.

UNIT-V

Fashion trends-Origin of fashion, definitions, reasons for fashion changes, NIFT, terms related to fashion industry-fashion, style, fad, classic, chic, collection, boutique, couture, couturier, fashion show, mannequin, custom made, high fashion and fashion trend.

Assignment: Productive work Jewellery making, Garment construction according to choice of the student.

Skill Oriented: Apparel construction according to choice of the student.

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020-2021
TITLE: NUTRITION FOR FITNESS

OBJECTIVES:

- To create awareness on importance of fitness to lead healthy life.
- To educate students on various types of exercises for diseased conditions.

UNIT I: Introduction to Fitness and Training Benefits of Exercise Components of physical fitness Alternative systems for Health and fitness

UNIT II : Holistic approach to management of health and fitness including diet and exercise (Aerobic and anaerobic).

UNIT III: Musculo-skeletal Systems - Anaerobic exercise effect on musculoskeletal system.Endurance, strength/ Power, Speed, Coordination, agility, balance etc. Effect of aerobic exercise on heart rate, blood pressure and lung function.

UNIT IV: Water and Electrolyte Balance: Regime of hydration and dehydration. Symptoms and effect of dehydration. Sports Drink. Nutragenic aids and supplements.

UNIT V: Formulating dietary guidelines for- Fitness and health, Obesity management and Critically analyzing different established weight reduction diet plans. Management of diabetes mellitus and Management of CVD

Assignment: Holistic approach to management of help.

Skill Oriented: Various exercises prescribed for disease conditions.

PRACTICALS

3HOURS/WEEK
14 WEEKS / SEMESTER

1. Effect of Specific Nutrients on Work Performance and Physical Fitness and Training diets.
2. Market survey and consumption pattern of nutragenic aids and supplements.
3. Exercise prescription in Obesity and weight control – Prevention of weight cycling.
4. Exercise prescription in Diabetes
5. Exercise prescription in Hypertension and Coronary Heart Disease
6. Exercise prescription in Osteo Arthritis and Osteoporosis
7. Exercise prescription in Spondylitis Back aches
8. Exercise regime for pre and post-natal fitness.

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: EXTENSION EDUCATION & COMMUNITY DEVELOPMENT

Objectives

- To become familiarized with rural problems and to plan programmes accordingly.
- To know about the rural development programmes of central and state governments

UNIT-I

Communication-Concept and components of communication process, principles of motivation in extension.

UNIT-II

Extension programme planning- meaning, principles, criteria for good programme planning, evaluation process in extension, keys to evaluate extension work.

UNIT-III

Demography- Definition, scope and techniques of demographic analysis. Census-Importance, characteristics and methods of conducting census. PRA (Participatory Rural Appraisal) Techniques

UNIT-IV

On going rural development (central Govt.)programmes- Thrift and Credit groups, MNAREGA, SERP,SHGs, CBOs and voluntary organizations.

UNIT-V

On going development programmes of the state Govt.- Cheyutha, Maavuru, Mana Biyyam, Fee Reimbursement, Bangaru Thalli.

Assignment: Ongoing Central and State Government programmes which are not included in the syllabus.

Skill Oriented: Conduct of demonstrations to various groups of people/students.

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: ENTREPRENEURSHIP ARTISTRY (Subject Elective VI-1)

PRACTICALS

6HOURS/ WEEK
84 HOURS/ SEMESTER

OBJECTIVES:

- To inculcate the habit of self learning
- To help the students to be creative
- To awaken the need to be innovative
- To be aware of changes taking place in the society with regard to decoration
- To sustain the interest and to act according to the changes

UNIT- I: Entrepreneurship management (Assignment)
UNIT- II: Prepare one bunch of artificial flowers-craft can be made from any of the following options. For ex: plain paper, magazine paper, crepe paper, cloth, velvet, satin etc.
UNIT- III: Prepare a wall hanging of minimum size -2ft x 3ft. Options for material- fabric painting, nail and thread, embossing, sand designs etc.
UNIT- IV: Prepare an article of your option using crocheting technique-choose any one of the article mentioned-lace, table mats, shawl, edgings, fridge cover, pouch, sweater etc.
UNIT- V: Prepare a wall decor using nib/glass painting technique.
UNIT- VI: Develop and standardize recipes suitable for a Kwashiorkar/ Marasmic child.
UNIT- VII: Develop and standardize recipes suitable for a anaemic obese patient child.
UNIT- VIII: Construction of Magyar frock/ Soft toy.
UNIT- IX: Construction of baby's Bed sheet and Pillow cover.
UNIT- X: Funding agencies to start a boutique (Assignment/ Guest lecture)

- Examination to be conducted at the end of Semester to test the skills equipped by the students.
- No theory only practical.

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: DISASTER MANAGEMENT (Subject Elective VI-2)

3 HOURS/WEEK
14 WEEKS / SEMESTER

OBJECTIVES:

- To develop an understanding about disasters and its management.
- To enable students to know about public nutrition.

Unit I: Natural / manmade disasters resulting in emergency situations. Famine, drought, flood, earthquake, cyclone, war, civil and political emergencies. Factors giving rise to emergency situation in these disasters.

Unit II: Nutritional problems in emergencies in vulnerable groups. Causes of malnutrition in emergency situations. Major deficiency diseases in emergencies. Protein – energy malnutrition. Control of communicable diseases in emergencies . Role of immunisation and sanitation.

UNIT III: Concept of public nutrition- Relationship between health and nutrition. Role of public nutritionists in the health care delivery. National Health Care Delivery System, Determinants of Health Status, Indicators of Health

UNIT IV: Food and Nutrition Security-Food production, Access, Distribution, Availability, Losses, Consumption, Food Security, Socio-cultural aspects and Dietary Patterns: Their implications for Nutrition and Health.

UNIT V: Nutrition Intervention Schemes and programmes operating in India- ICDS, Mid day Meals, Control programmes - Vitamin A , Anaemia, Goiter.

Assignment: Nutrition intervention programmes, Food Security.

Skill Oriented: Development of intervention plans.

PRACTICALS

3 HOURS/WEEK
14 WEEKS / SEMESTER

1. Comparison of rural, urban and tribal communities for determinants of malnutrition
2. Comparison of rural, urban and tribal communities for types of nutritional problems in different age groups.
3. Appraisal of existing interventions and programmes in the voluntary and government sector.
4. Development of a plan for a nutrition intervention project in the community.
5. Development of low cost nutritive recipes suitable for various vulnerable groups.
6. Visit to nutrition rehabilitation centre .

III BSC V SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: WOMEN EMPOWERMENT (Subject Elective VI-3)

3 HOURS/WEEK
42 HOURS/SEMESTER

OBJECTIVES:

- To sensitize students on various aspects of empowerment.
- To enhance the network between eminent women and girl students to enable them to take leadership roles in all sectors.

Unit – 1 (8 hours): Status of women in Indian society in the context of marriage and family. Historical Perspectives of women. Women's empowerment in the 21st century-Educational Empowerment, Social Empowerment, Economic Empowerment, Technological Empowerment, Political Empowerment,

Unit – II (8 hours): Eminent women achievers in various walks of life - Space, Sports, Industry, Non - governmental organizations, Films, Corporate Sector, Politics, Service sector etc - Kalpana Chawla, Kiran Bedi, Mother Theresa Medha Patkar, Pandita Ramabai, Sarojini Naidu, Vijayalakshmi Pandit, Indira Gandhi etc. Influence / Impact on status of women.

Unit –III (8 hours): Indian women – Focus on Crimes against Women – Discrimination - The Societal Status of Women, Independent India, Violence / Crimes against women - Female foeticide, Infanticide, Domestic Violence, Rape, Prostitution, Trafficking, etc

Unit – IV (8 hours): Welfare Schemes operated by the Government of India for Women Beneficiaries and children- ICDS, DWCRA, Ujjwala Homes, Swadhar Homes, Bangaru Thali, Beti Bachao-Beti Padhao, Janani shisu suraksha yojana, Swayamsidha Scheme, Kishori Shakti Yojana, Rashtriya Mahila Kosh.

Unit – V (10 hours): Women Rights, Acts for the benefit of women: Dowry Prohibition Act 1961, Contract Labour Act 1970, Equal Remuneration Act 1976, The commission of sati (prevention) Act 1987, protection of women from domestic violence Act 2005, Maternity Benefits Act 1961, Child Marriage Prohibition Act 2006, The Sexual Harassment of Women at Work Place (Prevention, Provision and Redressal) Act 2013.

Assignment: Profiles of various women achievers who are not included in the syllabus.
Skill Oriented: Preparation of Flash cards.

PRACTICALS

3HOURS/WEEK **14WEEKS/SEMESTER**

1. Survey to find out the status of women in urban households.
2. Survey to find out the status of women in rural households.
3. Interviewing any one of the woman achievers.
4. Interaction with any one of the victims at the rehabilitation centres.
5. Visit to the welfare schemes operating departments.
6. Collection of articles from magazines or news papers about the women achievers.
7. Collection of articles relating to women victims.
8. Interviewing the women beneficiaries of the various schemes.
9. Extending knowledge about the various schemes offered by the govt. to the needy/ Identify your own role model and report her profile in a class room situation.

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021

TITLE: CRECHE & PRE-SCHOOL MANAGEMENT (Subject elective VI-1)

3 HOURS/WEEK
14 WEEKS / SEMESTER

OBJECTIVES:

- To enable the students to understand the importance of preschool education.
- To know the type of facilities and curriculum needed for preschool children.

UNIT I Significance of childcare, Physical set-up of a crèche- Location, Building ,Environment ,Staff Planning and implementation of the programmes. Principles of the supervision, aspects of supervision, Importance and need of training of other workers in Crèches and Pre-school.

UNIT II Early childhood education – History and need for pre-school education, objectives of PSE and crèches. Types of pre schools and crèches. Methods of Pre-School education a) Progressive (Play-way) b) Montessori (sensory-training)

UNIT III Pre-school building – Essentials of pre-school building, play equipment – indoor and outdoor, criteria for selection. Personnel, responsibilities and qualities of a teacher, records and reports (Cumulative record folder). First aid for preschool children.

UNIT IV Curriculum planning, principles, long term, short term, weekly and daily, planning-Pre-school activities and their importance – art and handwork, science activities, sand play, water play, field trips, games, dramatization, rhymes and songs, stories etc. Budget proposal for setting up of a preschool.

UNIT V Home-school relationship – PTA meetings, home visits, individual conference or interview etc. children in need of special care – Classification in brief and special education provisions. Welfare programs for children – ICDS, ICCW, UNICEF etc.

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Assignment: Pre-School activities, Curriculum planning for Pre-school, study on Creches.

Skill Oriented: Preparation of Play equipment, art activities for Pre-school children.

PRACTICALS

3 HOURS/WEEK
14 HOURS / SEMESTER

1. Observation and evaluation of a locally existing nursery school.
2. Developmental observations – Physical, motor, language, emotional, social and moral.
3. Literature for pre-school children.
4. Art activities for preschoolers.
5. Curriculum planning – for a day in a nursery school.
6. Participation in nursery school.
7. Observation and evaluation of a pre-school teacher.
8. Preparation of two play equipment (2) with indigenous materials.

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021

TITLE: CHILDREN WITH DISABILITIES (Subject elective VI-2)

3 HOURS/WEEK
14 WEEK/SEMESTER

OBJECTIVES:

- To impart knowledge to students on different disabilities of children.
- To develop awareness on educational practices of disabled children.

Unit 1 Introduction to Childhood Disabilities

- Defining disabilities
- Models of disability
- Classifying disabilities
- Social construction of disability
- Demography

Unit 2 Common Childhood Disabilities

Identification, Assessment and etiology with reference to Loco motor disability

- Visual disability
- Auditory and speech disability
- Intellectual disability
- Autism
- Learning Disability

Unit 3 Children with Disabilities and Society

Families of children with disability

- Prevention and management of different disabilities
- Educational practices- Special education and inclusion
- Policy and laws

Unit 4

- Historical perspective of Education and special education
- Definition, aims and objectives of special education
- Principles and functions of special education

Unit 5

- Assessment of educational needs of children with Learning Disability
- Early identification and assessment of children with learning disabilities
- Identification criteria – Inclusion, exclusion and discrepancy

PRACTICALS

3 HOURS/WEEK
14 WEEKS / SEMESTER

1. Visits to organizations working with children with disabilities
2. Observing children with disabilities in families and institutions
3. Planning developmentally appropriate material for children with disabilities
4. Exploring audio-visual sources with reference to children with disabilities and their families
5. Select psychometric tests (Ravens Progressive matrices, Portage, Tests for detecting Learning Disabilities)

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021

TITLE: COMPUTER AIDED APPAREL DESIGNING (Subject elective VI-3)

3 HOURS/WEEK
14 WEEKS / SEMESTER

OBJECTIVES:

- To impart Computerized skills in apparel designing.
- To promote an avenue for earning money.

PRACTICALS:

- ❖ Introduction
- ❖ Selecting and using commands
- ❖ Setting the current layers
- ❖ Drawing lines, circles, rectangles
- ❖ Drawing polygons, polylines
- ❖ Drawing sp lines, donuts
- ❖ Specifying hatch patterns
- ❖ Changing the magnification of drawing text style
- ❖ Copying entities
- ❖ Mirroring entities
- ❖ Arraying entities
- ❖ Moving entities
- ❖ Rotating entities
- ❖ Stretching and scaling entities
- ❖ Chamfering and filleting entities

- **No Theory for this paper.**

REFERENCES:

- CAAD Manual

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021

TITLE: SOCIOLOGY (Subject elective VI-4)

3 HOURS/WEEK
14 WEEKS / SEMESTER

OBJECTIVES:

- To know about different social groups and institutions in the society.
- To enable students to understand about common social practices in India.

Unit-I (A)	Sociology- its relation to other social sciences, nature of society and cultures
(B)	Society and individual, social interaction, socialization, agents of socialization, social institutions- family, marriage, religion and educational institution
Unit-II	Social groups- primary- secondary groups, formal and non formal groups
Unit-III	Indian city- consequences of planned and unplanned industrialization, problems of providing basic amenities
Unit-IV	Prevailing practices- current social problems Juvenile (delinquency, beggary, prostitution, communal problems). Areas needing social change- social progress with special reference to women Role of individuals, organization (Government and voluntary) in bringing about social reforms and progress
Unit-V	Concept of welfare state- Indian constitution- directive principles

- **No Practical for this paper.**

III BSC VI SEMESTER HOME SCIENCE SYLLABUS 2020 - 2021
TITLE: WOMEN ENTREPRENEURSHIP (Subject elective VI-5)

3 HOURS/WEEK
42 HOURS/SEMESTER

OBJECTIVES

- To strengthen the participation of students in all the entrepreneurial activities.
- To make the young girls realize their potential and help them to establish an entrepreneurial organisation.

Unit – 1(8 hours):

Entrepreneurship-Meaning and Definition, Importance, Characterstics, Qualities,Scope, Role, Factors affecting Entrepreneurship. **Ethics** in Entrepreneurship. **Entrepreneur** - Meaning and Definition,

Characterstics, Importance, Entrepreneurial activities, Types of Entrepreneurs, **Social responsiblity. Entrepreneurial Development-** Introduction, Need, strategies, role of government in Entrepreneurial Development .Promotional schemes by government. Policy statement by government. Government Incentives, subsidies and grants.

Unit – II (8 hours):

Women Entrepreneurship - Introduction, Features, Role, Importance, Types of women Entrepreneurs, Measures and suggestions for promoting Entrepreneurship among women, Problems of women entrepreneurs, Suggestions to solve problems of women entrepreneurs, women entrepreneurship development in India. Need for development of women entrepreneurs, ways of developing women entrepreneurs, Associations promoting women entdrepreneurs, Profiles of prominent women entrepreneurs-Kiran Mazumdar Shaw, Shahanaz Hussain, Ritu Kumar, Ekta Kapoor, Jyothi Naik, etc

Unit –III (9 hours):

Entrepreneurship Development Programme- Introduction, Need, Objectives, Role, Relevence, Contents, Phases, Achievements. **Central level agencies /institutions supporting entreprenership development-**NIESBUD(National Institute for Entrepreneurship and Small Business Development, SISI(Small Industries Service Institute), EDII/EDI(Entrepreneurial Development Institute of India, SIDO (Small Industries Development Organization), SIDBI (Small Industries Development Bank of India) NABARD(National Bank for Agriculture and Rural Development), IIE (Indian Institute of Entrepreneurship),

Unit – IV (10 hours):

State level agencies /institutions supporting entreprenership development- DIC (District Industries Centre), SFC (State Financial Corporation),SSIDC (State Small Industries Development Corporation), SIDC (State Industrial Development Corporation), TCO (Technical Consultancy Organization), **Financial Institutes Providing Entrepreneurial Support-** IDBI **(Industrial Development Bank of India) , IFCI (Industria Finance Corporation of India) ICICI(Industrial Credit and Investment Corporation of India), IRBI(Industrial Reconstruction Bank of India).**

Unit – V (7 hours):

Creativity & New Venture Management-Idea generation, sources of new ideas, methods of idea generation, elements of good idea generation process. Creativity and Innovation in idea generation. **Project formulation and appraisal**.

Assignment: Productive work like Jewellery making, Thread bangles, Wall hangings, Flower vases etc according to the choice of the students.

Skill Oriented: Flash cards, preparation of Project report.

WOMEN ENTREPRENEURSHIP
VI SEMESTER
PRACTICAL

3HOURS/WEEK
14WEEKS/SEMESTER

- Interviewing any one of the women entrepreneurs
- Collection of articles from magazines or news papers about the women entrepreneurs
- Visits to various industries(at least five) organized by women and reporting in detail about the visit.
- Formulation of project proposal

REFERENCES

FAMILY RESOURCE MANAGEMENT

1. Homescience - Premlatha mullick.
2. The House - T.S. Agan.
3. Modern ideal homes for India - R.S.Deshpondae.
4. Build your own home - R.S.Deshpondae.
5. Homes for middle classes - R.S.Deshpondae.
6. Household equipment - Peet &Thye.
7. Home management - Varghese etal.
8. Home management - The educational planning group.
9. Home management for Indian families-Mohinder .k. Mann.
10. Home furnishings - Anna Hong Rutt.
11. Art in everyday life - Goldstein & Goldstein.
12. Textbook of house hold arts -Stella Soundararaj.
13. Management in family living - Nickell & Dorsey
14. Management for modern families - Gross&Crandall.
15. Elements of economics - Halayya.
16. Elementary economics - K.P.M.Sundaram.
17. Principles of economics - Sundaram&Vaish.
18. Journals–Women's era, Eve's weekly, Inside & Outside, design.

RESEARCH METHODOLOGY

1. Research Methodology - C.R.Kothari.
2. Research Methodology - Dr.Kumar.
3. A handbook of methodology of research – Devadas & Kulandaivel.
4. Statistical methods - S.P.Gupta.
5. Journals – Research Highlights, Research Reach .

