

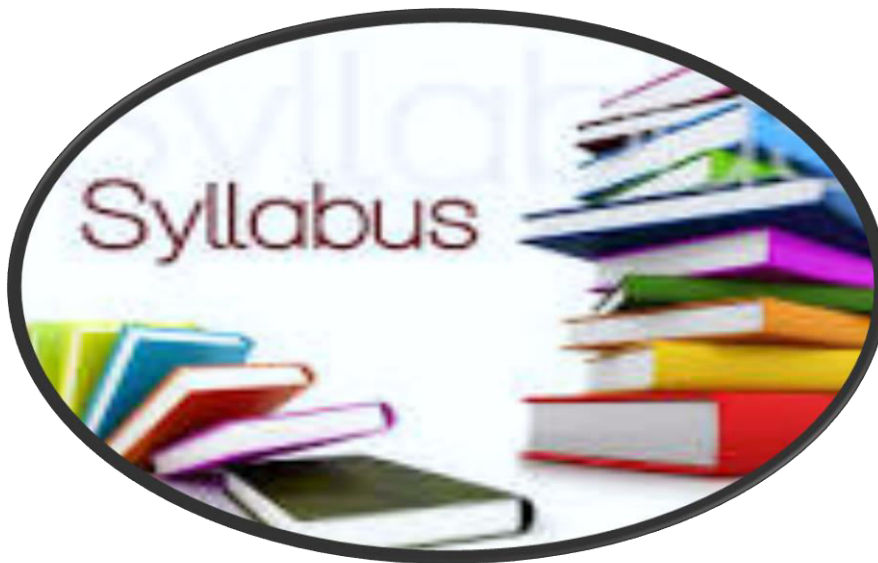


SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



AUTONOMOUS SYLLABUS 2019-2020



UG & PG



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

SEMESTER-I

1. Every unit shall state the objectives and expected deliverables.
2. Every lesson shall have
 - i) Questions on subject comprehension, paragraph, short note, single sentence answer types
 - ii) Exercises on vocabulary, syntax, and pronunciation
 - iii) Language exercises shall include exercises in paraphrasing, note-making and report writing wherever possible
 - iv) Pre -reading and post- reading activities.

Unit – I
PROSE

1. A.P. J. Abdul Kalam: The Knowledge Society (from Ignited Minds)
2. NgugiWaThiong'o: The Language of African Literature (from Decolonizing the Mind)

Unit – II
POETRY

1. Robert Frost: The Road Not Taken
2. Nissim Ezekiel: Night of the Scorpion

Unit – III
SHORT STORY

1. Mulk Raj Anand: The Lost Child
2. Henry Lawson: The Loaded Dog

Unit – IV

ONE - ACT PLAY

William Shakespeare: The Merchant of Venice (Court Scene – Act IV Scene -1)

Unit – V

LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
 - i. Single Sentence Answer Questions on Vocabulary (spelling), sound(pronunciation), sense (meaning), and syntax (usage)
2. Classroom Activity
 - i. Exercises in Articles and Prepositions
 - ii. Exercises in Tenses, Interrogatives and Question tags

Note: In classroom instruction it may be ensured that the theoretical and practical components of CSS-I complement the language activity in this semester



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

SEMESTER-I

Unit – I
PROSE

1. J. B.S Haldane: The Scientific Point of View
2. A.G. Gardiner: On Shaking Hands

Unit - II
POETRY

1. John Keats: Ode to Autumn
2. KishwarNaheed: I am not that Woman (from An Anthology of Commonwealth Poetry edited by C.D. Narasimhaiah)

Unit –III
SHORT STORY

1. Ruskin Bond: The Boy Who Broke the Bank
2. R. K. Narayan: Half a Rupee Worth

Unit – IV
ONE ACT PLAY

Anton Chekhov: The Proposal

Unit – V
LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
 - i. Transformation of Sentences (Voice, Speech and Degrees)
 - ii. Dialogue Practice (Oral)
 - iii. Listening Comprehension
2. Classroom Activity
 - i. Guided Composition
 - ii. Dialogue Writing
 - iii. Reading Comprehension