MICROBIOLOGY

1. Microbiology – Anna k Joshua
2.Microbiology – Pelczar and Reid
3.General Microbiology – R.V. Stainers
4.Food Microbiology – W.C.Frazier

HUMAN PHYSIOLOGY

1. A concise textbook of physiology- Madhavankutty ,Sarada subramanyam ,Orient Longman Ltd,Chennai
2. Health action,National monthly HAFA-Hyderabad

GENERAL PSYCHOLOGY

1. General Psychology, Mangal S.K. Prakash BrothersEducational PublishersHO Bookmarket
2. Introduction to Psychology, Munn L,Oxford IBH Company, New Delhi 1975,
3. General Psychology, R.N.Sarma, D.K. Publishers,Danjagang, New Delhi 1985
4. General Psychology, Bhatia M.R, Oxford and IBH Publishing company New Delhi 1967

HUMAN DEVELOPMENT

1.Development Psychology, Elizabeth Hurlock.B. Tata Meg.Hill Publishing Co. Ltd., New Delhi 1980
2. Child Development, Elizabeth Hurlock.B. Tata Meg.Hill Publishing Co. Ltd., New Delhi 1980
3. A Text Book on Child Development, Rajammal P.Devadas N.Jaya Mac. Millian India Ltd. Delhi, Bombay, Madras, Hyderabad 1984
4. Child Welfare in India S.N.Sadhu And Veena Dixit Rajamandi, Agar-2
D.K. Publishers,Distibutors, Ansari Road, New Delhi-2.
5. An Introduction to Child Development, Nirmal Khier Kamal Bhoota Mary Ellan and Durret , Asia Publishing House, Londao 1966
6. A Text book of child Behaviour and Development, S.Kuppuswamy, Vikas Publishing House Pvt. Ltd. New Delhi

FAMILY DYNAMICS

1.Marriage (II edition) Robert O.Blood The free pres New York 1969

2. Marriage and family in India, III Edition K.M. Kapadia D.K. Publishers
Distributors Ansari Road, New Delhi-2
3. An Introduction to Sociology Vidya Bhusan Sachideva Allahabad 1970

4. Marriage and family Development, Duvall, Sanjosa, Toronta New York 1977

TEXTILES AND CLOTHING

1. Fiber to fabric by Potter DM and Corbman BP
2. Textile fabrics and their selection by Isable D Wingate
3. Textile by Norma Hollen and Jane Saddler
4. Fundamentals of textile and their by Susheela Dantyagi
5. Household textiles and laundry work by Durga Deulkar
6. Costumes of India by Flynn D
7. Costumes of India and Pakistan by Dar SN
8. Practical clothing construction basic sewing process part –I&II
9. All about fabrics by Stephanic K Holland
10. Craft and craftsman in traditional India by MKPal
11. Fashion from concept to consumer by Gini Stephens Frings

JOURNALS

1. Textile Trends
2. Apparel
3. Clothes line

HOME SCIENCE EXTENSION

1. Extension Education by Adivi Reddy.A
2. Extension Education and community development by Directorate of Extension
3. An introduction to Extension Education by S.V.Supe
4. Audio Visual education in India by S.K.Sakrabarthy
5. Fundamentals of demography by Dr. Hans Raj

JOURNALS

Social welfare
Kurukshetra
Yojana
News papers
Literature from DRDA

FOOD SCIENCE

1. Food science - B. Srilakshmi
2. Food facts and principles - Shakunthala Manay etal
3. Text book of food and nutrition, child care and psychology- Sushmagupta et al
4. Nutrition Science --- B. Srilakshmi
5. Text Book of Nutrition and Dietetics – Khumud Khanna
6. Nutrition and Dietetics – Shubhangi Joshi
7. Dietetics – B. Srilakshmi.
8. A hand book of Food and Nutrition- M.Swaminathan.
9. Essentials of food and Nutrition-M.Swminathan.
10. Food Science and Experimental Cookery-M Swaminathan.
11. Basic Food Preparation-A complete Manual-Usha Raina etal.
12. Normal and Therapeutic Nutrition-CH.Robinson.
13. Clinical Dietetics and Nutrition –Anita
14. Principles of Nutrition and Dietetics -M.Swaminathan.
15. Normal and Therapeutic Nutrition--Prowdfit and C.H.Robinson
16. Food and beverage service-Vijay Dhavan
17. Food and beverage service- Bobby George
18. Food and beverage service-S NBagchi and Anitha Sharma

JOURNALS: Journal Of Nutrition And Dietitics

DEPARTMENT OF NUTRITION & DIETETICS

The meeting of the Boards of Studies in Nutrition & Dietetics was held on Thursday, 05.03.2020 at 10.00 a.m. in the Nutrition Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.K.N.Varalakshmi, S.D.M.Siddhartha Mahila Kalasala, Vijayawada

External Expert:

3. Dr.M.Rajeswari, Andhra University, Visakhapatnam
4. Dr.K.V.Padmavathi, Ch.S.D.St.Theresa's College for Women (A), Eluru

Faculty:

5. Dr.Mrs.P.Jyothi Kumari
6. Ms.V.Vijayakala

Students:

7. D.Anuhya, III B.Sc. MBN
8. Ch.Poornima, III B.Sc. ZNC

Resolutions:

It was resolved that:

1. In VI Semester Community Nutrition Paper, is suggested as common paper in place of Food Quality and Safety (Paper VII). Food Quality and Safety Paper is given as Cluster Paper for MBN combination and for ZNC MOOCs Course is suggested.

   Paper I : Food Science and chemistry
   Paper II: Principles of Nutrition
   Paper III: General Nutrition
   Paper IV: Diet Therapy
   Paper V : Food processing and preservation(Credit transfer programme)
   Paper VI: Food Service Management
   Paper VII:Community Nutrition
   Add-on Course: Food Analysis and Instrumentation /MOOCS

   Cluster: A (For ZNC combination)

   Paper VIII A1: Nutritional Biochemistry
   Paper VIIIA2: Food Microbiology
   Paper VIII A3: Self Study/ Project/MOOCS

Cluster B (For MBN combination)

Paper VIII B1: Research Methodology
Paper VIII B2 : Food Quality and Safety
Paper VIII B3 : Self study (Nutrition in fitness) / Project/MOOCS

2. Visits to Hotels, Nutraceuticals industries, Bakery and confectionary units, food processing industries, hospitals are suggested.
3. Mini projects related to subject topics are suggested.
4. Add on courses - As Certificate, Diploma and Advanced Diploma may be included in the curriculum.
5. Extension activities related to Community Nutrition are suggested
6. Field visits to processing industry in every semester are suggested.

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DEPARTMENT OF NUTRITION & DIETETICS

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Food Science & Chemistry
	II	Paper II	Priciples of Nutrition
II Year	III	Paper III	General Nutrition
	IV	Paper IV	Diet Therapy
III Year	V	Paper V	Food processing and preservation
		Add-on-Course	Food Analysis and Instrumentation /MOOCS-Physiology
		Paper VI	Food Service Management
			Common project
	VI	Paper VII	Community Nutrition
		Cluster A (for ZNC combination) Paper VIII A1 Paper VIII A2 Paper VIII A3	 Nutritional Biochemistry Food Microbiology Self study course/ Project/MOOCS.
		Cluster B (for MBN combination) Paper VIII B1 Paper VIII B2 Paper VIII B3	 Research Methodology Food Quality and Safety Nutrition in Fitness (Self study course)/ Project/ MOOCS.

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
NUTRITION & DIETITICS - I BSC(MBN & ZNC)
I SEMESTER - PAPER I SYLLABUS 2020-21
TITLE: FOOD SCIENCE AND CHEMISTRY

UNIT-I

CEREALS, MILLETS AND SUGARS-Structure, composition and nutritive value, processing, use in variety of preparations, selections, ready mixes- fortification, enrichment, nutritional aspects and cost.

UNIT-II

PULSES AND LEGUMES-composition, nutritive value, production, selection and variety, improvement of nutritional quality of foods by germination and fermentation, storage and processing. NUTS AND OIL SEEDS-nutritive value, use in cookery.

UNIT-III

VEGETABLES AND FRUITS -Classification, nutritional aspects, pigments present, enzyme browning. SPICES AND CONDIMENTS- nutritive value, use in cookery. BEVERAGES-Types.

UNIT-IV

MILK AND MILK PRODUCTS-nutritive value, use in cookery, supplementation and substitution. MEAT, FISH, POULTRY AND EGGS - nutritive value, use in cookery.

UNIT-V.

Bakery and Confectionary Product Preparations – Workshop (Biscuits, cakes , cookies, pastries)

PRACTICALS

1) Cereal preparation
2) pulses preparation.
3) Vegetable cookery.
4) Milk cookery.
5) Breakfast cereal, preparations.
6) Snack preparations
7) Egg cookery.
8) Meat cookery.
9) Pickle preparations.
10) Bakery preparations

I BSc (MBN & ZNC) NUTRITION & DIETITICS SYLLABUS 2020-21
II SEMESTER – PAPER - II
TITLE: PRINCIPLES OF NUTRITION

UNIT I

Definition and introduction to nutrition-good nutrition and mal nutrition Macro Nutrients - Classification, digestion, absorption, functions, dietary sources, RDA, clinical manifestations of deficiency and excess and storage in the body of the following in brief: Energy, Carbohydrates, lipids and proteins.

UNIT II

Classification, digestion, absorption, functions, dietary sources, RDA, clinical manifestations of deficiency and excess of the following in brief: Fat soluble vitamins-A, D, E and K Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin-C Minerals – calcium, iron, iodine, fluorine and zinc.

UNIT III

Energy value of foods and energy requirement – the body's for energy BMR activities,utilization of food to energy requirements. Basal metabolism, factors affecting basal metabolic rate, calorigenic effect of food, specific dynamic action of food (SDA). Acid base balance.

UNIT IV

Importance of water and water balance – functions, sources, requirement – effect of deficiency. Interrelation between nutrients – nutrition and health – visible symptoms of good health.

UNIT IV

RDA Values and Nutrient calculations from foods.

PRACTICALS:

1. Identification of nutrient rich sources of foods, their seasonal availability and price.
2. Study of nutrition labelling on selected foods.
3. List out low cost nutrient rich foods.
4. List out nutrient foods for different income groups.
5. Rules to be observed in food laboratory.
6. Methods of cooking.
7. Standardization of weights and measures.
8. Preperation of soups and beverages.

II BSC NUTRITION & DIETITICS
III SEMESTER PAPER-III SYLLABUS 2020-21
TITLE: GENERAL NUTRITION

UNIT-I

Meal planning – importance, factors affecting meal planning – nutritional, sociological, religious, economical, availability and material resources.

UNIT-II

Adulthood: nutritional requirements – sex, activity, type of work – moderate, sedentary, heavy work, food intake, menopause – complications.

Pregnancy and Lactation – Physiology of pregnancy, psychological changes, nutritional requirement, Food fads and fallacies -effect on nutritional status. complications ,Anaemias-Types mechanism of lactation, quantity and quality of milk production, advantages of breast milk (IVF, Surrogacy).

UNIT-III

Infancy and Preschool age : nutritional requirement, breast feeding verses artificial feeding, weaning, effect of malnutrition on intelligence, behavior, growth and development of children. Nutritional problems of children in pre school age. Preparation of Low cost nutritious Recipies for infants and Weaning foods.

UNIT-IV

School going age: feeding problems, children food habits and nutritional requirements, packed lunches.

Adolescence – physical, physiological, psychological influence on food. Puberty – food habits, food intake, nutritional requirements (PCOD, Endometriosis, Fibroids).

UNIT-V

Old age: Theories of ageing influence of physiological, psychological changes on food intake, food habits, and nutritional requirements.

PRACTICALS

1. Planning and preparation of a balanced diet for pregnant women.
2. Planning and preparation of a balanced diet for a nursing mother.
3. Planning and preparation of a balanced diet for a preschool child.
4. Planning and preparation of a balanced diet during Adolescence.
5. Planning and preparation of a balanced diet for Adult man and Women during different physical activities-Sedentary, Moderate, Heavy worker.
6. Planning and preparation of a balanced diet for Elderly.

II BSC NUTRITION & DIETITICS
IV SEMESTER - PAPER IV SYLLABUS 2020-21
TITLE: DIET THERAPY

UNIT-I

Dietitian: Role of dietitian in hospitals and community, qualifications, responsibility, health care team. Nutrition Assessment Tools, Diet Counselling.

Therapeutic diet – normal diet, modification of diets, therapeutic adoption – liquid, fluid, soft, bland diets, enteral feeds, tube feeding, parental feeding. Nutrient modification – high, moderate and low nutrients. Food allergy-Elimination diet.

UNIT-II

Nutrition in metabolic disorders: Causes, symptoms, dietary principle, clinical features of obesity-Grade assessment, Diabetes mellitus –complications, insulin- types, insulin shock, hypoglycemic drugs, glycemic index, changes in carbohydrate, fat and protein metabolisms.

UNIT-III

Nutrition in cardiovascular disorders: Hypertension, Atherosclerosis – risk factors, symptoms, dietary principle, preventive measures.

UNIT-IV

Nutrition in gastro intestinal disorders: Causes, symptoms, dietary principle, clinical features of constipation, diarrhea and peptic ulcer.

UNIT-V

Liver disorders- Jaundice, Hepatitis, Cirrhosis, Hepatic Coma.

UNIT-VI

Nutrition in renal disorders – causes, symptoms, dietary principle, clinical features of nephritis, renal failure and renal calculi, Dialysis.

UNIT-VII

Nutrition in stress conditions – Fevers –types, nutrition in typhoid, TB, AIDS, Cancer-Causes, symptoms, dietary principle.

PRACTICALS

1. Planning and preparation of diets with modified consistency – liquid, soft diet.
2. Planning and preparation of diets for GI tract diseases-Diarrhoea.
3. Planning and preparation of diets for GI tract diseases-constipation.
4. Planning and preparation of diets for GI tract diseases-peptic ulcer.
5. Planning and preparation of diet in fevers .
6. Planning and preparation of diet in Jaundice and cirrhosis of liver.
7. Planning and preparation of diet for diabetes.
8. Planning and preparation of diet in obesity.
9. Planning and preparation of diet in cardiovascular diseases.
10. Planning and preparation of diet in renal diseases.

PS: Compulsory **Internship** in Hospitals/ industries for one Month

III BSC(MBN & ZNC) NUTRITION & DIETITICS
V SEMESTER - PAPER-V SYLLABUS 2020-21
TITLE: FOOD PROCESSING AND PRESERVATION
(Credit Transfer programme)

UNIT-I

Objectives of food processing, causes of food spoilage. Introduction To Food Processing and Preservation, Processing of cereals: Milling of rice, parboiling, malting.
Cereal products- flours, extruded foods, breakfast cereals ,puffed and flaked cereals. Fermented Cereal Products .

UNIT-II

Processing of **Pulses:** wet process, dry process, grading.
Pulse Products-Puffed Chick Pea, Peas, Quick Cooking Dal, Canned Dry Peas.
Fermeted pulse products.

UNIT-III

Animal foods: Milk and Milk products: Effect of processing on milk, Dairy products-Butter, paneer, Yogurt, Ghee, khoa, Rabbri, milk Powder concentrated and dried products frozen desserts, Fermented milk products- Kefir, Yogurt,cheese. Nonfermented Milk Products- Rubedy, Skimmed Milk, Evaporated Milk.
Meat:-Processing of meat, meat products-Ham, Sausages, hotdogs organ meat **Egg:-** Processing of Eggs-products of egg, low cholesterol egg substitutes
Fish:-Processing of fish and sea foods, by products- Fish meal, Fish Protein concentrate, Fish Liver oils.
Fruits and vegetables – processing - effect of processing, spoilage – Jams, Jellies, Pickles, Squashes, Sauces.

UNIT-IV

Fermented foods- fruit/vegetable-pickles, sour pickles, sauces, .Fruits and vegetables-processing-Effect of processing and preservation-on jams, jellies, squashes, pickles, beverages.

UNIT-V

Nutritional importance of fermented foods, Ready to eat and ready to use products.

PRACTICALS

Visit to food processing units:

1) Grain processing units
2) Dairy industry
3) Bacon factory
4) Mango pulp industry
5) Sugar industry
6) Fermentation units
7) Priya pickles

8) Bottling units
9) **Credit transfer programme**: recognized institutes like KVK YSR Horticulture University, Nutrition Extension Board etc.

III BSC(MBN & ZNC) NUTRITION & DIETITICS
V SEMESTER - PAPER-V SYLLABUS 2020-21
TITLE: FOOD ANALYSIS AND INSTRUMENTATION (Add-on Course)

Objectives:

1. To gain knowledge and hands on experience in various aspects of food analysis.
2. To gain knowledge on instrumentation

UNIT-I

Introduction to Food Chemistry- Moisture in foods, Free & bound water, states of water, factors influencing boiling point and freezing point of water. Physics and Food- Solids, liquids and gases Dispersions- True solutions, colloidal solutions & suspensions , Gels, emulsions and foams. Types of enzymes in foods, functions and use of enzymes in Food Industry.

UNIT-II

General principles of sampling of foods for analysis. Principles and methods of estimation of moisture, Ash as an indicator of total mineral content. Methods of estimation of Ash. Estimation of Calcium, phosphorus & iron from ash solution.

UNIT-III

Carbohydrates- Methods and principles of starch determination, different methods of analysis of sugars. Crude fibre and fibre fractions- methods of determining fibre fractions, soluble, insoluble and neutral detergent fibre estimation. Total fat- methods and principles of estimation of fats, methods of separation of lipid fraction and determination of neutral glycerol, fatty acids, phospholipids and cholesterol in foods

UNIT-IV

Total Proteins- principles and methods of determination of Protein nitrogen and non-protein nitrogen. Principles in Micro and Macro determination of nitrogen by Kjeldahl method, other methods of protein estimation- biuret method, lowry Method, dye binding method and enhanced Dumas method, advantages and disadvantages. Vitamins- methods of estimation of Vitamins from foods, Vitamin C.

UNIT-V

Instrumentation- Principles and application of colorimetry, spectroscopy, flame photometry, atomic absorptiometry, Principles and Application of Chromatographic procedures in food analysis, paper, thin layer and column chromatography with suitable examples. Instrumental measure of viscosity, Rheology and texture of various foods- dough, baked products, fruits, vegetables, dairy products, meat and meat products.

Practicals

1. Different methods of sampling of foods for food analysis.
2. Determination of moisture in different foods
3. Estimation of Ash value in different foods and preparation of Ash solution
4. Estimation of Fibre in foods
5. Estimation of Protein content in foods by Kjeldahl method
6. Estimation of Fat content in foods by Soxhlet method
7. Estimation of total sugars and reducing sugars
8. Estimation Calcium content of foods
9. Estimation of Phosphorus content in foods
10. Estimation of Iron content in foods

11. Estimation of Vitamin C in foods
12. Determination Saponification value, Iodine value, Free fatty acid value and Peroxide value of fats and oils

III BSC (MBN & ZNC) NUTRITION & DIETITICS
V SEMESTER - PAPER-VI SYLLABUS 2020-21
TITLE: FOOD SERVICE MANAGEMENT

UNIT-I

Catering industry-introduction, development and scope, classification of food service institutions-types of menu-menu terminology, menu writing, menu card. Role of computer in food service management.

UNIT-II

Food services:- types and techniques-table service, waiter service, self service, sing point service, socialized service, room service-personnel taking, preparing and delivering the order, menu, telephone etiquettes.

Quality control-standardization, portion size, cost control-labor cost, food cost, over head cost.

UNIT-III

Food service equipments: classifications, selection criteria and methods of purchasing-furniture, linen table ware, special equipments.

UNIT-IV

Personnel management : principles of management, tools of management-organization chart, work simplifications, work schedule, job chart, sanitations and hygiene in FSI- personnel, food, environment.

UNIT-V

Space management:-Kitchen-types, layout, storage-types, layout, service area-layout, design, décor, cleaning area-units, waste disposal.

PRACTICALS

1) Demonstration of skills of a waiter
2) Table setting: South Indian, North Indian, French, Russian, American, Gueridon
3) Self services-buffet service, counter service, cafeteria
4) Banquet services formal and informal
5) Evaluation of a cyclic menu- visit to midday meal in Schools
6) Visit to Restaurant/ fast food Centre
7) Layout of kitchens-evaluations(hostel/canteen/restaurant)
8) Visit to food service institutions fast food centre/hotel/hospital/hostel/canteen

* Organization of a Canteen

III BSC NUTRITION & DIETITICS SYLLABUS 2020-21

VI SEMESTER – PAPER VII
TITLE: COMMUNITY NUTRITION

UNIT-I

Assessment of nutritional status of a community:

A. Direct methods - Anthropometrics, biochemical, clinical, biophysical methods, prophylaxis programmers
B. Direct Methods - diet surveys, Vital statistics.
C. Data collection-tools needed for community survey, data collection, recording of data.

UNIT-II

Nutrition education:

Importance, objective, channels of nutrition education, teaching aids, types and methods of nutrition education, role of national and international agencies in promoting nutrition education.

UNIT-III

Intervention programmes to improve the nutritional status of the vulnerable sections. Applied nutrition programmes -ANP, SNP, ICDS, FWP, IPP, MMP. Prophylaxis programmes- vitamin A, Iron, Iodine

UNIT-IV

Role of National and International agencies in combating malnutrition-NAEP, IRDP, TRYSEM, RLEGP, DWCRA, PAG,WHO,FAO,CARE,UNICEF, and state level programme.

UNIT-V

Food fads and fallacies in India- effect on nutritional status.

PRACTICALS:

1. Assessment of nutritional status by measuring height and weight
2. Assessment of total energy requirement per day of an adolescent girl
3. Diet survey – Low income, High income
4. Clinical examination of community children
5. Detection of food adulterants- household and laboratory techniques
6. Study on food fads and fallacies
7. Low cost recipe demonstration
8. Preparation of visual aids
9. Conducting nutrition education programme
1. Study on food fads and fallacies
2. Low cost recipe demonstration

3. Preparation of visual aids
4. Conducting nutrition education programme

III B. Sc. VI SEMESTER PAPER VIII A_1 NUTRITION AND DIETETICS SYLLABUS 2020-21

TITLE: NUTRITIONAL BIOCHEMISTRY (Cluster elective)

UNIT-I

Metabolism of carbohydrates: Anaerobic (Glycolysis) and aerobic (TCA cycle) pathways. Number of ATP released during aerobic and anaerobic pathways.HMP pathway, role of liver, kidney, hormones, vitamins and minerals in carbohydrate metabolism.

UNIT-II

Metabolism of fats and fatty acids: Blood lipids, oxidation of fatty acids, role of liver in fat metabolism, fatty liver. Biosynthesis of cholesterol, bile acids, prostaglandins.

UNIT-III

Metabolism of Proteins and Amino acids: General pathway of proteins and amino acids metabolism. Ornithine cycle, metabolism of any two essential. High energy compounds.

UNIT-IV

Metabolism of nucleic acids: Composition, structure and biological functions of nucleic acids and their importance.

UNIT-V

Enzymes: Classification, mechanism of action, factors affecting enzyme action, enzyme inhibitors, and enzymes of clinical interest.

PRACTICALS

1. Qualitative analysis of sugars- Glucose, Fructose, Lactose, Maltose
2. Qualitative tests of Proteins and Amino Acids
3. Qualitative tests for -solubility, emulsification, Liebermann Burchard test for cholesterol
4. Estimation of reducing sugar- Benedicts quantitative tesd (DNS method)
5. Estimation of haemoglobin
6. Visit to clinical lab in hospital
7. Paper chromatography

III B. Sc. NUTRITION AND DIETETICS SYLLABUS 2020-21

VI SEMESTER - PAPER VIII A2

TITLE: FOOD MICROBIOLOGY (Cluster Elective)

UNIT-I

Common microbes present in foods-Bacteria, yeast and moulds-general characteristics. - Culture media solid, liquid media etc, isolating pure culture, culturing techniques. Identification of microorganisms-morphology, staining.

UNIT-II

Food poisoning-diseases transmitted through food and water. Testing water for human consumption, treatment of kitchen sewage disposal.

UNIT-III

Common microbes in food-contamination and spoilage

a) Cereals, pulses, nuts
b) Fruits and vegetables
c) Milk and milk products
d) Meat, egg and fish

UNIT-IV

Food preservation- Principles of preservation – Methods, irradiation, pasteurization, cold storage, drying, canning, waxing, fruit juices, jams, jellies, candies, marmalades, effect of concentration**.**

UNIT-V

Food adulteration-definition, types, effect of common adulterants in food. Detection techniques, Food (standards) laws and regulations.

PRACTICALS

1.Examination Of Parts Of Microscope
2.Preperation Of Nutrient Broth And Agar
3.Culturing Methods
4.Staining Methods
A) Simple Staining
B)Gram Positive
C)Gram Negative
5.Estimation Of Microbial Loading Foods
6.Visiting Bacon Factory
7.Visiting Milk Chilling Centre
8.Demonstrating Food Preservation Methods
9.Sterilization Techniques

III BSC NUTRITION & DIETITICS SYLLABUS 2020-21

VI SEMESTER - PAPER-VIII A3

TITLE: Self Study/MOOCs/Project

III BSC NUTITION VI SEMESTER - PAPER-VIII B1 SYLLABUS 2020-21
TITLE: RESEARCH METHODOLOGY (Cluster Elective)

Total Hours : 20 hrs Theory 140 hrs Practical Credits: 6

UNIT-I

IntroductiontoResearchMethodology No. of Hours: 4

Objectives and motivation in research.

UNIT-II

DefiningtheResearchProblem No. of Hours: 4

Selecting and defining a research problem,Reviewing and conducting literature search, Developing a research plan.

UNIT-III

Designing of Experiment No. of Hours: 4

Different experimental designs – single and multifactorial design, Making measurements and sources of error in measurements, Methods of data collection and record keeping.

UNIT-IV

Data Processing and Statistical Analysis No. of Hours: 4

Processing operations, tabulation, and graphical representation, Statistics in research: Concepts of sample and population, Measure of central tendency, dispersion, asymmetry (skewness, kurtosis), Normal distribution (p-value), Statistical tests and hypothesis (Standard error, t-test, chi-square test), and regression analysis,

UNIT-V

Report writing No. of Hours: 4

Writing a research paper - abstract, introduction, methodology, results and discussion.

Practicals

Based on the teaching above, each student will undertake the following exercises.

1. A teacher (adviser) who would guide the student will discuss with student and identify a topic of mutual interest.
2. The student will collect the literature, collate the information and write the same in the form of a term paper with proper incorporation of references using appropriate software such as EndNote.
3. The student will identify scope of research on the topic and will frame objectives to be addressed in the project through a work plan.
4. The student will write standard operating protocols (SOPs) and identify requirement for equipment and reagents.
5. Each student will be asked to make presentation about the project including literature available, objective sought and work plan including methodologies as described above.

Suggested Readings

1. Research in Education (1992) 6th ed., Best, J.W. and Kahn, J.V., Prentice Hall of India Pvt. Ltd.

2. At the Bench: A Laboratory Navigator (2005) Barker, K., Cold Spring Harbor Laboratory Press (New York), ISBN: 978-087969708-2.

3. Research Methodology - Methods and Techniques (2004) 2nd ed., Kothari C.R., New Age International Publishers.

4. Research Methodology: A Step by Step Guide for Beginners (2005) 2nd ed., Kumar R., Pearson Education.

5. Biostatistics: A Foundation for Analysis in the Health Sciences (2009) 9th ed., Daniel W.W., John Wiley and Sons Inc. 6. Statistics at the Bench: A Step-by-Step Handbook for Biologists (2010) Bremer, M. and Doerge, R.W., Cold Spring Harbor Laboratory Press (New York), ISBN: 978-0-879698- 57-7.

III BSC NUTRITION & DIETITICS 2020-21 SYLLABUS
VI SEMESTER - PAPER-VIII B2

TITLE: FOOD QUALITY AND SAFETY (Cluster Elective)

UNIT-I

Introduction to quality control, advantages and disadvantages of QC. Sensory evaluation-what, why & how, types of testing, application in food industry. Safe food preparation practices, contamination- classification of toxic chemicals in foods.

UNIT-II

Quality assurance -consumer specifications for quality factors, testing methods, good manufacturing practices-hygienic requirements, Importance and scope of Law in consumer protection.

UNIT-III

National and international food laws and PFA regulations of food safety. FSS - PFA, FPO, BIS AGMARK, CODEX Alimentaris, WTO, ISO, FAO, WHO, implementation of HACCP.

UNIT-IV

Food additives types – Acids, Acidity regulators, Anticaking agents, Antifoaming agents, Antioxidants, Bulking agents, Food coloring, Color retention agents, Emulsifiers, Flavors, Flavor enhancers, Glazing agents, Humectants, Preservatives, Stabilizers, Sweeteners, Thickeners – Functional Foods – Food Adulteration –Types – Consumer protection act.

UNIT-V

Food packaging- Packaging materials their properties, importance of packaging, functions of packaging, primary elements of package forms, material and decoration. Various package forms- products, tubes, tetra packs, cans bottles. Advantages and limitations of packaging material, A1 glass, tinned steel plate, carbon board, paper flexible, films, laminates and others.

PRACTICALS

1. Testing quality of different foods
2. Detection of adulterants in foods
3. Detection of food additives in foods
4. Sensory evaluation tests- Rating tests, Difference tests
5. Visit to rice processing industry
6. Visit to Bakery
7. Visit to milk processing industry
8. Visit to meat processing industry
9. Visit to oil processing industry
10. Visit to sugar processing industry
11. Visit to FCI

III BSC NUTITION VI SEMESTER - PAPER-VIII B3 SYLLABUS 2020-21
TITLE: NUTRITION FOR FITNESS (Self Study/MOOCs/Project)

OBJECTIVES:

- To create awareness on importance of fitness to lead healthy life.
- To educate students on various types of exercises for diseased conditions.

UNIT I: Introduction to Fitness and Training Benefits of Exercise Components of physical fitness Alternative systems for Health and fitness

UNIT II : Holistic approach to management of health and fitness including diet and exercise (Aerobic and anaerobic).

UNIT III: Musculo-skeletal Systems - Anaerobic exercise effect on musculoskeletal system.Endurance, strength/ Power, Speed, Coordination, agility, balance etc. Effect of aerobic exercise on heart rate, blood pressure and lung function.

UNIT IV: Water and Electrolyte Balance: Regime of hydration and dehydration. Symptoms and effect of dehydration. Sports Drink. Nutragenic aids and supplements.

UNIT V: Formulating dietary guidelines for- Fitness and health, Obesity management and Critically analyzing different established weight reduction diet plans. Management of diabetes mellitus and Management of CVD

REFERENCES:

1. Mahan, L.K. & Ecott-Stump, S. (2000): Krause's Food, Nutrition and Diet Therapy, 10th Edition, W.B. Saunders Ltd.
2. Whitney, E.N. & Rolfes, S.R. (1999): Understanding Nutrition, 8th Edition, West/ Wadsworth, An International Thomson Publishing Co.
3. Ira Wolinsky (Ed) (1998): Nutrition in Exercise and Sports, 3rd Edition, CRC Press.
4. Parizkova, J. Nutrition, physical activity and health in early life, Ed. Wolinsky, I., CRC Press.
5. Shils, M.E., Olson, J.A., Shike, N. and Ross, A.C. (Ed) (1999): Modern Nutrition in Health & Disease, 9th Edition, Williams & Wilkins.
6. McArdle, W. Katch, F. and Katch, V. (1996) Exercise Physiology. Energy, Nutrition and Human Performance, 4th edition, Williams and Wilkins, Philadelphia.

PRACTICALS

3HOURS/WEEK
14 WEEKS / SEMESTER

1. Effect of Specific Nutrients on Work Performance and Physical Fitness and Training diets.
2. Market survey and consumption pattern of nutragenic aids and supplements.
3. Exercise prescription in Obesity and weight control – Prevention of weight cycling.
4. Exercise prescription in Diabetes
5. Exercise prescription in Hypertension and Coronary Heart Disease
6. Exercise prescription in Osteo Arthritis and Osteoporosis
7. Exercise prescription in Spondylitis Back aches

8. Exercise regime for pre and post-natal fitness.

DEPARTMENT OF MICROBIOLOGY

The meeting of the Boards of Studies in Microbiology was held on Wednesday, 04.03.2020 at 11.00 a.m. in the Microbiology Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.K.Aruna, ASD Govt. Degree College, Kakinada

External experts:

3. Dr.J.Balaji Chandramouli, Adikavi Nannaya University, Rajamahendravaram

Faculty:

4. Mrs.A.Padmavathi
5. Mrs.Y.Neeraja
6. Sr.P.Sunila Rani
7. Ms.R.Ripsee
8. Mrs.S.Jayasheela

Students:

9. N.R.D.Vineela, III B.Sc., MB Chemistry
10. G.Nagamani, III B.Sc., MB Computers

Resolutions:

The resolutions were as follows:

1. It was decided to continue the existing papers for all the semesters as the syllabus was thoroughly revised during the previous academic year.
2. It was resolved to give additional input in each paper (Additional input is not included for examination).
   They are as follows:
   MBI – Isolation techniques
   MBII – Isolation of photoautotrophs / Enzyme Immobilization
   MBII – Isolation of RNA from Yeast
   MBIV – Cross matching
   MBV – Enrichment culturing techniques
   MBVI – Wine production
   MBVII – Isolation of Normal Flora from tooth
   MBVIIIA1 – Biofertilizeres production – Azolla
3. It was also resolved to introduce an Add-on course / Certificate Course – "Public Health Microbiology".

DEPARTMENT OF MICROBIOLOGY

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Introduction to Microbiology and Microbial Diversity
	II	Paper II	Enzymology and Microbial Metabolism
II Year	III	Paper III	Microbial Genetics and Molecular Biology
	IV	Paper IV	Immunology & Medical Microbiology
III Year	V	Paper V	Agricultural and Environmental Microbiology
		Paper VI	Food and Industrial Microbiology
	VI	Paper VII	Microbial Diagnosis in Health clinics
		Paper VIII	A1- Biofertilizers and Biopesticides A2- Advanced Cell Biology A3- Self study/Project/MOOCS
PROJECT WORK			

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU
I BSC I SEMESTER MICROBIOLOGY PAPER-I SYLLABUS 2020-21
TITLE: INTRODUCTION TO MICROBIOLOGY & MICROBIAL DIVERSITY

UNIT-I

History and mile stones in microbiology. Contributions of Anton von Leeuwenhoek, Edward Jenner, Louis Pasteur, Robert Koch, Ivanowsky Alexander Fleming. Applications of microbiology - Classification of microorganisms – Haeckel's three Kingdom concept, Whittaker's five kingdom concept, three domain concept of Carl Woese. Outline classification of bacteria as per the second edition of Bergey's Manual of Systematic Bacteriology.

UNIT-II

General characteristics of Archaea, Mycoplasmas and Cyanobacteria. Ultra structure of Prokaryotic cell- Variant components and invariant components.General characteristics of viruses. Morphology, Structure of TMV and HIV.

UNIT-III

General characteristics and outline classification of Fungi, Algae and Protozoa. Principles of microscopy - Bright field and Electron microscopy (SEM and TEM).

UNIT-IV

Staining Techniques –Simple and Differential (Gram Staining and Spore Staining). Sterilization and disinfection techniques - Physical methods – autoclave, hot- air oven, pressure cooker, laminar air flow, filter sterilization, Radiation methods – UV rays, Gamma rays. Chemical methods – alcohols, aldehydes, fumigants, phenols, halogens and hypochlorites.

UNIT-V

Pure culture techniques – dilution-plating, Streak-plate, Spread-plate, Pour-Plate and micromanipulator. Enrichment culturing. Preservation of microbial cultures – sub culturing, overlaying cultures with mineral oils, lyophilization, sand cultures, storage at low temperature.

PRACTICAL

1. Microbiology Good Laboratory Practices and Bio-safety
2. Preparation of culture media for cultivation of bacteria
3. Preparation of culture media for cultivation of fungi
4. Sterilization of medium using Autoclave
5. Sterilization of glassware using Hot Air Oven
6. Light compound microscope and its handling
7. Microscopic observation of bacteria (Gram +ve bacilli and cocci, Gram –ve bacilli), Cyanobacteria, Algae and Fungi
8. Simple staining
9. Gram's staining
10. Isolation of pure cultures of bacteria by streaking method
11. Diagramatic or Electron photomicrographic observation of TMV, HIV, T4 phage and adenovirus

I BSC II SEMESTER MICROBIOLOGY PAPER-II SYLLABUS 2020-21
TITLE: ENZYMOLOGY AND MICROBIAL METABOLISM

UNIT-I

Properties and classification of Enzymes. Biocatalysis- induced fit and lock and key models. Coenzymes and Cofactors. Factors affecting catalytic activity. Inhibition of enzyme activity-competitive, noncompetitive, uncompetitive and allosteric. Factors affecting catalytic activity.

UNIT-II

Microbial Nutrition –Nutritional requirements and uptake of nutrients by cells. Growth media-synthetic, complex, selective, enrichment and differential media.

UNIT-III

Microbial Growth- different phases of growth in batch cultures, Synchronous, continuous, biphasic growth. Factors influencing microbial growth. Methods for measuring microbial growth – Direct microscopy, viable count estimates, turbiodometry and biomass.

UNIT-IV

Aerobic respiration -Glycolysis, HMP path way, ED path way, TCA cycle, Electron transport, oxidative and substrate level phosphorylation.

UNIT-IV

Anaerobic respiration (Nitrate). Fermentation - Alcohol and lactic acid fermentations. Outlines of oxygenic and anoxygenic photosynthesis in bacteria.

PRACTICALS

1. Immobilization of Whole microbial cells
2. Preparation of Synthetic and differential media
3. Preparation of Complex Media
4. Isolation of photoautotrophs
5. Isolation of chemoautotrophs
6. Determination of viable count of bacteria
7. Bacterial growth curve
8. Factors affecting bacterial growth – pH
9. Factors affecting bacterial growth – Temperature
10. Factors affecting bacterial growth –Salts

II BSC III SEMESTER MICROBIOLOGYPAPER-III SYLLABUS 2020-21
TITLE: MICROBIAL GENETICS AND MOLECULAR BIOLOGY

UNIT-I

DNA and RNA as genetic material Structure of prokaryotic DNA. Extra chromosomal genetic elements – Plasmids and transposons Replication of DNA – Semi conservative mechanism, Enzymes involved in replication.

UNIT-II

Mutations – spontaneous and induced, base pair changes, frame shifts, deletions, inversions, tandem duplications, insertions. Mutagens - Physical and Chemical mutagens. Outlines of DNA damage and repair mechanisms. Genetic recombination in bacteria – Conjugation, Transformation and Transduction.

UNIT-III

Concept of gene – Muton, Recon and Cistron. One gene one enzyme and one gene one polypeptide hypotheses. Genetic code. Regulation of gene expression in bacteria – *lac* operon.

UNIT-IV

Types of RNA and their functions. Protein synthesis – Transcription and Translation in Prokaryotes

UNIT-V

Basic principles of genetic engineering. Restriction endonucleases, DNA polymerases and ligases. Vectors. Bacteriophage, Plasmid, PBR^{322} , Shuttle. Polymerase chain reaction. Genomic and cDNA libraries. General account on application of genetic engineering in industry, agriculture and medicine.

PRACTICAL

1. Study of different types of DNA and RNA using micrographs and model / schematic representations
2. Study of semi-conservative replication of DNA through micrographs / schematic representations
3. Isolation of genomic DNA from *E. coli*
4. Estimation of DNA using UV spectrophotometer.
5. Resolution and visualization of DNA by Agarose Gel Electrophoresis.
6. Resolution and visualization of proteins by Polyacrylamide Gel Electrophoresis (SDS-PAGE).
7. Problems related to DNA and RNA characteristics, Transcription and Translation.
8. Induction of mutations in bacteria by UV light.
9. Instrumentation in molecular biology – Ultra centrifuge, Transilluminator, PCR

II BSC IV SEMESTER MICROBIOLOGYPAPER-IV SYLLABUS 2020-21
TITLE: IMMUNOLOGY AND MEDICAL MICROBIOLOGY

UNIT-I

Types of immunity – innate and acquired; active and passive; humoral and cell-mediated immunity. Primary and secondary organs of immune system – thymus, bursa fabricus, bone marrow, spleen and lymph nodes. Cells of immune system. Identiification and function of B and T lymphocytes, null cells, monocytes, macrophages, neutrophils, basophils and eosinophils.

UNIT-II

Antigens and Antibodies: Types of antigen-antibody reactions - Agglutinations, Precipitation, Neutralization, complement fixation, blood groups. Labeled antibody based techniques – ELISA, RIA and Immuno fluroscence. Polyclonal and monoclonal antibodies – production and applications. Concept of hypersensitivity and Autoimmunity.

UNIT-III

Normal flora of human body: Host pathogen interactions: infection, invasion, pathogen, pathogenicity, virulence. General principles of diagnostic microbiology- collection, transport and processing of clinical samples, cultural, biochemical, serological and molecular methods.

UNIT-IV

Antibacterial Agents - Penicillin, Streptomycin. Antifungal agents – Amphotericin B - Antiviral substances - Amantadine - Tests for antimicrobial susceptibility – Kirby Bauer method - Vaccines – Natural and recombinant.