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

GENERAL ENGLISH SYLLABUS

FOR B.A/B.Com/B.Sc COURSES under CBCS

SEMESTER –III

Unit – I

PROSE

1. M.K. Gandhi: Shyness My Shield (from The Story of My Experiments with Truth)
2. Alexis C. Madrigal: Why People Really Love Technology: An Interview with Genevieve Bell

Unit – II

POETRY

1. Gabriel Okara: Once upon a Time
2. Seamus Heaney: Digging

Unit – III

SHORT STORY

1. IhumpaLahiri: The Interpreter of Maladies
2. Shashi Deshpande: The Beloved Charioteer

Unit – IV

ONE ACT PLAY

GurajadaAppa Rao: Kanyasulkam, translated by C. Vijayasree & T. VijayaKumar (Acts I & II)

Unit – V

LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
 - i. JAM Sessions
 - ii. Note Taking
 - iii. Reporting for the Media
 - iv. Expansion of an idea
2. Classroom Activity
 - i. Transformation of sentences (Simple-Complex-Compound Sentences)
 - ii. Note Making
 - iii. Report Writing
 - iv. Writing for the Media

Note: In classroom instruction it may be ensured that the theoretical and practical components of CSS-II complement the language activity in this semester.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF TELUGU

SYLLABUS 2019-2020

GENERAL TELUGU

COMMON FOR BA/B.COM/B.SC

I. PRACHEENA KAVITWAM:

A. NANNAYA: Gangashanthanulakatha

Andramahabharatham – adiparvam –nalgavaaswasam - (120-165)

“ naravarudagushanthanunaku” nundi “divyabhushanalamkrutha” varaku

B. THIKKANA: Dropadiparidevanam

Andhramahabharatham – udyogaparvamtrutiyaswasam – (100 -125)

“dhrmanandunupalukulu” nundi ani yuradilagabalikina” varaku.

II. ADHUNIKA KAVITWAM:

A. Gurajada –Kanyaka

B. SreeSree - Deshacharitralu

III. KADHANIKALU:

A. Papinenisivashankar -Chinthalatopu.

B. Bandinarayanaswami – Savukudu.

IV. VYAKARANAM:

A. SANDHULU: Savarnadeerga, guna,vruddi, yanadesha, trika, ga.sa.da.da.vadesha, rugaagama, tugagama, amreditha, athwa, ithwa, uthwa, sandhulu.

B. SAMASALU: Tathtpurusha, karmadaaraya, dvamdva, dvigu, bahuvreehee.

C. AKSHARADOSHALU: Doshalusarididdisaadhurupalurayali.

V. VIDYARTI KRUTYALU:

SreeSreekavithadeshacharitalakusambandichinaperadilanusekarinchandi

Mutyalasaraaluchandasularachanalucheseprayatnamcheyandi.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF TELUGU

SYLLABUS 2019-2020

GENERAL TELUGU

COMMON FOR BA/B.COM/B.SC

SEMESTER - II

I. PRAACHEENA KAVITWAM:

A. Durjati – Saayujyamu

SrikalahasthiMahatyam – Dwithiyaaswaasam (109 -139)

B. ChemakuraVenkatakavi – Subhadra Parinayam

Vijaya vilaasam – moodavaaaswaasam (93 -139)

II. AADUNIKA KAVITWAM:

A. Jaashuva – Piradousilekha (Aasulthan... nundi “Anuchulikinche” varaku)

B. Geddaku Satyam – Chettukandika 1 – 25 padyaalu

(KavithaaVaijyanthiPadyaSankalanamNundi)

III. KATHANIKALU:

A. KethuViswanaathareddy - NammukunnaNela

B. MuppalaRanganayakamma – AmmakuAadivaaramleda?

IV. NAVALA:

Dr. V.R. Raasaani – Bathukaata

V. VIDYAARTHI KRUTHYALU:

1. Subhadra VivaahaAachaarulu –

EenaatiVivaahaAachaaruluThulanaathmakangaaPariseelinchaali.

2. MeekuNachina Oka

Chettukusambandinchinapurthisamaacharaannisekarinchandi.