UNIT-V

General account on microbial diseases – causal organism, pathogenesis, epidemiology, diagnosis, prevention and control. Bacterial diseases – Tuberculosis and Typhoid. Fungal diseases – Candidiasis. Protozoal diseases – Malaria. Viral Diseases – Hepatitis - A and AIDS

PRACTICAL

1. Identification of human blood groups.
2. Separate serum from the blood sample (demonstration).
3. Estimation of blood haemoglobin.
4. Total Leukocyte Count of the given blood sample.
5. Differential Leukocyte Count of the given blood sample.
6. Immunodiffusion by Ouchterlony method.
7. Identify bacteria (*E. coli, Pseudomonas, Staphylococcus, Bacillus*) using laboratory strains on the basis of cultural, morphological and biochemical characteristics: IMViC, urease production and catalase tests
8. Isolation of bacterial flora of skin by swab method.
9. Antibacterial sensitivity by Kirby-Bauer method
10. Study symptoms of the diseases with the help of photographs: Anthrax, Polio, Herpes, chicken pox, HPV warts, Dermatomycoses (ring worms)

11. Study of various stages of malarial parasite in RBCs using permanent mounts.

III BSC V SEMESTER MICROBIOLOGY PAPER-V SYLLABUS 2020-21
TITLE: AGRICUTURAL & ENVIRONMENTAL MICROBIOLOGY

UNIT-I

Plant microbe association: Physical and chemical characteristics of soil. Rhizosphere and Phyllosphere.Plant growth promoting microorganisms- mycorrhizae, rhizobia, Azospirillium, Azotobacter, cyanobacteria, and phosphate solubilizing microorganisms.Outlines of biological nitrogen fixation (Symbiotic, Non-symbiotic).

UNIT-II

Plant pathology: Symptoms of plant diseases caused by fungi, bacteria and viruses.Plant diseases caused by fungi (ground nut rust). Bacteria (angular leaf spot cotton) Viruses (tomato leaf curl). Principles of plant diseases control.

UNIT-III

Soil microbiology: Microorganisms of environment (soil, air, water). Role of microorganisms in nutrient cycling (carbon, nitrogen, sulphur). Microbial interactions-mutualism, commensalism, antagonism, competition, parasitism, predation.

UNIT-IV

Water microbiology: Sanitation of potable water - *E.coli* and *Streptococcus faecalis* as indicators of water pollution. Sewage treatment (primary, secondary and tertiary).

UNIT-V

Biodegradation: Outlines of biodegradation of environmental pollutants – pesticides and detergents. Microbiology of air and air sampling methods.

Practicals

1. Isolation and enumeration of major groups of microorganisms from rhizosphere and nonrhizosphere.
2. Isolation and enumeration of major groups of microorganisms from Phyllosphere.
3. Study of root nodules and isolation of *Rhizobium* from legume root nodules.
4. Isolation of *Azospirillum / Azotobacter.*
5. Staining and observation of vesicular-arbuscular mycorrhizal (VAM) fungi.
6. Observation of plant diseases of local importance – Rusts, smuts, powdery mildews, tikka disease of groundnut, citrus canker, bhendi yellow vein mosaic, tomato leaf curl, little leaf of brinjal.
7. Isolation of antagonistic microorganisms by crowded plate technique.
8. Isolation of microorganisms of air by Petri plate exposure method.
9. Determination of biological oxygen demand (BOD) of polluted water.

10. Microbial testing of water by coliform test (multiple tube fermentation method).

III BSC V SEMESTER MICROBIOLOGY PAPER-VI SYLLABUS 2020-21
TITLE: FOOD AND INDUSTRIAL MICROBIOLOGY

UNIT-I

Food spoilage and food poisoning: Microorganisms of food spoilage and their sources. Spoilage of different food materials-fruits, vegetables, meat and canned foods.Food intoxication (botulism and staphylococci poisoning). Food borne diseases (salmonellosis and shigellosis) and their detection. General account of food preservation.

UNIT-II

Fermented foods and food preservation: Microbiological production of fermented foods-bread, cheese. Biochemical activities of microbes in milk. Microorganisms as food- SCP, Mushrooms (white button, oyster, paddy straw). Concept of probiotics.

UNIT-III

Principles of industrial microbiology: Microorganism of industrial importance-yeast, moulds, bacteria, actinomycetes. Screening and isolation of industrially important microorganisms.Outlines of strain improvement.

UNIT-IV

Fermentation technology: Types of fermentation - aerobic, anaerobic, batch, continuous, submerged, surface, solid state. Design of a stirred tank reactor fermentor. Fermentation media.

UNIT-V

Fermentative production: Industrial production of alcohols (ethyl alcohol), Beverages (beer). Enzymes (amylases), antibiotics (penicillin), organic acid (citric acid), biofuels (biogas-methane).

Practicals

.Observation of different spoiled foods.

2.Isolation of fungi and bacteria from spoiled fruits and vegetables.

3.Determination of microbiological quality of milk – MBRT

4.Isolation of antagonistic microorganisms by crowded plate technique.

5. Isolation of microorganisms of air by Petri plate exposure method.

6. Determination of biological oxygen demand (BOD) of polluted water.

7. Microbial testing of water by coliform test (multiple tube fermentation method)

8. Isolation of amylase-producing organisms.

III BSC VI SEMESTER MICROBIOLOGY PAPER-VII SYLLABUS 2020-21
TITLE: MICROBIAL DIAGNOSIS IN HEALTH CLINICS

UNIT-I

Importance of diagniosis of diseases: Bacterial- E.Coli,StaphyloCoccus,Streptococcus,Viral-Influenza,Fungal-Dermatophyta and Protozoan-Amoebiasis,Filariasis Diseases of various human body systems,Disease associated clinical samples for diagnosis.

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UNIT-II

Collection of Clinical Samples:How to collect clinical samples (oral cavity,throat,Skin, Blood, CSf,urine and Faeces) and precautions required.Method of transport of clinical samples to laboratory and storage.

UNIT-III

Direct microscopic Examination and cukture: Examination of sample bt staining-Gram StainZiehl-Nelson staining for tuberculosis, QBC technique - Malaria .Preparation and use of clture media-Blood Agar,Chacolate Agar,Lowenstein-jensen medium,MacConkey Agar,Distinct colony properties of various bacterial pathogens.

UNIT-IV

Serological and Molecular Methods: Serologiccal Methods – Agglutination, ELISA, Immunofluorescence, Nucleic acid based methods – PCR, Nucleic acid Probes.

UNIT-V

Testing for antibiotic sensitivity in bacteria: Importance,determination of resistance/ Sensitivity of bacteria using disc diffusion method, Determination of minimal inhibitory concentration(MIC) of an antibiotic by serial double dilution method.

Practicals:

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1. Preparation of Differential and selective / Enrichment media for identification of Bacteria- EMB agar, McConkey agar, Mannitol Salt agar, Deoxycholate Citrate agar, TCBS agar.
2. Antimicrobial senssitivity by Kirby-Bauer method.
3. MIC of an antibiotic by double dilution method.
4. WIDAL test
5. PCR
6. Ziehl Neelson's staining
7. QBC technique - Malaria
8. Identification of Bacteria from urine sample
9. Identification of bacteria from wound/pus

III BSC VI SEMESTER MICROBIOLOGY PAPER-VIII A1 SYLLABUS 2020-21
TITLE: BIOFERTILIZERS AND BIOPESTICIDES (Cluster Elective)

UNIT-I

Biofertilizers: General account of the microbes used as biofertilizers for various crop plants and their advantages over chemical fertilizers. Symbiotic N2 Fixers: Rhizobium - Isolation, Characteristics, types, inoculums production and field application,legume/pulses plants.
Frankia from non-legumes and characterization.
Cyanobacteria from Azolla,Characterization, mass multiplication, role in rice cultivation, Crop response, field application.

UNIT-II

Non symbiotic Nitrogen Fixers: Free Living Azospirillium, Azotobacter - isolation, characterization, mass inoculum production and field application.

UNIT-III

Phosphate Solubilizers: Phosphate Solubilizing microbes - isolation, characterization, mass inoculum production, field application.

UNIT-IV

Mycorrizal Biofertilizers: Importance of mycorrizal inoculums,types of mycorrhizae and associated plants,Mass inoculum production of VAM, field applications of Ectomycorrhizae and VAM.

UNIT-V

Bioinsecticides: General account of microbes used as bioinsecticiedsand their advantages over synthetic pesticides,Bacillus thuringiensis,production,Field applications,Viruses-Cultivation and field application.

Practicals:

1. Isolation of Rhizobium from root nodules.
2. Isolation of Phosphate solubilizers from soil.
3. Staining and observation of VAM.

- A visit to Biofertilizer industry.

III BSC VI SEMESTER MICROBIOLOGY PAPER-VIII A2 SYLLABUS 2020-21
TITLE: ADVANCED CELL BIOLOGY (Cluster Elective)

UNIT-I

Plasma Membrane and Nuclear Transport : Properties and Composition of Cell Membrane; Structure of Nuclear Envelope; Nuclear Pore Complex; Transport Across Nuclear Envelope; Regulation of Nuclear Protein Import and Export.

UNIT-II

Cell-Cell Interaction: Cell-Cell Interactions and Cell-Matrix Interactions; Components of Extracellular Matrix: Collagen and Non-Collagen Components; Tight Junctions; Gap Junctions; Desmosomes; Hemidesmosomes; Focal Adhesions And Plasmodesmata; Cell Wall; Role Of Cell Interaction In Development.

UNIT-III

Cell Cycle and Programmed Cell Death: Overview of The Cell Cycle; Eukaryotic Cell Cycle; Events Of Mitotic Phase; Cytokinesis; Events Of Meiosis; Regulation Of Cell Division And Cell Growth;
Apoptosis: phenomenon of apotosis, apoptosis is aphysiological process., death receptors, apoptosis and disease.

UNIT-IV

Cancer Biology: Characteristic of Cancer cell, Types of tumours, how cell becomes cancerous, Treating cancers

UNIT-V

Tools and techniques in Cell Biology: Microscopy, autoradiography, cell fraction, plant cell and tissue culture cytochemical methods, selected techniques and animal cell culture

Practicals:
1. Microscopy - cell biology
2. Autoradiography visit to cancer hospital.
3. Cell division - mitosis
4. Cell fractionation method

III BSC VI SEMESTER MICROBIOLOGY PAPER-VIII A3 SYLLABUS 2020-21
TITLE: MUSHROOM TECHNOLOGY (Cluster Elective)

UNIT-I

Introduction: Morphology, classification; and edibility and poisonous properties, nuclear behavior and ultra structural changes during the development of the mushroom fungi.

UNIT-II

Biology of Mushrooms: Button, straw&Oyster- General morphology, distinguishing characteristics, spore germination and life cycle -Agaricus,volvariella.

UNIT-III

Cultivation: Conditions for tropical and temperate countries, isolation, spawn production, growth media, spawn running and harvesting of mushrooms.

UNIT-IV

Biological importance & Health benefits of Mushroom: Nature, medicinal and nutritional value of mushrooms,composting:importance in waste recycling, Health benefit Antiviral value, antibacterial effect, antifungal effect, anti-tumour effect, haematological value cardiovascular &renal effect, in therapeutic diets, adolescence, for aged persons & diabetes mellitus.

UNIT-V

Cultivation of Button Mushroom: Collection of raw materials, materials, compost & composting, spawn & spawning, casing & case run, croping & crop management, picking & packing.
Visit to relevant Labs/Field Visits.

Practicals
1. Identification of edible and poisonous mushrooms
2. Microscopical obseravation of mushrooms
3. Isolation and purification-Spawn preparation
4. Cultivation of mushroom;Tropical and temperate types using compost/paddy straw/agriculture wastes/sugar cane wastes etc, spawn running and harvesting.
5. Determination of nutritional value: protein, sugars, lipids, crude fiber, vitamins, minerals contents etc.
6. Visit to mushroom industry.

DEPARTMENT OF BIOCHEMISTRY

The meeting of the Boards of Studies in Biochemistry was held on Thursday, 05.03.2020 at 11.30 a.m. in the Biochemistry Department**.**

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Ms.D.Madhuri Devi, ABN & C.R.R. College, Kovvuru.

Subject Expert:

3. Sri M.Rambabu, B.V.Raju College, Bhimavaram.

Faculty:

4. Mrs.D.Lumbini Devi
5. Mrs.B.Lakshmi Sudha

Students:

6. T.M.Sowjanya, III B.Sc. M.B.N.
7. V.Lalitha Pavani, III B.Sc. M.B.C.

Resolutions:

After thorough review it is resolved to follow the existing syllabus for all the semesters.

- It was resolved to introduce internship's after 1st year in fields like Diagnostics and Clinical Biochemistry.

- It was resolved to follow the existing question paper pattern for both internal Assessments and Semester end Examination.

DEPARTMENT OF BIOCHEMISTRY

PAPER TITLES

	Semester	Paper	Title of the Paper
I Year	I	Paper I	Bio Molecules
	II	Paper II	Analytical Techniques
II Year	III	Paper III	Enzymology and Metabolism - I
	IV	Paper IV	Metabolism II
III Year	V	Paper V	Physiology and Nutrition
		Paper VI	Clinical Biochemistry and Endocrinology
	VI	Paper VII	Cellular and Molecular Biology
		Paper VIII a	Advanced Cell Biology
		Paper VIII b	Research Methodology
		Paper VIII c	Genetic Engineering (Self Study Course)/Project work /MOOCs

CH.S.D.ST.THERESA'S COLLEGE FOR WOMEN (A), ELURU

I BSC I SEMESTER PAPER I BIOCHEMISTRY SYLLABUS 2020-21

TITLE: BIOMOLECULES

Unit - I: Carbohydrates: 12 hours

Carbohydrates: Classification, monosaccharides, D and L designation, open chain and cyclic structures, epimers and anomers, mutarotation, reactions of carbohydrates (due to functional groups - hydroxyl, aldehyde and ketone. Amino sugars, Glycosides. Structure and biological importance of disaccharides (sucrose, lactose, maltose, isomaltose, trehalose), tri-saccharides (raffinose, melezitose), structural polysaccharides (cellulose, chitin, pectin) and storage polysaccharides (starch, inulin, glycogen). Glycosaminoglycans, Bacterial cell wall polysaccharides. Outlines of glycoproteins, glycolipids and blood group substances.

Unit – II: Lipids: 12 hours

Lipids: Classification, saturated and unsaturated fatty acids, structure and properties of fats and oils (acid, saponification and iodine values, rancidity). General properties and structures of phospholipids. Prostaglandins- structure, types and biological role. Lipoproteins- types and functions, Bio-membranes-formation of micelles, bilayers, vesicles, liposomes. Membrane composition and organization - Fluid mosaic mode

Unit-III: Amino Acids 12 hours

Amino Acids: Classification, structure, stereochemistry, chemical reactions of amino acids due to carbonyl and amino groups. Titration curve of glycine and px values. Essential and non-essential amino acids, non-protein amino acids. Peptide bond - Nature and conformation. Naturally occurring peptides - glutathione, enkephalin.

Unit-IV: Proteins: 12 hours

Proteins Classification based on solubility, shape and function. Determination of amino acid composition of proteins. General properties of proteins, denaturation and renaturation of proteins. Structural organization of proteins- primary, secondary, tertiary and quaternary structures (Eg. Hemoglobin and Myoglobin).

Unit-V: Nucleic acids and porphyrins: 12 hours

Types of RNA and DNA. Structure of purines and pyrimidines, nucleosides, nucleotides. Stability and formation of phosphodiester linkages. Effect of acids, alkali and nucleases on DNA and RNA. Structure of Nucleic acids- Watson-Crick DNA double helix structure, denaturation and renaturation kinetics of nucleic acids-, Tm-values and their significance, cot curves and their significance.

Structure of porphyrins: Identification of Porphyrins, Protoporphyrin, porphobilinogen properties, Structure of metallo-porphyrins–Heme, cytochromes and chlorophylls.

List of practical Experiments:

1. Qualitative identification of carbohydrates- glucose, fructose, ribose/xylose, maltose, sucrose, lactose, starch/glycogen.
2. Qualitative identification of amino acids-histidine, tyrosine, tryptophan, cysteine, arginine.
3. Qualitative identification of lipids- solubility, saponification, acrolein test, Salkowski test, Lieberman-Burchard test.
4. Preparation of Osazones and their identification.
5. Absorption maxima of colored substances-p-Nitrophenol, Methyl orange.

I BSC II SEMESTER PAPER II BIOCHEMISTRY SYLLABUS 2020-21
TITLE: ANALYTICAL TECHNIQUES

Unit - I: Biophysical Concepts & Cell disruption methods 12 hours

Water as biological solvent, Buffers, measurement of pH, electrodes, Biological relevance of pH, pKa value, Electrical conductivity, analysis of drinking water and pond water, Total dissolved salts (TDS), BOD, COD, soil analysis (texture, organic matter, elements), Methods of tissue homogenization: (Potter-Elvejham, mechanical blender, sonicator and enzymatic).

Unit – II: Microscopy and Centrifugation 12 hours

Microscopy: Basic principles of light microscopy, phase contrast, electron microscope and fluorescent microscope and their applications. Centrifugation techniques, principles and applications- differential, density gradient. Ultra-centrifugation- preparative and analytical

Unit-III: Chromatographic techniques 12 hours

Chromatography - Principle and applications, Types of chromatographic techniques - Paper chromatography- solvents, Rf value, applications; Thin layer chromatography- principle, choice of adsorbent and solvent, Rf value, applications; Gel filtration, Ion-exchange- principle, resins, action of resins, experimental techniques, applications, separation of metal ions; Affinity chromatography.

Unit-IV: Spectroscopy and tracer techniques 12 hours

Electromagnetic radiation, Beer-Lambert's law.

Colorimetry and Spectrophotometry, spectrofluorimetry, flame photometry. Tracer techniques: Radio isotopes, units of radio activity, half-life, β and γ- emitters, use of radioactive isotopes in biology, ELISA.

Unit-V: Electrophoresis 12 hours

Electrophoresis- principles and applications of paper, polyacrylamide (native and SDS) and agarose gel electrophoresis, isoelectric focusing, immune-electrophoresis-types and applications.

1. Lab/Practical/Experiments/ of practical Experiments:

1. Preparation of Buffers
2. Sub cellular fraction using Centrifuge
3. Isolation of RNA and DNA from tissue/culture.
4. Qualitative Identification of DNA, RNA and Nitrogen Bases
5. Isolation of egg albumin from egg white.
6. Isolation of cholesterol from egg yolk.
7. Isolation of starch from potatoes.
8. Isolation of casein from milk.
9. Separation of amino acids by paper chromatography.
10. Determination of exchange capacity of resin by titrimetry.
11. Separation of serum proteins by paper electrophoresis.

II BSC III SEMESTER PAPER III BIOCHEMISTRY SYLLABUS 2020-21
TITLE: ENZYMOLOGY AND METABOLISM – I

UNIT-I

Introduction to biocatalysis, difference between chemical and biological catalysis. Nomenclature and classification of enzymes. Enzyme specificity, Active site. Principles of energy of activation, transition state. Interaction between enzyme and substrate -lock and key, induced fit models. Definition of holo-enzyme, apoenzyme, coenzyme, cofactor. Fundamentals of enzyme assay, enzyme units.

UNIT-II

Factors affecting the catalysis substrate concentration. pH, temperature. Michaelis- Menten equation for uni-substrate reaction [derivation not necessary]. Significance of K_m and V_{max}. Enzyme inhibition –irreversible and reversible inhibitions – types of reversible inhibitions-competitive and non-competitive.

UNIT-III

Outline of mechanism of enzyme action acid-base catalysis, covalent catalysis, electrostatic catalysis and metal ion catalysis. Regulation of enzyme activity-allosterism and cooperativity. ATPase as an allosteric enzyme, covalent modulation – covalent phosphorylation of phosphorylase. Zymogen activation- activation of trypsinogen and chymotrypsinogen. Isoenzymes[LDH]. Multienzyme complexes [PDH] .Ribozyme.

UNIT-IV

Carbohydrate metabolism: Concept of anabolism and catabolism. Glycolytic pathway, energy yield. Fate of pyruvate, formation of lactate and ethanol, Pasteur effect, citric acid cycle, regulations, energy yield amphipathic role. Anaplerotic reactions. Glycogenolysis and glycogenesis. Pentose phosphate pathway. Gluconeogenesis

UNIT-V

Bioenergetics: Energy transformation in the living system, Free energy concept. Exergonic and endergonic reactions, High energy compounds. Phosphate group transfer potential. Substrate level phosphorylation. Definition, enzymes involved-oxidases, dehydrogenases and oxygenases. Redox reactions. Redox couplers. Reduction potential. Standard reduction potential of serum biochemically important half reactions.

Biological oxidation: Ultra structure of mitochondria. Electron transport chain and carriers involved. Oxidative phosphorylation. Theories of oxidative phosphorylation-Mitchell's chemiosmotic theory. FO-F1-ATPase. Inhibitors of respiratory chain and oxidative phosphorylation, uncouplers. Formation of reactive oxygen species and their disposal through enzymatic reactions.

Practicals - Enzymology

1. Assay of amylase
2. Assay of urease
3. Assay of catalase.
4. Assay of phospahatase.
5. Determination of optimum temperature for amylase.
6. Determination of optimum ph for phosphatase.

II BSC IV SEMESTER PAPER IV BIOCHEMISTRY SYLLABUS 2020-21
TITLE: METABOLISM – II

UNIT-I

Lipid metabolism: Catabolism of fatty acid (β-oxidation) with even and odd number of carbon atoms, ketogenesis, *de novo* synthesis of fatty acids. Biosynthesis and degradation of triacylglycerol. Biosynthesis of cholesterol.

UNIT-II

Amino Acid Metabolism: General reaction of aminoacid metabolism-transamination, decarboxylation and deamination. Urea cycle and regulation. Catabolism of carbon skeleton of aminoacid, glycogenic and ketogenic aminoacids. Metabolism of glycine, serine, Methionine, phenylalanine, tyrosine, valineand threonine. Inborn errors of aromatic and branched chain aminoacid metabolism.

UNIT-III

Nucleic Acid Metabolism: Biosynthesis and regulation of purine and pyramidine nucleotides. De novo and salvage pathways. Catabolism of purine and pyrimidines. Biosynthesis of deoxyribonucleotides-ribonucleotide reductase and thymidylate synthase and their significance. Disorder of nucleotide metabolism- Gout, Lesch-Nyhan syndrome.

UNIT-IV

Heme Metabolism: Biosynthesis and degradation of heme, porphyrinuria conditions jaundices.

UNIT-V

Inborn errors of metabolism of carbohydrates, lipids, amino-acids and nucleotide metabolism

Practicals – Quantitative Analysis

1) Estimation of amino acids by Ninhydrin method.
1) Estimation of protein by Biuret method.
2) Estimation of protein by Lowry's method.
3) Estimation of glucose by DNS method.
4) Estimation of glucose by Benedict's titrimetric method.
5) Estimation of total carbohydrates by Anthrone method.

III BSC V SEMESTER PAPER V BIOCHEMISTRY SYLLABUS 2020-21

TITLE: PHYSIOLOGY AND NUTRITION

UNIT-I

Human digestive system. Digestion and absorption of carbohydrates, lipids and proteins.

UNIT-II

Composition of blood and coagulation of blood. Hemoglobin and transport of gases in blood (oxygen and CO_2). Plasma proteins in health and diseases. Disorders of blood coagulation (haemophilia). Types of anemia, haemoglobinopathies-sickle cell anemia and thalassemias.

UNIT-III

Muscle-kinds of muscles, structure of myofibril, organization of contractile proteins and mechanism of muscle - contraction. Heart - structure of heart, cardiac cycle, cardiac factors, controlling blood pressure.

UNIT-IV

Nutrition: Balanced diet. Calorific values of foods and their determination of bomb calorimeter. BMR and factor affecting it. Specific dynamic action of foods. Energy requirements and recommended dietary allowance (RDA) for children, adults, pregnant and lactating women. Sources of complete and incomplete proteins. Biological value of proteins. Role of essential fatty acids in human nutrition. Malnutrition-Kwashiorkar, Marasmus, PEM, obesity and starvation.

UNIT-V

Vitamins-sources, structure, biochemical roles, deficiency disorders of water and fat soluble vitamins. Introduction to neutraceutical and functional foods, bulk and trace elements-Ca, Mg. Fe, I, Cu, Mo, Zn, Se and F.

Practicals - Clinical Biochemistry -1

- Estimation of vitamin c by 2,6 dichlorophenol indophenols method
- Estimation OF haemoglobin in blood.
- Total count –RBC & WBC.
- Differential count of leucocytes.
- Determination of blood group & R^h typing.
- Urine analysis for albumin,sugar and ketone bodies.

III BSC V SEMESTER PAPER-VI BIOCHEMISTRY SYLLABUS 2020-21
TITLE: CLINICAL BIOCHEMISTRY AND ENDOCRINOLOGY

UNIT-I

Clinical Biochemistry: Structure and functions of the liver. Liver diseases-jaundice, hepatitis, cirrhosis, liver function tests, conjugated and total bilirubin in serum. Albumin, globulin ratio, hippuric acid and bromsulphthalein tests. Serum enzymes in liver diseases-SGPT, GGT and alkaline phodphatase.

UNIT-II

Kidneys- structure of nephron, urine formation, normal and abnormal constituents of urine. Biological buffers, role of kidneys in maintaining acid-base electrolyte balance in the body. Renal function tests-creatinine and urea clearance tests, phenol red test.

UNIT-III

Disorder of carbohydrate metabolism-hypoglycemia, hyperglycemia, glycosuria, renal threshold value. Diabetes mellitus-classification. Glucose tolerance test(GTT), diabetic ketoacidosis.

UNIT-IV

Endocrinology: Endocrinology – Mechanism of hormonal action- signal transduction pathway for adrenaline glucocorticoids and insulin. Organization of endocrine system. Classification of hormones.

UNIT-V

Outlines of Chemistry, physiological and disorders of hormones of pancreas, thyroid, parathyroid, gonads, placenta, adrenals, pituitary and hypothalamus, introduction of gastrointestinal hormones.

Practicals - Clinical Biochemistry - 2

- Estimation of urinary creatine
- Estimation of blood urea.
- Estimation of cholesterol by Jack's method.
- Estimation of SGOT.
- Estimation of SGPT.
- Estimation of serum bilirubin.

III BSC VI SEMESTER BIOCHEMISTRY PAPER-VII SYLLABUS 2020-21
TITLE: CELLULAR AND MOLECULAR BIOLOGY

UNIT-I

The Cell: Brief introduction to basic cell types,differences between prokaryotic and eukaryotic cells,ultra structure and functions of typical prokaryotic cell,ultra structure of different organalles of typical eukaryotic cell,cell cycle and cell division-mitosis and meiosis.

UNIT-II

DNA replication: Organization of genome in prokaryotes and eukaryotes. Experimental evidence to prove nucleic acid as genetic material. DNA replication –models of replication, Meselson-Stahl's experimental proof for semi-conservative mode. DNA polymerases I, II and III of E.Coli, helicase, topoisomerase, primase, ligase. Bidirectional replication model. Okazaki fragments, leading and lagging strands of DNA synthesis. Inhibitors of DNA replication.

UNIT-III

Transcription: RNA polymerase of prokaryotes, promoters, initiation-sigma factor and their recognition sites. Elongation-role of core enzyme. Termination-rho-dependent and rho-independent. RNA polymerase I, II, III of eukaryotes. Post transcriptional modifications in eukaryotic m-RNA.

UNIT-IV

Protein synthesis:Introduction to protein synthesis-Genetic code. Structure of tRNA. Dicipherine of the genetic code. Nirenberg's and Khorana's experiments. Wobble hypothesis. Degeneracy of genetic code.

Protein synthesis- activation of amino acids (amino acyl tRNA synthetases). Ribosome structure. Initiation, elongation and termination of protein synthesis. Post translational modifications-signal hypothesis. Inhibitors of protein synthesis.

UNIT-V

Gene Regulation : Regulation of prokaryotic gene expression-induction and repression. Lac operon, catabolite repression. Tryptophan operon and attenuation.

Practicals - Cellular Biology and Molecular Biology

1. Microscopic measurements
2. Plasma membrane
3. Cellular Fractionation
4. DNA isolation from Bovine Spleen
5. Mitosis and Cytokinesis.
6. Antibiotic sensitivity by paper disc method.
7. Isolation of plasmids.
8. Isolation of DNA from onion/liver/coconut endosperm.

III BSC BIOCHEMISTRY VI SEMESTER - PAPER-VIII A1 SYLLABUS 2020-21
TITLE: RESEARCH METHODOLOGY (Cluster Elective)

UNIT-I

IntroductiontoResearchMethodology No. of Hours: 4

Objectives and motivation in research.

UNIT-II

DefiningtheResearchProblem No. of Hours: 4

Selecting and defining a research problem,Reviewing and conducting literature search, Developing a research plan.

UNIT-III

Designing of Experiment No. of Hours: 4

Different experimental designs – single and multifactorial design, Making measurements and sources of error in measurements, Methods of data collection and record keeping.

UNIT-IV

Data Processing and Statistical Analysis No. of Hours: 4

Processing operations, tabulation, and graphical representation, Statistics in research: Concepts of sample and population, Measure of central tendency, dispersion, asymmetry (skewness, kurtosis), Normal distribution (p-value), Statistical tests and hypothesis (Standard error, t-test, chi-square test), and regression analysis,

UNIT-V

Report writing No. of Hours: 4

Writing a research paper - abstract, introduction, methodology, results and discussion.

Practicals

Based on the teaching above, each student will undertake the following exercises.

1. A teacher (adviser) who would guide the student will discuss with student and identify a topic of mutual interest.
2. The student will collect the literature, collate the information and write the same in the form of a term paper with proper incorporation of references using appropriate software such as EndNote.
3. The student will identify scope of research on the topic and will frame objectives to be addressed in the project through a work plan.
4. The student will write standard operating protocols (SOPs) and identify requirement for equipment and reagents.
5. Each student will be asked to make presentation about the project including literature available, objective sought and work plan including methodologies as described above.

III BSC BIOCHEMISTRY VI SEMESTER - PAPER-VIII A2 SYLLABUS 2020-21
TITLE: ADVANCED CELL BIOLOGY (Cluster Elective)

UNIT-I

Plasma Membrane and Nuclear Transport No. of Hours : 8

Properties and Composition of Cell Membrane; Structure of Nuclear Envelope; Nuclear Pore Complex; Transport Across Nuclear Envelope; Regulation of Nuclear Protein Import and Export.

UNIT-II

Cell-Cell Interaction No. of Hours:12

Cell-Cell Interactions and Cell-Matrix Interactions; Components of Extracellular Matrix: Collagen and Non-Collagen Components; Tight Junctions; Gap Junctions; Desmosomes; Hemidesmosomes; Focal Adhesions And Plasmodesmata; Cell Wall; Role Of Cell Interaction In Development.

UNIT-III

Cell Cycle and Programmed Cell Death No. of Hours:16

Overview of The Cell Cycle; Eukaryotic Cell Cycle; Events Of Mitotic Phase; Cytokinesis; Events Of Meiosis; Regulation Of Cell Division And Cell Growth;

Apoptosis: phenomenon of apotosis., apoptosis is aphysiological process., death receptors, apoptosis and disease.

UNIT-IV

Cancer Biology No. of Hours : 12

Characteristic of Cancer cell, Types of tumours, how cell becomes cancerous,
Treating cancers

UNIT-V

Tools and techniques in Cell Biology No. of Hours : 12

Microscopy, autoradiography, cell fraction, plant cell and tissue culture cytochemical methods, selected techniques and animal cell culture

PRACTICALS

Total Hours: 60 **CREDITS: 2**

1. Microscopy- cell biology
2.Autoradiography visit to cancer hospital.
3. Cell division -mitosis
4. Cell fractionation method

III BSC BIOCHEMISTRY VI SEMESTER - PAPER-VIII A3 SYLLABUS 2020-21
TITLE: PROJECT

Student who selected the cluster of Biochemistry has to do project related to biochemistry for a duration of 6 months during VI SEMESTER.

INDIVDUAL THESIS HAS TO SUBMITTED BY THE SUDENTS BEFORE VI SEMSTER END EXAM. CREDITS-5

III BSC VI SEMESTER BIOCHEMISTRY PAPER-VIII A3 SYLLABUS 2020-21
TITLE: GENETIC ENGINEERING (Self Study Course)

UNIT-I

Recombinant DNA technology: Outline of cloning strategies. DNA sequencing-Maxam Gilbert and Sanger's methods. Tool of r-DNA technology: Enzymes-Restriction endonuclease. Ligase, phosphotases, reverse transcriptase, polynucleotide kinases, terminal transferase nucleases-S_1 and RNAase H.

UNIT-II

Restriction mapping. Cloning vectors-plasmids, Ti plasmids, cosmids, lamda phages, shuttle vectors, Expression vectors host-*E.Coli, Saccharomyces cerevisiae, Agrobacterium tumifaciens.*

UNIT-III

Construction of c-DNA and genomic DNA libraries. Isolation and sequencing of cloned genes-colony hybridization. Reporter genes [β-galactosidases, green Fluorescent protein (GFP)].

UNIT-IV

Polymerase chain reaction-principle and applications,RAPD and RFLP. Outlines of blotting techniques-southern, northern and western. Applications of gene cloning-production of insulin and human growth hormone, production of Bt-cotton and edible vaccines.

UNIT-V

Introduction to bioinformatics-definition of proteomics and genomics. Genbank, NCBI, DDBJ, swissprot, PDB. Sequence alignments-BLAST and FASTA.

Practicals:

1. Determination of purity of nucleic acids by UV-spectrophotometric method.
2. Estimation of DNA by diphenylamine method.
3. Estimation of RNA by orcinol method.
4. Electrophoiresis of nucleic acids and visualization by methylene blue staining.
5. Restriction mapping: Lamda- DNA with any two restriction enzymes.
6. Sequence alignments of insulin/ BSA with other proteins using BLAST and FASTA.

DEPARTMENT OF B.B.A.

The meeting of the Boards of Studies in the Department of Management Studies was held on Thursday 12.03.2020 at 2.00 p.m. in the BBA Department.

MEMBERS:

1. Dr.Sr.Marietta D' Mello, Principal

University Nominee:

2. Dr.N.Udaya Bhaskar, Adikavi Nannaya University, Rajamahendravaram.

External experts:

3. Dr.D.Astha Sharma, Aditya Global Business School, Kakinada.
4. Mr.T.I.Afsal, Andhra Loyola College, Vijayawada.

Faculty:

5. Mrs.Santosh Jhawar
6. Mrs.P.Vijayalakshmi
7. Ms.M.Sai Pallavi Jenifar
8. Ms.V.V.L.Krishna Priya
9. Mrs.G.Hephzibah Beulah
10. Mrs.Nazma

Students:

11. Ch.Mounisha, II B.B.A.
12. Stuti Jain, I B.B.A.

Resolutions:

The following resolutions were made in the syllabi of BBA with minor changes.

1. **II Semester** - Quantitative Techniques for Manager -
   - Unit I was transferred to Fundamentals of Research Methodology Paper in III Semester. Measures of Central Tendency of Unit II was included in Unit I.
   - Unit II Measures of Dispersion was introduced.
   - Unit III – Sampling Techniques is removed as it is already there in Fundamentals of Research Methodology Paper. Instead Matrix is shifted from Unit V to Unit III.
   - Unit IV – Set Theory is removed and Measures of Co-relation and Regression was introduced.
   - Unit V – Concepts of Probability was introduced.
2. **III Semester** – Fundamental of Research Methodology –
   - Unit I and II are combined.
   - Unit II includes Research Design.
   - Unit III - Sampling Design is shifted from Unit IV.
   - Unit IV - Methods of Data Collection
   - Unit V – New topic on Presentation of Data and Report Writing was introduced.
3. **V Semester** – BBA Practicals
   - Unit II – Taxation was replaced by Descriptive Statistics.
   - Unit III – Management and Auditing was replaced by Financial Functions as the students get the concepts clearly by solving it practically.
4. It is proposed to introduce B.B.A. Logistics Programme for the academic year 2020-21.

CH. S. D. ST. THERESA'S FOR WOMEN (A), ELURU
SYLLABUS FOR BACHELOR OF BUSINESS ADMINISTRATION
2020-21
PAPER TITLES & SYLLABUS

SEMESTER I

Part-I

1. Communicative English-I
2. Hindi Grammar & Communicative Hindi-I

Part-II

1. Managerial Economics
2. Management Process
3. I.T. for Mangers
4. Organization Behavior

SEMESTER II

Part-I

1. Communicative English-II
2. Hindi Grammar & Communicative Hindi-II

Part II

1. Business Environment.
2. Quantitative Techniques for Managers
3. Business Analysis using MS-Excel
4. Accounting for Managers

SEMESTER III

Part-I

1. English & Soft Skills – I
2. Basic Knowledge of Italian – I

Part-II

1. Operations Management
2. Human Resources Management
3. Fundamentals of Web Technologies
4. Event Management

SEMESTER IV

Part-I

1. Professional English & Soft Skills – II
2. Basic Knowledge of Italian – II

Part-II

1. Marketing Management
2. Financial Management
3. Fundamentals of Research Methodology
4. Advanced Web Technologies

SEMESTER V

1. Business law
2. E-Business
3. Taxation-I
4. Photoshop and Internet Applications.
5. Management Accounting
6. Financial Markets and Services

** BBA Practical

SEMESTER VI

1. Business Strategy
2. International Business
3. Taxation-II
4. Computerized Accounting through Tally

Cluster: Marketing Management

5. Advertisement & Media Management
6. Logistics and Supply Chain Management
7. Project/mooc course/self study(Marketing of Banking Services)

I BBA I SEMESTER SYLLABUS 2020-21
TITLE: MANAGERIAL ECONOMICS

Course Objective:
Its main objective is to develop students' capacity to analyze the economic environments in which business entities operate and understand how managerial decisions can vary under different constraints that each economic environment places on a manager's pursuit of his/her goals.

Learning Outcome:
1) Understand the roles of managers in firms
2) Understand the internal and external decisions to be made by managers
3) Analyze the demand and supply conditions and assess the position of a company

UNIT – I Introduction
Business – meaning and its importance in the economy; Economic and non- economic activities ; economics – definitions – distinction between micro and macro economics. Concept of utility; cardinal and ordinal utility, law of diminishing marginal utility; law of substitution.

UNIT – II Demand and supply
Demand : meaning , types of demand , law of demand , elasticity of demand ; different Types of elasticity of demand – price elasticity , income elasticity , cross elasticity and promotional elasticity –determinants of elasticity of demand – supply – meaning and importance ; law of supply ; consumers surplus.

UNIT - III Production and costs
Concept of production, production function ; distinction between short run and long run ; law of variable proportions ; law of returns to scale - concept of cost of production ; cost function ; costs in short run and long run.

UNIT – IV Market structures and pricing
Market structures ; characteristics - perfect competition –Monopoly –Pricing in various market structures during short run and long run.

UNIT – V National income Trade cycles and International trade
National income ; different concepts of national income ; measurement of national income ;concept of Trade cycles – different phases of trade cycles ; concept of monetary policy and fiscal policy ; concept of International trade and Balance of payments.

I BBA I SEMESTER SYLLABUS 2020-21
TITLE: MANAGEMENT PROCESS

Objective: To euip the Knowledge on the principles of management is essential for all kinds of people in all kinds of organizations. After studying this course, students will be able to have a clear understanding of the managerial functions like planning, organizing, staffing, leading and controlling. Students will also gain some basic knowledge on international aspect of management.

Learning Outcome: To enhance the skills to manage various functions of business organizations in order to provide the professional approach and outlook.

UNIT – I

Management: Meaning & Definition - Importance of Management - Role and Responsibilities of Top, Middle and Lower Managers - Functions of Management – Ethics and Corporate Social Responsibility.

UNIT – II

Planning: Meaning & Definition - Nature/Features – Purpose/Need - Significance – Steps in Planning Process - Types of planning - Levels of Planning – Limitations of Planning.

UNIT – III

Organizing: Meaning & Definition - Nature of Organization - Principles of Organization – Importance of Organization - Process of Organization.

Formal & Informal: Formal Organizations – Characteristics – Advantages & Disadvantages - Informal Organizations - Characteristics – Advantages & Disadvantages – Difference between Formal & Informal.

Organizational Structure: Features – Types of Organization/Organizational Structure – Line Organization – Advantages & Disadvantages – Line & Staff Organization - Advantages & Disadvantages – Functional Organization - Advantages & Disadvantages – Divisional Structure - Advantages & Disadvantages.

UNIT – IV

Staffing: Meaning & Definition – Elements of Staffing - Functions of Staffing.

Directing: Meaning & Definition – Nature – Elements – Purpose of Directing – Process of Directing – Importance of Directing – Requirements to Effective Direction.