3. **Mee inti
nepadyamloAmmalakuAadivaaramundoledookasangatanaaadhaarangakathara
ayandi.**
4. **NammukunnanelakathaloniRaithulagaadhalanuchitraalathodinapatrikalaadha
arangasekarinchandi.**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF TELUGU

SYLLABUS 2019-2020

GENERAL TELUGU

COMMON FOR BA/B.COM/B.SC

SEMESTER - III

I. PRAACHINA KAVITHWAM:

1. Pothana – Vaamanaavatharam
2. AandhraMahabhogavatham 8 vaskandam (582 – 621)
3. Koravigoparaju – Salivaahana Vijayam
4. SimhaasanaDwaathrimika – 1va Aaswaasam (115 -165)

II. AADHUNIKA KAVITHWAM:

1. Kusuma Dharmanna – HarijanaSathakamu (1 -20)
2. Rayaprolu Subbarao – SankraanthiSambaram – Misramanjarilonchi – “AiduLakshalaAravaDedulu” nundi “Mangalam SankraanthiSaamethi” varaku.

III- GADYA BHAAGAM (VYAASA SAMPUTI)

1. AcharyaGujjarlamudiKrupaachaari – Telugu Bhasha.
2. AcharyaRachapalyam Chandrasekhar Reddy VyakthithwaVikasam.

IV- CHANDASSU – ALANKAARAALU

1. Chandassu – Uthpalamaala, Champakamaala, Saardulam, Mathebham, Kandam, Tetageethi, Aataveladi.
2. Alankaaraalu – Upama, Rupaka, Uthpreksha, Swabhavokthi, Athisayokthi, Ardaantharanyasa, Drustaantha, Sabdaalankaaralu.

V- VIDYAARTHI KRUTHAALU:

1. Telugu Vaaralu, Thidulu, Nakshathralu, SamvacharalaPerluNerchukondi.
2. Meevyakthitwaannimeeruyevidangameruguparuchukuntunnarovyasamrayandi.
3. Anthyanupraasaalankaramlookakavithanusonthangarayandi.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



**DEPARTMENT OF HINDI
SYLLABUS 2019-2020
GENRAL HINDI
COMMON FOR BA/B.COM/B.SC
Semester -I**

I – Gadyasandesh(Prose)

1. Sanskruthi Aur Sahitya Ka Paraspar Sambaundh
2. Bharath ek Hai
3. H.I.V (AIDS)
4. Katha Lok (Short Story)

II- Katha Lok (Short Story)

1. Zariya
2. BhookHadthal
3. Parmathma Ka Kutta

III- Vyakaran (Grammar)

1. Karyalayeen Hindi (Changing Administrative Terminology Hindi to English and English to Hindi)

IV- Vyakaran (Grammar)

1. AppnevakyonmeishabdhProyogkaryalayi Hindi (Hindi se English)

Sndivichedhi

V- Patralekhan (Letter writing)

1. Aavedan Patr



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



**DEPARTMENT OF HINDI
SYLLABUS 2019-2020
GENERAL HINDI
COMMON FOR BA/B.COM/B.SC
Semester -II**

I- Gadyasandesh (Prose)

- 1. Sahitya ki Manatta**
- 2. Sachi veeratha**
- 3. Mitratha**

II- Kathalok (Short Story)

- 1. Mukthidhan**
- 2. Goodad Sai**
- 3. Usne Kahatha**

III- Vyakaran (Grammar)

- 1. Ling, Vachan, Kal, Vachya, Vakyonki Shuddi**

IV- Vyakaran (Grammar)

- 1. Shabdh Prayug**
- 2. Karyalayeen Hindi (Paribhashik Shabdavali English se Hindi)**
- 3. Vilome Shabdh.**

V- Patra lekhan (Letter Writing)

- 1. Vyakthigath Aur Sarkari Patra.**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF HINDI
SYLLABUS 2019-2020
GENERAL HINDI
COMMON FOR BA/B.COM/B.SC
Semester -III

- I- Kavyadeep 9 Ancient and Modern Poetry)**
- 1. Kaberdas-sakhee (1 to 10)**
 - 2. Soordas ka Bal Varnan**
 - 3. Mathra Bhoomi**
 - 4. ThodthiPaltav**
 - 5. GeethFarosh**
- II- Hindi Sabitya Ka Ethihis (History of Hindi Literature)**
- 1. Bhakthikal**
Gnanasrayi- Kabeer
Pvemasrayi-Jayasee
- III- SadhavanNibandh (General Essays)**
- 1. Samachar Patra**
 - 2. BearikiSamasya**
 - 3. Computer**
 - 4. ParyavaranAurPradooshan**
 - 5. Sahitya AurSamaj**
- IV- Anuvaad (Translation)**
- 1. AnuvaadAbyas English se Hindi (Four or Five Lines)**
- V- Prayojanmoolak Hindi (Functional Hindi)**
- 1. Paripalna**
 - 2. Gnapan**
 - 3. Sookhana.**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