UNIT-V

Controlling: Meaning & Definition – Nature of Controlling – Objectives of Controlling – Importance of Controlling – Process of Controlling - Barriers of Control.

Recommended Books:

1. Koontz, H. And Wihrich H, Management, Mc Graw Hill.
2. Sharma, Principles of Management, Kalyani Publishers, Hyderabad.

I BBA I SEMESTER SYLLABUS 2020-21
TITLE: IT FOR MANAGERS

Objective: To provide an insight into the basic features of Computes and their applications in Managerial Decision-Making.

Learning Outcome: Be able to use and apply current technical concepts and practices in the core information technologies

UNIT-I

IT in the Modern Organization: Basic concepts of information System-Organizational structure and it support. it support at different organizational levels managing information technology in organizations.**Introduction to computer systems:** Introduction to computers – five generations of modern computers-classification of digital computer systems .

UNIT-II

Computer Hardware: Central processing unit (CPU),Control unit (CU),Arithmetic Logic Unit(ALU).

Memory: Memory Organization –Random Access Memory(RAM),Dynamic RAM, (DRAM) static RAM(SRAM),Read only memory(ROM)Registers.

Factors affecting processor speed –Instruction set, Mechanic cycle.

Secondary Storage Devices: Magnetic Tape,Magnetic Disk, Hard Disk,Flexible Disk,Optical Disk. Input Devices: Key Board, Mouse, Trackball, Game controllers, scanners, voice Recognition, web cams, Digital cameras, OCR, OMR ,MICR.

Output Devices: Monitor, CRT Monitor, Flat-Panel Monitors-Printers: Daisy Wheel, Dot Matrix, Ink-Jet printer-plotter, Multimedia projector.

UNIT-III

Computer Software: System Software and Application Software. Operating Systems: Windows Operating System , Mobile device operating systems, and notebook operating systems.

Introduction to MS-Office: Importance ,features, system requirements, advantages.

MS-Word: Basic editing, formatting, paragraph formatting, borders & sharing tables, lists ,page formatting, inserting pictures, clip arts, shapes, mail merge , proofing tools templates & macros.

MS-Excel: worksheet, workbook ,templates, entering data, formatting, headers, footers, data analysis, charts, names, filters, sort, validation lists, function, macros

UNIT-IV

MS-Power Point: Creating basic presentation, master view, slide design, building blocks of presentation, themes and styles, charts ,graphs and tables, media clips and animation ,transition, slide setup, rehearsal, narrations ,macros and customization.

Networks: Local area Networks, LAN Topologies , Wide Area Networks(WAN),-value added Networks (VAN) – Virtual private Networks(VPN)

The internet, Intranet and Extranets:the evolution of the internet,services provided by the internet,WORLD WIDE WEB:intranets and extranets.

UNIT-V

New Technologies in Information Technology : Introduction to hyper media , artificial intelligence and business intelligence , Knowledge Discovery in database(KDD):Data Warehouses and data marts. Data Mining and On-line Analytical Processing(OLAP)-Enterprise Resource planning(ERP)-Supply chain Management(SCM),Customer Relationship Management(CRM)-Geographic Information System(GIS).

Prescribed BOOKS: Ms.J.J.L.R.Bharthi Devi, a Text Book on Information Technology, Maruthi Book Depot, Guntur.

I BBA I SEMESTER SYLLABUS 2020-21
TITLE: ORGANIZATION BEHAVIOR

Objective:
To enable students to synthesize related information and evaluate options for the most logical and optimal solution such that they would be able to predict and control human behaviour and improve results.

Learning Outcome: Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.

Unit-I:
Definition, Nature and scope - Focus and Purpose - Importance of organizational behaviour — Framework – Organizational behaviour models.

Unit-II:
Personality – Types – Factors influencing personality – Learning – Types of learners – Learning process – Learning theories – Organizational behaviour modification - Management Intervention - Emotions - Emotional Labour – Emotional Intelligence.

Unit-III:
Attitudes – Characteristics – Components – Formation – Measurement- Values - Perception – Factors influencing perception – Interpersonal perception - Impression Management - Motivation – Types – Effects on work behavior.

Unit-IV:
Organization structure – Formation – Groups in organizations – Influence – Group dynamics – Emergence of informal leaders and working norms – Group decision making techniques – Team building - Interpersonal relations – Communication – Control.

Unit-V:
Leadership and Power: Meaning – Importance – Leadership styles – Theories – Leaders Vs Managers – Sources of power – Power centers – Power and Politics.

References:

1. Stephen P. Robins, Organizational Behavior, PHI Learning/Pearson Education, 2008.

2. Fred Luthans, Organizational Behavior, McGraw Hill, 2001.

3. Schermerhorn, Hunt and Osborn, Organizational behavior, John Wiley, 2008.

4. Udai Pareek, Understanding Organizational Behaviour, Oxford Higher Education, 2004.

5. Mc Shane & Von Glinov, Organizational Behaviour, Tata Mc Graw Hill, 2007.

I BBA II SEMESTER SYLLABUS 2020-21
TITLE: BUSINESS ENVIRONMENT

Objective: To provide knowledge of the environment in which businesses operate.

Learning Outcome: Define various elements internal as well as external affecting business environment.

UNIT-I: Frame work of Business Environment
Meaning - Definition - Characteristics of Business Environment- Scope of Business Environment- Significance/Importance of Business Environment - Components/factors/Elements influencing Business Environment (Internal & External).

UNIT-II: Components of Macro Environment of Business
Elements of Socio-cultural Environment – Features of Technological Environment – Impacts of Technological Environment on Business- Dimensions of Political Environment – Influence of Political Environment on business.

UNIT-III: Economic Environment of Business
Meaning - Definition – Classification of Economic Environment of Business- Components of Economic Environment of Business.
Economic System-Meaning-Definition-Basic units of an Economic system-Characteristics of Economic system – Functions of Economic system- Types of Economic system (Socialistic, Capitalistic, Mixed) – Characteristics, Merits & Demerits of Economic system.

UNIT-IV: Economic Planning
Meaning-Definition-Essentials of Economic Planning-Economic Planning in India- Aims & Objectives of Economic Planning in India-Features of Planned Economy-Need & Importance of Economic Planning-Limitations/Arguments against Planning.

UNIT-V: International Business Environment
Introduction- Determinants of the International Business Environment – Importance of International Business Environment- Dimensions/Framework of International Business Environment-Challenges of International Business Environment.

Recommended Books:

1. Sharma R.K., Gupta Shashi, Kalyani Publishers
2. Dr. Ravindranath Badi, Himalaya Publishing House Pvt.ltd

I BBA II SEMESTER SYLLABUS 2020-21
TITLE: QUANTITIVE TECHNIQUES FOR MANAGERS

Objective: To enable the students to develop quantitative analytical skills & application of quantitative techniques to research problem

Learning Outcome: To connect acquired knowledge and skills with practical problems in economic practice.

UNIT – I: INTRODUCTION: Statistics: Meaning, Definition, Functions, Importance and Limitations of Statistics.

Measures Of Central Tendency: Definition of Central Tendency, Objectives of Central Tendency, Characteristics of Central Tendency, Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode (for Individual, Discrete, Continuous Series) – Properties of Averages and their Applications.

UNIT – II: MEASURES OF DISPERSION: Meaning, Definitions, Objectives of Dispersion, Range Quartile Deviation, Mean Deviation, Standard Deviation - Co-efficient of variation.

UNIT – III: MATRIX: Meaning – Types of Matrices – Matrix Operations (Matrix addition, Matrix Subtraction, Matrix Multiplication) – Matrix Determinants, Minors and Co-factors – Matrix inversion.

UNIT – IV: MEASURES OF CORRELATION AND REGRESSION: Meaning, Definition and use of Correlation-Types of Correlation – Karl Pearson's Correlation Co-efficient-Spearman's Rank correlation –Probable error- Meaning utility of regression analysis- comparison between correlation and regression.

UNIT – V: PROBABILITY: Definition, Concept of discrete probability distribution, Normal Distribution, Use of normal distribution tables.

Recommended Books:

1. Sivayya K.V. and Satya Rao, Business Mathematics, Saradhi publication, Guntur.
2. Sancheti and Kapoor V K, Business Mathematics, Sulthan Chand & Sons, New Delhi.
3. D. N. Elhance: Fundamental of Statistics, Kitab Mahal, Allahabad.
4. Gupta S.C: Fundamentals of Business Statistics, Sultan Chand, New Delhi.
5. Aggarwal, Business Statistics, Kalyani Publishers, Hyderabad.
6. Reddy C R, Business Statistics, Deep&Deep Publications, New Delhi.
7. S.P. Gupta- Statistical Methods for Management
8. CR Kothari- Quantitative Techniques, Vikas, New Delhi

I BBA II SEMESTER SYLLABUS 2020-21
TITLE: BUSINESS ANALYSIS USING MS-EXCEL

Objective: To provide an insight into the basic features of Computes and their applications in Managerial Decision-Making.

Learning Outcome: Students will have a working knowledge of basic functions and formulas in MSExcel.

UNIT-I

Getting Started with Excel

Introducing Excel - Entering and Editing Worksheet Data - Essential Worksheet Operations - Working with Cells and Ranges - Worksheet Formatting – Excel Views and Zooming - Using and Creating Templates - Printing Your Work

UNIT-II

Working with Formulas and Functions

Introducing Formulas and Functions – Mathematical Functions – Logical Functions – Text Functions – Date and Time Functions – Statistical Functions – Financial Functions - Creating Formulas That Look Up Values - Creating Formulas for Financial Applications

Creating Charts and Graphics:

Getting Started Making Charts - Learning Advanced Charting - Visualizing Data Using Conditional Formatting - Enhancing our Work with Pictures and Drawings

UNIT-III

Using Advanced Excel Features

Customizing the Quick Access Toolbar - Using Custom Number Formats - Using Data Validation - Creating drop down list -Worksheet Outlines - Linking and Consolidating Worksheets - Excel and the Internet - Sharing Data with Other Applications - Protecting Your Work – Using Macros for simplifying tasks.

UNIT-IV

Analyzing Data with Excel

Introducing Pivot Tables - Analyzing Data with Pivot Tables - Performing Spreadsheet What-If Analysis - Analyzing Data Using Goal Seek and Solver - Analyzing Data with the Analysis Tool Pak -Practical Examples of Business Reporting - Excel Shortcut Keys.

UNIT-V

Internet Technology

Internet – Networks – LAN/WAN/MAN – Websites – Web Browsers – Opening Web Sites – Searching Websites – Copying Information from the Websites – Saving Images/Videos from Websites – Bookmarking Websites – Downloading Information in PDF/PPT formats – Viewing Google Maps – Using Google Translation tools – Watching/Downloading Videos from Youtube

Email: Creating Email Account - Login/Logout Email – Receiving Mails – Sending Mails – Attaching Documents/Pictures – Searching Mails – Deleting/Moving Mails – Social Networking – Facebook and Orkut – Useful websites for business management.

I BBA II SEMESTER SYLLABUS 2020-21
TITLE: ACCOUNTING FOR MANAGERS

Objective: Understanding Basic Principles of Accounting .

Learning Outcome: Hands on skills in preparing Financial Statements of a Business enterprise

Unit I: Introduction to Accounting
Meaning & Definition of Accounting – Objectives of Accounting – Principles of accounting Functions of Accounting – Branches of Accounting- Advantages of Accounting – Disadvantages of Accounting. Few Basic terms (Business Transactions, Debtor, Creditor, Capital, Goods, Assets, Equity, Income, Expenditure, Expense, Drawings, Loss, Turnover, Net worth, Insolvent, Voucher). **(Theory)**

Preparation of Journal and Ledger (**Problems)**

Unit II: Subsidiary Books with special reference to cash book (Single, Double, Triple Column & Analytical Petty cash Book**) – (Problems)**

Unit III: Bank Reconciliation Statement: Meaning of Bank Reconciliation Statement - Need for Bank Reconciliation Statement - Reasons for difference between cash book and pass book balances - Problems on favorable and over draft balances - Ascertainment of correct cash book balance- Preparation of bank reconciliation statement. **(Problems)**

Unit IV: Trial Balance, Final Accounts:
Trial Balance: Meaning, Objectives of Trail Balance, Methods of preparation, Limitations of Trail Balance – Preparation of Trail Balance **(Theory)** - **Trial Balance - (Problems)**

Final Accounts:
Trading Account, Profit & Loss Account and Balance Sheet- Final Accounts of a Sole trader, Manufacturing Account – Trading Account – Profit and Loss account and Balance Sheet – Adjustments **(With Simple Adjustments).** Green Accounting (Theory only)

Unit V: Depreciation - Meaning – Causes – Objectives of Providing Depreciation - Accounting Treatment - Methods of Providing Depreciation – Straight line Method – Diminishing Balance method - Annuity Method. **(Simple Problems)**

Recommended Books:

1. Accountancy - I - S.P. Jain & K.L Narang Kalyani Publishers
2. Financial Accounting - Dr.V.K.Goyal Excel Books
3. Introduction to Accountancy - T.S.Grewal S.Chand and CO

II BBA III SEMESTER SYLLABUS 2020-21
TITLE: OPERATIONS MANAGEMENT

Objective: to improve students understanding of the concepts, principles, problems, and practices of operations management.

Learning Outcome: Identify and articulate how operations management contributes to the achievement of an organization's strategic objectives.

Unit-I

Operations management: Introduction of Operation Management – Meaning & Definition of Operation Management – Objectives of Operation Management – Scope of Operation Management – Interaction of Operations Management with Other Areas – Difference between Manufacturing and Service Operations.

Unit-II

Plant Location: Meaning of Plant Location – Factors determining Plant Location – Process/Steps in Plant Location Selection – Importance of Plant Location

Plant Layout: Meaning of Plant Layout – Objectives of Plant Layout – Factors influencing Plant Layout – Importance of Plant Layout – Types of Plant Layout: Process Layout, Product Layout, Fixed Position Layout, Combined Layout

Unit-III

Materials Handling: Meaning & Definition of Materials Handling – Objectives of Materials Handling – Scope of Materials Handling – Factors Affecting Materials Handling – Materials Handling Equipment's: Lifting & Lowering Devices; Transporting Devices; Combination Devices; Storage Devices

Unit-IV

Job Design: Introduction – Goals of Job Design – Objectives of Job Design – Factors Affecting Job Design – Techniques of Job Design

Work Study: Meaning & Definition of Work Study – Objectives of Work Study – Benefits of Work Study – Procedure of Work Study

Unit-V

Operations Control: Meaning & Definition of Operations Control – Techniques of Operations Control: Benchmarking, Balanced Score Cards, Network Techniques – Process of Operations Control

References:

1. Russell, Roberta S & Bernard W.Taylor, Operations Management, Pearson, New Delhi, 2004.
2. Chase: Operations Management for Competitive Advantage, Tata McGraw Hill, New Delhi.
3. Buffa, E.S., 'Modern Production Management', New York, John Wiley, 1987.
4. Adam, E.E. and Ebert, R.J, Production and Operations Management, PHI, New Delhi, 1995.

II BBA III SEMESTER SYLLABUS 2020-21
TITLE: HUMAN RESOURCE MANAGEMENT

Objective:
To make the student understand the basic concept and significance of Human Resource Management

Learning Outcome:
To impart the skills to manage various functions of Human Resource Management in order to provide the professional approach and outlook

Unit-I:
Introduction: Meaning & Definition of Human Resource Management – Nature of Human Resource Management – Features of Human resource Management - Scope of Human Resource Management – Objectives of Human Resource Management - Functions of Human Resource Management – Managerial Functions – Operative functions – Principles of Human Resource Management.

Unit-II: Human Resource Planning: Meaning & Definition of Human Resource Planning - Characteristics/Features of Human Resource Planning – Reasons for Increasing Focus on HR Planning – Objectives/Purpose/Importance of Human Resource Planning – Principles of Human Resource Planning – Activities of human Resource Planning – Human Resource Planning at Different levels - Types of Human Resource Planning – Short term planning – Long term Planning.

Unit-III: Recruitment: Meaning & Definition of Recruitment – Nature/Features of Recruitment – Significance of Recruitment – Objectives of Recruitment - Factors Affecting Recruitment policy – Sources of Recruitment – Internal Source Merits& Demerits – External Source Merits & Demerits - Methods/Techniques of Recruitment – Internal Methods- Direct Methods – Indirect methods – Third party methods.

Unit-IV: Selection: Meaning & Definition of Selection – Purpose of Selection – Selection procedure - Factors Affecting Selection Decisions – Limitations of Selection – Difference between Recruitment & Selection – Selection / Employment tests.
Interview: Meaning & Definition of Interview – Features of Interview – Objectives of Interview – Types of Interview – Preliminary Interview - Core Interview – Decision making Interview.

Unit-V:
Training: Meaning & Definition of Training – Purpose/Objectives of Training - Areas of Training – Training Process – Training Methods & Techniques – On-the-Job Methods - Off-the-job Methods.
Development: Meaning & Definition of Development - Objectives of Development – Difference Between Training & Development.

References:

- DK Tripathi , Human Resource Management; Text & Cases, Wisdom, Delhi
- P.S. Rao, Essentials of Human Resource Management& IR Himalaya, Mumbai
- Human Resource Management- Shashi K. Gupta, Rosy Joshi, Kalyani Publishers.

II BBA III SEMESTER SYLLABUS 2020-21
TITLE: FUNDAMENTALS OF WEB TECHNOLOGIES

UNIT- I

Introduction to internet concepts:

What is the Internet – History of the Internet – Uses of the Internet – Protocols – Email – World Wide Web – Computers in business – Web Browsers – Web-Page.

UNIT – II

Internet Technologies:

Modem – Internet Adressing – Physical connections – Telephone lines – Internet Explorer – NetscaNavigator – Types of Networks – Protocols – Internet Protocols (IP), TCP, UDP, HTTP, Telnet, POP.

UNIT – III

HTML:

Basic HTML – The document body – Text – Hyperlinks – Lists – Tables, Using Color and Images – Multi media objects - Frames – Forums.

UNIT – IV

DHTML (Dynamic HTML):

Introduction to DHTML – Defining style-sheets – CSS Syntax – CSS colors – Borders – CSS Backgrounds – CSS Margins – CSS Lists – CSS Fonts – CSS Links – CSS Tables – CSS Image Gallery – CSS Forms.

UNIT – V

Java script:

Introduction – Language Elements – Identifies – Expressions – Java script Keywords – Operators – Statements – Functions – Objects of Java Script – The Window Object – The Document Object – Forms Object – Text Boxes and Text areas – Buttons – Radio Buttons and Check Boxes.

Prescribed Text Books:

1. Web Programming Building Internet Applications 2nd Edition by Chris Bates.
2. World Wide Web Design with HTML by C Xavier.
3. Web Technology 2nd Edition by N. P. Gopalan, J. Akilandeswari.

I BBA III SEMESTER SYLLABUS 2020-21
TITLE: EVENT MANAGEMENT (Add-on Course)

Objectives:

To provide students with a structured approach to operational and creative fundamentals, from inception to debrief.

Learning Outcome:

- obtain a sense of responsibility for the multi-disciplinary nature of event management.
- gain confidence and enjoyment from involvement in the dynamic industry of event management.

UNIT:1 Introduction to Event Management & Concept:

Meaning, Definition of Event Management, Size of Events, Types of Events, The Event Theme, Code of Ethics, Developing, Analyzing, Designing & Logistics of Concept.

UNIT:2 Legal Compliance, Marketing & Risk Management:

Relevant Legislation, Liquor Licensing, Federal Trade Commission Act, Stakeholders & official Bodies ,Contracts, Nature & Process of Event Marketing, Promotion, Process of Risk Management.

UNIT: 3 Planning, Staging & Staffing:

Planning Process, Staging: Choosing the Event Site, Developing the Theme, Conducting Rehearsals, Producing Services, Arranging catering, Organizing Accommodations & Managing The Environment, Staffing: Preparing Job Description, Recruitment& Selection, Training Briefing & Managing Volunteers.

UNIT:4 Safety & Security:

Security, Occupational Safety & Health, Incident Reporting, Crowd Management &Evalauation: Plan, Major Risks, Emergency Planning, Implementing Emergency Procedures

UNIT: 5 Monitoring, Control & Evaluation:

Monitoring & Control Systems, Operational Monitoring & control, Evaluation, Careers in Changing Environment-Job Opportunities.

References:

1. Event Management, Lyn Van Der Wagen&Brenda R.Carlos-Perason Publication
2. Event Management by Swarup K. Goyal - Adhyayan Publisher – 2009.
3. Event Management & Public Relations by Savita Mohan - Enkay Publishing House.

II BBA IV SEMESTER SYLLABUS 2020-21
TITLE: MARKETING MANAGEMENT

Course objectives: to develop understanding about marketing management concepts and frameworks, and apply these to a new or existing business and to enhance business communication skills required to work effectively with a marketing team.
Learning Outcome : critically analyse an organisation's marketing strategies**,** formulate and assess strategic, operational and tactical marketing decisions

Unit-I:
Introduction: Meaning of Market –Definition of Market- Importance of Market- Classification Of Market – Meaning & Definition of Marketing – Nature of Marketing – Scope of Marketing – Objectives of Marketing – Importance of Marketing – Concepts of Marketing (Needs, Wants & Demands, Products,Value,Exchnage,Transaction & Relationship, Market & Marketer) Meaning & Definition of Marketing Management – Objectives of Marketing Management **–** Principles of marketing Management –StepsinMarketingManagementProcess.

Unit-II:
Product Design: Meaning and Definition of product – Features of Product – Importance of Product – Product Classifications/Types of Product - Decisions Involved in Product – Levels of Product.

Unit III :
Product Mix & Product Line – Factors Influencing Change in Product Mix – Product mix Strategies – Product Mix Decisions – Product Line Decisions/Managing Product Line Decision – Green Marketing -Meaning & Definition of Product Life Cycle (PLC) – Characteristics of PLC – Assumptions of PLC- Stages of PLC.

Unit-IV:
Branding:
Meaning & Definition – Factors to be considered in Branding – Advantages & Disadvantages of Branding.
Packaging: Meaning & Definition – Importance of Packaging – Functions of Packaging – Requirements of Good Packaging – Kinds of packaging.
Labeling: Meaning & Definition – Classifications of Labeling – Role of Labeling In packaging.
Pricing: Meaning & Definition - Objectives of Pricing – Factors affecting Pricing Decisions – Pricing Methods/Approaches (Cost –Oriented, Customer Demand Oriented, Competition Oriented).

Unit V:
Marketing Channels: Meaning & Definition of Marketing Channels – Characteristics of Marketing Channels – Purpose of Marketing Channels – Need For Marketing Channels- Functions of Marketing Channels – Effectiveness of Marketing Channels – Factors Influencing Channel Decisions – Types of Channels of Distribution.

Recommended Books:
1. S.A. Sherlekar , R. Krishnamoorthy,Himalaya Publishing House Pvt.ltd

II BBA IV SEMESTER SYLLABUS 2020-21
TITLE: FINANCIAL MANAGEMENT

Course Objectives:
To develop critical thinking and problem solving competencies, at both the individual and group levels, of capital budgeting, capital structure, and to apply financial theory to analyze real life situations in an uncertain environment with an incomplete data set.

Learning Outcome:
To impart the skills to manage various functions of Financial Management in order to provide the professional approach and outlook.

Unit-I :
Financial Management: Nature and scope – Financial goals: profit maximization , wealth maximization ; Financial functions – investment, financing and dividend decisions- Dividend decisions– types of dividend– determinants of dividend policy.

Unit-II :
Source of Finance : Classification of source finance – Factors determining the choice of finance - Midterm Finance - Public deposits - Merits – Limitations – Commercial banks – Merits – Limitations – Lease Financing – Merits – Limitations – Short term Sources – Bank Credit (Loans,Cash,Credit,Overdraft) –Trade Credit –Installment – Credit –Advances – Commercial paper – Long term Sources of Finance – Issue of shares – Equity shares – Merits – Limitations – Preference shares – Types of Preference shares – Difference between preference shares and Equity shares – Retained Earnings – Debentures – Types of Debentures – Merits of Debentures – Limitations of Debentures – Difference between Debentures and shares.

Unit-III:
Working capital Management : Working Capital – Meaning – Concept of working capital – Gross working capital – Networking capital – Permanent working capital – Temporary working capital – Components of working capital – Current assets – Current liabilities – Importance of working capital – Factors influencing working capital – Adequate & Inadequate working capital – Estimation of required working capital.

Unit-IV:
Capital Budgeting: Meaning – Importance – Computation of capital budgeting – Process of capital budgeting – Payback period method – Net present value method – Profitability index method – **(Simple Problems in Payback period method , Net present value method and Profitability index method).**

Unit-V:
Capital Structure: Meaning – features of appropriate capital structure –importance of capital structure- Capital structure theories – Traditional and MM hypotheses – Determinants of capital structure. (**Theory only)**

Recommended Books:
Financial Management- P.Viswanadham, Md. Jafrulla, Himalaya Publishing House
Financial Management- Khan & Jain, Tata Mc Graw Hill

II BBA IV SEMESTER SYLLABUS 2020-21
TITLE: FUNDAMENTALS OF RESEARCH METHODOLOGY

Objective: To equip the students with the basic understanding of research methodology and to provide insight into the application of modern analytical tools and techniques for the purpose of management decision making.

Learning Outcomes: Students should be able to identify the overall process of designing a research study from its inception to its report. This will make them familiar with the steps involved in identifying and selecting a good instrument to use in a study.

UNIT - I: Introduction : Meaning & Definition of Research – Objectives - Importance - Motivation for research - Types of Research- Research Approaches – Limitations.

Defining Research Problem: Research problem – Selection - Necessity of defining the problem – Techniques / Steps involved in Defining a problem.

UNIT - II: Research Design: Meaning of Research Design – Features– Need - Purpose – Components & Requirements of a Good Research Design.

UNIT -III: Sampling Design: Meaning of Sampling – Steps/Elements– Characteristics of a Good Sample Design- Advantages of Sampling – Disadvantages of Sampling – Sampling – with and without replacement – Types/ Methods of Sampling: Random Sampling(Random, Systematic, Cluster, Multistage, Area Samplings), Non random Sampling(Convenience, Judgment, Quota, Panel, Snowball)

UNIT -IV : Collection of Data: Meaning – Types; Primary Data: Meaning– Advantages – Disadvantages; Secondary Data: Meaning– Advantages– Disadvantages; Comparison of Primary Data & Secondary Data.

UNIT -V: Presentation of Data &Report Writing: Frequency distribution: Meaning & Definition of Frequency Distribution – Tabulation Meaning & Essentials for Good Table, Diagrammatic Presentation of Data - Meaning, Importance & Limitations**; (Problems On:** Frequency Distribution, Histograms, Frequency Curves and Frequency Polygon.); Oral and written abstracts, thesis and papers for seminars.

References:

1. Mark Saunders, Philip Lewis, Adrian Thornbill, Research Methods for Business Students, Pearson,ND

2. Churchill, Iacobucci & Israel, Marketing Research: A South Asian Perspective, Cengage, New Delhi

3. C.R. Kothari, Research Methodology, New Age International.

4. Carver & Nash, Data Analysis with SPSS, Cengage, New Delhi

5. Alan Bryman & Emma Bell, Business Research Methods, Oxford University Press.

6. Donald R. Cooper & Pamela S. Schindler, Business Research Methods 8th Edition, Tata McGraw Hill.

7. K.V.S. Sarma, Statistics made sample, do it yourself on PC, Prentice Hall.

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II BBA IV SEMESTER SYLLABUS 2020-21
TITLE: ADVANCED WEB TECHNOLOGIES

UNIT- I

Basic XML Concepts:

Introduction – HTML Vs XML – Syntax of the XML Document – XML Validation – XML DTD – The building Blocks of XML Documents.

Advanced XML Concepts:

DTD Elements: Declaring an element – Empty elements – Elements with Data, Elements with children, Wrapping – DTD Attributes.

UNIT – II

Introduction to PHP : Installing and configuring PHP,MYSQL,XAMPP server.

Variables**:** Global and super global. Data types: Changing type by casting. Use of var_dump operator for data types. Operators and Expressions: Assignment operators, arithmetic operators, concatenation operators, comparison operators, increment and decrement operators, constants.

UNIT – III

Flow Control functions in PHP : If statement, If-else statement, Switch statement, using the ? operator, While statement, do-while statement, for statement, break and continue statement.

UNIT – IV

Working with functions: Calling functions, Defining a function, Returning values from user defined functions, variable scope, Accessing variables with global statement.

Working with Arrays : What are Arrays? Creating Arrays. Creating Associative arrays, Creating multi-dimensional arrays.

UNIT-V

Introduction to MySQL Understanding the Database Design Process: The Importance of Good Database Design, Types of Table Relationships.

Learning basic SQL Commands: Learning the MySQL Data types, Learning the Table Creation Syntax, Using Insert Command, Using SELECT Command, Using WHERE in your Queries, Selecting from Multiple Tables, Using the UPDATE command to modify records, Using RELACE Command, Using the DELETE Command, Frequently used string functions in MySQL, Using Date and Time Functions in MySQL.

Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data.

Prescribed Text Books:

1. Julie C. Meloni, PHP MySQL and Apache, SAMS Teach yourself, Pearson Education (2007).
2. 2. Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson (2006).
3. Web Programming Building Internet Applications 2nd Edition by Chris Bates.
4. Web Technology 2nd Edition by N.P. Gopalan, J. Akilandeswari.

III BBA V SEMESTER SYLLABUS 2020-21
TITLE: BUSINESS LAW

Objective: To understand legal procedures and practices of an organisation.

Outcome: The academic study of law gives an insight into legal systems on which much day-to-day life is based.

Unit-I:
Law of Contract – Essentials of valid contract, Kinds of Contracts, Offer, Acceptance, Consideration, Capacity of Parties to a contract, Free Consent, Stranger to the contract.

Unit-II:
Contingent Contracts, Performance of Contract, Discharge of Contract, Quasi Contracts, Breach of Contracts and Remedies.

Unit-III:
Specific Contract – Contract of Indemnity – Guarantee Contract – Contract of Bailment – Pledge – Contract of Agency.

Unit-IV:
Sale of Goods Act – Essentials of Sale Contract – Sale and Agreement to Sale – Conditions and Warranties – Unpaid Seller – Rules of transfer of Property.

Unit-V:
Companies Act 1956 – Introduction – Characteristics – Formation of a Company – Memorandum of Association (MOA) – Articles of Association (AOA) - Certificate of Commencement of Business – Certificate of Incorporation of Business – Meetings – Resolutions – Winding of a Company – Companies Act 2013. - Corporate Social Responsibility.

References:

1. Indian Contract Law – Bare Act, Government of India.
2. N. D. Kapoor Mercantile Law, Sultan Chand & Company, New Delhi.
3. Balchandani – Business Laws.

III BBA V SEMESTER SYLLABUS 2020-21
TITLE: E-BUSINESS

O**bjective:** The objectives of the course are to introduce the concept of electronic commerce, and to understand how electronic commerce is affecting business enterprises, governments, consumers and people in general**.**
Learning Outcome: Recognize the impact of Information and Communication technologies, especially of the Internet in business operations

UNIT - I:
E-commerce: Introduction – Meaning & Definition of e-commerce – Features of e-commerce – Classification of e-commerce – Benefits/Advantages of e-commerce – Limitations/Disadvantages of e-commerce – Resources required for successful implementation of e-commerce – Threats of e-commerce Transactions – Disputes regarding e-commerce Transactions.

UNIT - II:
E- Advertisement: Meaning & Definition of E-Advertisement - Types Of E-Advertising – Advantages of E-Advertisement – Disadvantages of E-Advertisement - The Ethical Issues In E-Business - The Legal Ethical Issues of E-Business - E-Business Supply Chain Management - Characteristics of Supply Chain Mangement– Models of E-Supply Chain Management.

Unit III:
Electronic Payment System: Meaning & Definition - Objectives of Electronic Payments Systems - Participants In An Online Electronic Payment Transaction -Problems In Traditional Payment Systems - Factors Contributing Towards Electronic Payment Systems - Challenges Of Electronic Payments System - Distinction Between Traditional Payment Systems And Electronic Payment Systems - Reasons For Less Popularity Of Electronic Payment Systems- Recommendation To Motivate More Electronic Payment System.

UNIT - IV:
Types of Electronic Payment System: Types of Electronic Payment System, Major Electronic Payment System**:** Electronic or Digital Cash, Credit Card, Debit Card, Smart Card, E- Money, Electronic Fund Transfer, Electronic Cheque, Digital wallets, E-Cash Mobile payment.
ATM (Automated teller machine): Meaning & Definition – Various parties involved in Maintaining ATM's- Types of ATM – Advantages of using ATM-Disadvantages of ATM.

UNIT- V:
Customer Relationship Management: Meaning & Definition of CRM- Process of CRM – Principles of Building Profitable CRM – Advantages of CRM – Strategies of CRM.
e-CRM: Meaning & Definition – Characteristics of e-CRM - Strategies of e-CRM – Different levels of e-CRM - Advantages of e-CRM – Application of e-CRM – Difference between CRM & e-CRM.

References:
1. Krishnamurthy, E-Commerce Management, Vikas Publishing House.

III BBA V SEMESTER SYLLABUS 2020-21
TITLE: TAXATION -I

Objective: To make the students to equip with the tax concepts and calculate Total Income & Tax Liability.

Learning outcome: By the end of this course, students should be able to identify and explain the self-assessment system of tax administration.

Unit-I:
Introduction: Meaning of Tax –Direct taxes –indirect taxes –History of income tax.
Basic concepts: Income –Agriculture Income –Person- Assesses -Assessment year- Previous year –Gross total income –Total income- Exempted Incomes under sec 10-Maximum Marginal Rate of Tax

Unit-IIL:
Residential Status of an individual: Meaning-Resident- ordinary Resident-Not-Ordinary Resident- Non Resident - Scope of Total Income on the Basis of Residential Status.)Problems on incidence of tax).

Unit-III:
Income under the head Salaries: Meaning –Allowances – HRA – Children's Education Allowance – Children's Hostel Allowance-Perquisites- Rent Free Accommodation – Car – Medical Expenses - Profit in lieu of Salary - Treatment of Provided Fund-Deduction under Sec16- Sec 80 C.(Problems included).

Unit-IV:
Income from House Property: Meaning-Annual value-Different type's rentals Values – Computation of income from let out House- Computation of income from self –occupied House-Deductions under Sec.24. (Problems Included)

Unit –V:
Income from Capital Gains: Meaning of Capital Assets -Transfer of capital asset-computation short-term capital gain-Cost Inflation Index –Computation of long term Capital Gain-Exempted Capital Gains Under sec 54.

References:

1. Vinod K. Singhania: Direct Taxes – Law and Practice, Taxman Publication.
2. B.B. Lal: Direct Taxes, Konark Publisher (P) Ltd.
3. Bhagwati Prasad: Direct Taxes – Law and Practice, Wishwa Prakashan.
4. Dr. Mehrotra and Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication.
5. Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and sons.
6. Gaur & Narang: Income Tax
7. V. P. Gaur, D.B. Narang, Puja Gaur and Rajeev Puri, Income Tax Law and Practice, Kalyani Publishers.

III BBA V SEMESTER SYLLABUS 2020-21
TITLE: PHOTOSHOP AND INTERNET APPLICATIONS

Unit – I

PHOTOSHOP BASICS: - Photoshop Introduction, Uses of Photoshop, Photoshop versions Screen elements, colors description -Creating and Saving Photoshop Documents - Browsing images and duplicating them.

PHOTOSHOP TOOLS: Tool box description - Marquee tool - Move tool - Lasso tools Magic wand tool - Healing Brush tool and Patch tool. - Brush tool and Pencil tool - Cloning tool- Pattern tool – History brush tool - Art History tool - Eraser tools - Gradient tool - Paint Bucket tool - Blur Tool - Sharpen tool- Smudging tool - Dodge Tool - Burn Tool - Sponge tool - Text tools - Type mask tool - Pen Tools- shapes Tool such as Rectangle, Ellipse, Polygonal, line etc - Eye dropper tool - Measure Tool - Zoom tool - Hand tool - Working with Background and Foreground colors - Quick Mask mode - Working with Screen modes

Unit - II

LAYERS: Understanding the Layers - Hiding/Unhiding Layers Palette - Creating a new layer - Selecting a Layer - Deleting a Layer - Naming a Layer – Hiding / Unhiding Layer - Linking Layer – Layer Fill and Opacity – Locking Layers – Layer Modes – Ordering Layers – Copying Layers – Duplicating Layers – Masking Layers – Merging Layers - Layer Properties **BLENDING OPTIONS :** Blending options for Images - Blending options for Shapes - Blending options for Text:

Unit - III

SOME IMPORTANT MENU COMMANDS: FILE – Recent documents – Save As – Contact Sheets-Gallery – Printing with Preview – Printing - EDIT – Step forward – Step backward – Cut – Copy – Copy merged – Paste – Paste into – Fill – Stroke – Free Transform – Different Transforms. IMAGE – image modes – Levels – Curves – Color Balance – Brightness/ Contrast – Desaturate – Threshold – Variations LAYERS – New Fill Layer – New Adjustment Layer – Group with Previous – Flatten Image. SELECT – All – Deselect – Reselect – Inverse – Feather – Transform Selection . Filters – All options Filters. VIEW – Working with rules, guides.

WORKING WITH PALLETS : Navigator Pallet – Colour Pallet – History Pallet – Actions Pallet – Brushes – Character – Paragraph

Unit - IV

DESIGNING PART: Modifying old images to new one - Black and white photo to colour - Preparing Visiting Cards -Preparing Wedding Invitations -Photo Creations -Preparing Passport size photos - Designing Cover Pages - Flex board designing - Designing real world objects - Creating Photo Albums - Creating different text effects with filters and blending options - Designing techniques for different and variety of creations.

Unit – V

Internet Applications: Blog Creation – Maintenance of Blog – Creating and running free website – Using social media for business promotions – using online internet applications – Using free sms, voice calls services – downloading software and business applications – Experiencing virtual life world – Internet security options.

Prescribed Text Book :

1. Fundamentals of Computers by Reema Thareja from Oxford University Press
2. Adobe Photoshop Class Room in a Book by Adobe Creative Team.
3. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016 by David Maxwell

III BBA V SEMESTER SYLLABUS 2020-21
TITLE: MANAGEMENT ACCOUNTING

Objective:
To integrate GAAP in Accounting for Managers and to excel in problem solving.
Outcome:
Demonstrate Accounting compliance and planning and Learn the managerial Accounting concepts.

Unit – I:
Management Accounting - Introduction – Meaning – Nature and Scope of Management Accounting.
Company Final Accounts – Trading Accounting – Profit & Loss Accounting – Profit & Loss Appropriation Account – Balance Sheet – Adjustments.

Unit – II:
Financial Statements & Financial Analysis – Introduction – Meaning – Importance – Types of Financial Statements – Financial Analysis – Meaning – Types of Financial Analysis.
Ratio Analysis – Introduction – Importance of Ratio Analysis – Limitations – Computation of Ratios from the Profit & Loss Account – Gross Profit Ratio – Net Profit Ratio – Operating Ratio – Operating Profit Ratio – Computation of Ratios from the Balance Sheet – Current Ratio – Liquid Ratio (Acid Test Ratio) – Absolute Liquidity Ratio – Debt Equity Ratio – Proprietary Ratio – Working Capital Turnover Ratio – Total Assets Turnover Ratio –Return on capital employed.

Unit – III:
Funds Flow Statement – Introduction – Meaning – Significance and Importance of Funds Flow Statement – Difference between Funds Flow Statement and Income Statement – Statement of changes in working capital – Calculation of Funds From Operations – Preparation of Funds Flow Statement.

Unit – IV:
Cash Flow Statement – Introduction – Meaning – Importance of Cash Flow Statement – Limitations – Differences between Cash Flow Statement and Funds Flow Operation**s –** Procedure for preparing Cash Flow Statement – Preparation of Cash Flow Statement.

Unit – V:
Marginal Costing and Break Even Analysis – Marginal Costing – Meaning – Features – Advantages of Marginal Costing – Limitations – Break Even Analysis - Calculation of Break Even Point – Margin of Safety – Applications of Marginal Costing and Cost-Volume-Profit Analysis – Make/Buy Decision.

References:
1. S.P. Jain, K.L. Narang, Simmi Agarwal and Monika Sehgal, Cost and Management Accounting, Kalyani Publishers.
2.Shashi K. Gupta, R.K. Sharma and Anuj Gupta, Management Accounting and Financial Management, KalyaniPublishers.
3.Debasrshi Bhattacharya, Management Accounting.
4.G. Prasad, Accounting for Managers, Jai Bharat Publishers.

III BBA V SEMESTER SYLLABUS 2020-21
TITLE: FINANCIAL MARKETS & SERVICES

Objective: To familiarize the students with the Financial Markets and Traditional & Modern Financial Services.

Outcome:
Students will equip with the knowledge of Issues in Primary & Secondary Markets and about the various Financial Services.

Unit – I:
Financial Markets – Introduction – Types of Financial Markets – Securities and Role of Regulator – Primary Market – Procedure for buying shares through IPO – Dematerialization of Securities.

Unit – II:
Secondary Market – Stock Exchanges, Stock Trading – Products in Secondary Market: Equity, Debt: Derivatives – Types: Commodity Derivatives & Financial Derivatives.

Unit – III:
SEBI – Objectives of SEBI – Organization – Functions of Functioning of SEBI – Powers of SEBI – Role of SEBI in marketing of Securities and protection of Investor Interest – SEBI guide line towards the issue of Equity Shares and Debentures.
Unit – IV:
Financial Services – Types of Financial S
ervices – Factoring and Forfeiting – Meaning – Role of Financial Services – Theoretical Framework – Factoring Services in India.

Unit – V:
Mutual Funds – The Concept and Objectives of Mutual Funds – Types – Advantages of Mutual Funds – Importance of Mutual Funds – Risk in dealing with Mutual Funds.

References:

1. Gupta L. C: Stock Exchange Trading in India: Society for Capital Market Research & Development, Delhi, 1997.
2. Financial Markets: A Beginners Module, Work Book from NSE Reference Book.
3. Vasant Desai: Financial Markets and Services: Financial Markets & Services.
4. V. A. Avadhani: Financial Services in India, Himalaya Publishers.

III BBA SYLLABUS FOR V SEMESTER 2020-21
TITLE: BBA PRACTICALS

Objectives: To gain knowledge of business practices and processes

Learning Outcomes: the capacity to analyze, evaluate and interpret data practically & expose students to the situations at the industry, business and individual levels

UNIT I: BANKING and INSURANCE: Opening Bank Account – KYC Norms - Types of Cheques – Filling up Bank Forms – Demand Draft – Deposit Form – Withdrawal Form – Promissory Note – Booking on line Railway Tickets – Life Insurance Terminology in Life Insurance - General Insurance – Health Insurance.- Fill up the application form to take insurance policy.

UNIT II: DESCRIPTIVE STATISTICS: Classification, tabulation, frequency distribution, diagrammatic and graphic representation, analysis, categorization, coding and sampling.

UNIT III: FINANCIAL FUNCTIONS-using EXCEL: Future value calculation –FV Schedule- Present Value- Net Present Value calculation- Internal Rate of Return- Modified IRR- NPER. PAN CARD – Filling up the application for PAN Card.

UNIT IV: BUSINESS CORRESPONDENCE AND REPORT WRITING: Business Letters – Types– Contents, Business Reports- Types - Contents– Stages of Business Report

UNIT V: FINANCIAL MANAGEMENT: Filling up of Share Application – Filling up of Debenture Application– ITR Forms- DMAT Account – Financial analysis of the company through ratio analysis - Profitability ratio – Current ratio – Quick ratio – Debt Equity Ratio - Working Capital Turnover ratio.

REFERENCE BOOKS:

1. Dictionary of Insurance Terms by Harvey W. Rubin Ph.D.
2. Statistical Tools for Finance…by Pavel Cizek
3. Excel 2016 Bible, by John Walkenbach
4. Building Financial Models with Microsoft Excel, by K. Scott Proctor
5. Shashi K. Gupta, R.K. Sharma and Anuj Gupta, Management Accounting and Financial Management, KalyaniPublishers.

III BBA VI SEMESTER SYLLABUS 2020-21
TITLE: BUSINESS STRATEGY

Objective: To introduce the basics of the how organizations are managed, with a special focus on the role played by a business firm's strategy.
Outcome: To independently assess or predict business performance based on the detailed analysis of a specific problem, case or company.

Unit-I

Introduction to Business Strategy: Concept of Business Strategy, Need for Business Strategy, Essentials of Effective Strategy, Effects of Inadequate Strategies, Functions of Business Strategies.

Unit-II

Strategic Analysis: Strategic Analysis –definition, Need for Strategic Analysis & Environmental Scanning, Understanding environment of business for strategic analysis, Strategic thinkers & their contributions, Role of Strategic Analysis in Policy making.

Unit-III

Strategy Formulation: Types of Strategies, Steps in Strategy Formulation, Core Competencies and their Importance in Strategy Formulation.

Unit-IV

Strategic Planning and Implementation: Strategic Planning Process, Types of Strategies, Stability, Expansion or Growth, Mergers and Acquisitions, Activating Strategy, Issues in Strategy Implementation, Integrating the Functional Plan and Policies.

Unit-V

Strategic Management Process: Strategic Management Process, Strategic Vision and the role of a Strategist, Criteria for Effective strategy, Role of Strategic Management in Policy Making.

References:

1. Nitin Balwani, Strategic Management & Business Policy, Excel Books, New Delhi.
2. UpendraKachru, Strategic Management: Concepts & Cases, Excel Books, New Delhi.
3. Porter, M.E., Competitive Strategy, The Free Press, New York, 1980.
4. Kazmi, Azhar, "Business Policy and Strategic Management", Tata McGraw Hill, New Delhi.

III BBA VI SEMESTER SYLLABUS 2020-21
TITLE: INTERNATIONAL BUSINESS

Objective: To facilitate the students in understanding International Business in a multicultural world.

Outcome: Equip them with the knowledge of impact of various economic, legal, cultural, geographical, and political systems on international business.

Unit – I:
International Business -Meaning-Definition-Objectives-Reasons of Internalisation-Internationalisation process- Approaches of International business -Significance-limitations-difference between international business& Domestic business

Unit – II:
Foreign Exchange Markets- Meaning-Definition- Features of Foreign Exchange Market – Factors affecting foreign exchange market-Classification (spot, forward)-Functions of Foreign Exchange Market-Participants of foreign exchange market-Advantages and Disadvantages of foreign exchange market.

Unit – III:
Balance of Payments-Meaning –Definition-Characteristics-Fundamentals of BOP-components (current account, capital account, official reserve account)-BOP accounting statement-Disequilibrium in BOP-Methods of Correction.
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Unit – IV:
Trade strategies-Introduction-Types of trade strategies (Inward oriented trade strategies, Outward oriented trade strategies)-Protection-Techniques of protection-Arguments for Protection-Free trade-Arguments for free trade-Free trade vs Protection-Trade Blocks.

Unit – V:
Procedure and Documents: Export procedure-Import Procedure-Bill of lading-Invoice--AR and GP Forms-Mate Receipt-Letter of Credit-Exim list-Packing list-Incentives to exports-Exim Policy 2012.

References:

1. C.Jeevanandam,Foreign Exchange Practice, Concepts&Control, Sultan Chand&Sons.
2. T.S.Balagopal, Export Management, Himalaya Publishing House.
3. KPM Sundaram&Rudradatta, Indian Economy, S.Chand&Co. , New Delhi.
4. Francis Cherumilum, Foreign Trade& Export Management, Himalaya Publication.

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III BBA VI SEMESTER SYLLABUS 2020-21
TITLE: TAXATION -II

Objective: To make the students to equip with the tax concepts and calculate Total Income & Tax Liability.

Learning outcome: By the end of this course, students should be able to identify and explain the self-assessment system of tax administration.

Unit-I :
Profit and Gains of Business and Profession: Meaning of Business- meaning of Profession-Charging Provisions under sec 28-expeness disallowed for business- computation of profits And gains of business-professional receipts-Profession expenditure-computation of income from Profession.

Unit II:
Income from Other Sources: Incomes Chargeable under the head Income from Other Sources-General Incomes-Specific Incomes-Tax Treatment of Gift Received in the Hands of Individual-Grossing up of Interest- computation of Income from Other Sources.

Unit III:
Gross Total Income: Meaning –deductions from Gross total Income –sec 80 D, Sec 80 DD, Sec 80 E and Sec 8oG.
Computation of Total Income of an Individual –computation of tax liability.

Unit IV:
Goods and Services Tax: Introduction-Limitations of VAT-Need for Introduction of GST-Advantages and disadvantages of GST-Types of GST-GSTN.

Unit V:
Assessment of GST- Self-assessment – Provisional assessment – Scrutiny of returns – Assessment of non-filers of returns – Assessment of unregistered persons – Assessment in certain special cases – Tax Invoice – Credit and Debit Notes – Payment of Tax – Tax Deducted at Source – Electronic Commerce – Definitions - Collection of Tax at source.

References:

1. Vinod K. Singhania: Direct Taxes – Law and Practice, Taxman Publication.
2. B.B. Lal: Direct Taxes, Konark Publisher (P) Ltd.
3. Bhagwati Prasad: Direct Taxes – Law and Practice, Wishwa Prakashan.
4. Dr. Mehrotra and Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication.
5. Dinakar Pagare: Law and Practice of Income Tax, Sultan Chand and sons.
6. Gaur & Narang: Income Tax
7. V. P. Gaur, D.B. Narang, Puja Gaur and Rajeev Puri, Income Tax Law and Practice, Kalyani Publishers.
8. Joy Dhingra-Goods and Service Tax , Kalyani Publishers.

III BBA VI SEMESTER SYLLABUS 2020-21
TITLE: COMPUTERIZED ACCOUNTING THROUGH TALLY

Objective: The Objective of course is to acquaint students with the accounting concept,tools and techniques influencing business organization.
Learning Outcomes: At the end of the course students be able to use accounting and business terminology, explain the objective of financial reporting and related key accounting assumptions and principles**.**

Unit – I
Introduction to Tally - Features of tally – Tally Screen elements - Gate way of Tally - Accounts info menu – Inventory info menu – Button Bar – work area etc – Company – Creation of a company – Alternation and Deletion of a company – Company Security.

Unit – II
Classification of accounts – Accounts groups – Ledger accounts – Hierarchy of accounts – **Accounts groups of balance sheet:** capital accounts – loans – current accounts – fixed assets – investments – current assets- **Accounts groups of profit and loss account**: sales – purchases – direct and indirect incomes – direct and indirect expenses – common mistakes committed in account groups - Account Masters – Creation and Management of Masters using Tally.

Unit – III
Account Vouchers – Types of vouchers – Maintenance of Vouchers using Tally – Inventory Accounting – Day book - **Final accounts** – Balance sheet – Liabilities side of balance sheet – assets side of Balance sheet – Buttons at balance sheet screen – Profit and loss Accounts – Buttons at Profit and Loss account – Trail balance sheet – Cash and Bank Account – Individual Master Reports – Printing configurations.

Unit – IV
Accounting Features: Multi Currency – Bill wise details – Interest Calculations – Cost Centres – Invoice Mode – Cheque Printing - Budgets
Inventory Features: Godowns – Stock categories – Batch wise details – Purchase and sales orders

Unit – V
Inventory Features: Price Levels – Additional cost of purchase – Actual and Different bills –
Taxation Features: VAT – TDS – TCS – Service Tax – FBT – Excise

Prescribed Text Books: Implementation of TALLY - BPB Publications

III BBA VI SEMESTER SYLLABUS 2020-21
TITLE ADVERTISING AND MEDIA MANAGEMENT (Cluster)

Objective: To provide students an opportunity to gain an understanding of advertising and sales promotion practices.

Learning Outcome*:* Demonstrate preparation of evaluation tools for promotion and advertising campaigns, as indicated by suggested methods in projects, assignments, and tests.

Unit I:

Advertising: Meaning & Definition - Features of Advertising – Objectives of Advertising - Classification of Advertising - Challenges and Opportunities in Advertising- Steps in Advertising Process - Advantages of Advertising**:** Advantages of Manufactures - Advantages of consumers - Advantages to middlemen - Advantages to Society - Disadvantages of Advertising.

Unit II:

Advertising Agency: Introduction& Meaning – Definition – Importance/Role of Advertising agencies – Types of Advertising Agencies - Functions of advertising agency - Advantages of using an advertising agency- Disadvantages of using an Advertising Agency – Features/Qualities of good advertising copy – Scientific Advertising**:** Meaning - Phases or Stages of Scientific Advertising.

Unit III:

Creative Execution: Creative Execution: Introduction – Meaning – Aspects of creative execution: Verbal Creative Execution - Visual Creative Execution

Verbal Creative Execution: Headlines - Types of headlines (According to their manner of presentation, According to the Contents, According to the Kleppner) – Sub headlines – Slogan – Writing scripts for broad cast media: Radio – Television.

Visual Creative Execution: Layout – Stages of preparing Layout –Layout Formats - Illustrations.

Unit IV:

Sales Promotion: Introduction – Meaning – Objectives of Sales Promotion - Need /Purpose for Sales Promotion - Importance of sales Promotion - Reasons for the Rapid Growth of Sales Promotion – Advantages and Disadvantages of Sales Promotion- Types of sales promotion - Differences between: Sales Promotion & Advertising , Sales Promotion & Personal Selling, Advertising & Personal Selling -Qualities of successful Salesman.

Unit V:

Media Planning: Meaning & Definition - Various functions of Media Planning in Advertising - Criteria Considered in the Development of Media Plans - Media Buyer responsibilities -Steps in Development of Media Plan - Factors Influencing Media Choice – Advantages & Disadvantages of Television.

References:

1. D.B. Taraporevala: Advertising Management – Selected Readings, D.B. Taraporevalla & Sons Co. Private Ltd., Bombay, 1965.
   J.S. Chandan, Jaggit Singh, P.N. Malhan: Essentials of Advertising, Oxford & IBH Publishing Co. Pvt, Ltd, Calcutta, 1990.

III BBA VI SEMESTER SYLLABUS 2020-21
TITLE: LOGISTICS AND SUPPLY CHAIN MANAGEMENT(Cluster)

Objectives:

1. To gain a working understanding of logistics principles and to explore students to the language of logistics.
2. To view logistics as more than operational function that passively executes a plan, but as a strategic function that creates value and competitive advantage.
3. To prepare students for career opportunities.

UNIT-I :

Logistics Management – Introduction – Definition – Meaning - types of logistics - Logistics management-Importance of Logistics management-Need for Logistic in todays business-Logistics activities-Components in Logistics management.

UNIT – II :

Inventory Control-Introduction-Meaning-Types of Inventory Control – Demand Forecasting – Concept-Importance of Demand forecasting-Demand forecasting period-Factors affecting Demand forecasting-Methods of estimating future demand-Demand forecasting for new products.

UNIT-III:

Supply chain management- meaning and definition –features of supply chain management-objectives of supply chain management -significance of supply chain management -functions of supply chain management -differences between logistics and supply chain management.

UNIT –IV :

Supply chain-Types of supply chain –Process view of supply chain (Cycle View-Pull & Push view)-Drivers of supply chain Performance-Supply chain Interface with Logistics

UNIT- V :

Channel Relationship-Types of Relationship-Dimensions in Channel Relationship-Types of Logistics & Supply chain relations-Significance of Logistics Supply chain relations-Requirements for achieving harmonious relations in logistics and supply chain.

REFERENCES

1. G.Raghuram &N Rangaraj, logistics and supply chain management-cases and concepts. Mc Millan
2. Martin Christopher, logistics and supply management ;creating value-adding networks ,FT press
3. Janat shah, logistics and supply chain management ;text and cases ,pearson
4. D K Agarwal,Textbook of logistics and supply chain management Mac Millan2003.

III BBA SYLLABUS FOR V AND VI SEMESTERS 2020-21
SELF STUDY PAPER
TITLE: MARKETING OF BANKING SERVICES

Unit – I:
Introduction of Banking - Definition of Bank – Meaning - History of Banking –Social Control - Nationalization of Banks – Role of Banks in Economic Development- Functions of Commercial Banks – Narasimhan Committee Recommendations Phase – I, Phase – II – Other Committee Recommendations.

Unit – II:
RBI – Functions – Role of Commercial Banks in the Economic Development - NABARD – Cooperative Banks – RRBs.

Unit – III:
Banker and customer definition and their relationship - Banker's Obligations -Different Types of Customers - Innovations in Banking –ATMs, Credit Cards, Online & Offshore Banking etc. – Green Banking

Unit – IV:
Banking Services – Customer services in Commercial Banks – Bank Marketing – Role of Information Technology (IT) in the Banking Sector – E- Banking – Recent Trends in Banking

Unit – V:
Marketing of Banking Services –Introduction of marketing - Four P's of marketing – marketing Management Concepts - Nature of Marketing of Banking Services – Purpose of Marketing Bank Services – Services rendered by Banks – Current Account – Saving Account – Fixed Deposit Account – Night Safe Facilities – Safe Custody – Leasing – Loan Syndication – Telegraphic Mail Transfer – Cheque Clearing – Bank Draft – Standing Orders – Problems facing in Marketing of Bank services – How to improve marketing of bank services

References:

1. Dr. C. Satyadevi "Financial Services – Banking and Insurance" – S. Chand Publishing – New Delhi.

2. Y. S. Kiranmayi, A. Uttama Durga Devi, "Banking Theory and Practice", Jai Bharat Publications, Guntur.

3. S.A. Sherlekar , R. Krishnamoorthy,Himalaya Publishing House Pvt.ltd

II B.SC., B.SC (H.SC), B.COM, B.A (EM), B.A (TM) III SEMESTER
FOUNDATION COURSE
ENVIRONMENTAL STUDIES SYLLABUS

UNIT – I

Multidisciplinary nature of Environmental Studies.

a). Definition, b) Scope, c). Importance of Environmental Studies.

Ecosystems: a) Types of Ecosystems b) Water bodies, Ponds, Lakes, Rivers c) Pond Ecosystem - Structure and components - producers, consumers, decomposers.

UNIT – II.

Natural Resources:

a) Forest Resources, b). Energy Resources

UNIT – III

Bio diversity and its conservation: a). Introduction. b).Types of Bio diversity – Genetic, species & Ecosystem diversities. c). Values of Bio diversity d). Hot spots of Bio diversity e). Threats to Bio diversity – Habitat loss, poaching of wild life. f). Endangered and endemic species of India. g). Conservation of Biodiversity.

UNIT – IV

Environmental Pollution : a)Air Pollution b) Water Pollution

Unit – V

Social Issues and the Environment: a) Water conservation methods: i) Rain water Harvesting, ii)) Water shed management b) Protection Acts: i) Environmental protection act, ii) Air act and Water act, iii) Wild life protection act, iv) Forest conservation act. c) Role of Information Technology in Environment and Human Health.

**Submission of report on mini project on Environmental Protection (25 marks).

II B.SC., B.SC (H.SC), B.COM, B.A (EM), B.A (TM) III SEMESTER
FOUNDATION COURSE
HUMAN VALUES & PROFESSIONAL ETHICS SYLLABUS

Module-1

1. Understanding Value Education.
2. Self exploration as a process of Value Education.
3. Continuous happiness and prosperity the Basic Human aspiration.
4. Right understanding and relationship.
5. Happiness and prosperity – Current scenario.
6. Method to fulfill Basic Human aspirations.

Module-2

1. Understanding Human being as coexistence of self and body.
2. Discriminating between the needs of self and body.
3. The body as an instrument of self and body.
4. Understanding harmony in the self and body.
5. Harmony of the self with the body.
6. Program to ensure Sanyam and Swasthya.

Module-3

1. Harmony in the family – Basic unit of Human interaction.
2. Values in Human to Human Relationship.
3. 'Trust'- the Foundation value in relationship.
4. 'Respect' as the Right evaluation.
5. Understanding harmony in the society.
6. Vision for universal human order.

Module-4

1. Understanding harmony in Nature.
2. Interconnectedness – self regulation and mutual fulfillment among from orders.
3. Realising existence as coexistence at all levels.
4. The holistic perception of Harmony in Existence.

Module-5

Implications of holistic understanding – a look at professional ethics.

1. Natural acceptance of Human values.
2. Definativeness of Human conduct.
3. Humanistic education. Humanistic constitution and universal human order.
4. Competence in professional ethics.
5. Holistic technologies, production systems and management models.
6. Strategies for Transition towards value based life and profession.