GENERAL URDU

COMMON FOR BA/B.COM/B.SC

FIRST (B) SEMESTER

SEMESTER - I

(Common to B.A/B.Com/B.Sc/BBA)

Paper I: POETRY

UNIT -I

1. GHAZAL

MEER –Uti ho gaveen sab tadbeeren

2. NAZM

IQBAL –Naya Shivalah

UNIT -II

1. GHAZAL

GHALIB –Ye na thi hamari khismat

2. NAZM

Akbar Ilahabadi –Nasihah-e-Aqlaaqi

UNIT -III

1. GHAZAL

HALI –Uske jate hi ye kya ho gavee ghar ki surat

2. NAZM

FAIZ –Mujhse pehli si muhabbat meri mehboob

UNIT -IV

1. GHAZAL

YASEER KURNULI –Rafeeq-o-hamnafas

2. NAZM

AKHTARUL IMAAN –Khabr

UNIT -V

1. GHAZAL

RAHI FIDAYI –Apni tareeq ke raqim ke live

2. NAZM

IQBAL QUSRO –Izn-e-Aam

Prescribed book: MUNTAKHAB ADAB -I



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

GENRAL URDU

COMMON FOR BA/B.COM/B.SC

SEMESTER - II

Common to B.A/B.Com/B.Sc/BBA

Prose

Unit-I

Mazmoon 'Behas-o-Takrar' – Sir Syed

Unit-II

Afsana 'Toba Tek Singh' – Manto

Unit-III

Drama 'Gud ki Makhiyan' – Kareen Rumani

Unit-IV

Muraqqa 'Ustad-e-Muhatarram Zore Sahib' – Sulaiman Athar
Jaweed

Unit-V

Inshaiya 'Padiye gar beemar' – Mushtaq Ahmed Yusufi



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

GENERAL URDU

Semester-III

COMMON FOR BA/B.COM/B.SC

Prose and Poetry

UNIT – I Dastan – Mir Amman– Bagh-o-Bahar-AghazKhishe ka

**UNIT–IIKhutooteGhalib–BanaamMirMehdiMajroohAur
Hatim AliMehtar**

UNIT – III Masnavi – IbneNishati – Phoolbun – Aaghaze Dastan - 21 Sher

**UNIT–IVMarsiya–MeerAnees–
JabQatakimasafateshabaaftabne(Ibtidayi6bandmusaddaske)**

UNIT – V Rubaiyaat

- 1. AmjadHyderabadi–‘Harcheezkakhonabhi‘**
- 2. SagharJayyedi–‘ Tareefkimeezaan pe tuljatehain**

Prescribed Book: MUNTAKHAB ADAB –II



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

I B.A SPECIAL ENGLISH

I SEMESTER

I Year, Semester I, Paper - I:

An Introduction to English Language and Literature-I

Unit	Module	Topic	Marks
1	History of English Literature	Old English and Middle English Periods	20 marks (2 Essays)
2	Philology	History and Development of the English Language (Scandinavian, Latin, Greek, French influences, Native Resources and other influences)	20 marks (4 paragraph questions)
3	Literary Forms and Terms	Ballad, epic, romance, lyric, ode, elegy, pastoral elegy, sonnet, rhyme, meter, mystery / miracle plays, morality play, metaphysical conceit	15 marks (3 paragraph questions)
4	Poetry	John Donne: Death, be not Proud	10 marks (1 essay)
5	Prose	Francis Bacon: Of Studies	10 marks (1 essay)
Internals : 25			Total marks: 100

Recommended Reference books

1. **A History of English Literature** by W.J Long
2. **A Critical History of English Literature** by David Daiches (Published by Supernova)
3. **The Cambridge History of English Literature** by Ward and Waller (Published by Kessinger)
4. **A Glossary of Literary Terms** by MH Abrams (Published by Cengage)
5. **The Penguin Dictionary of Literary Terms and Literary Theory** by J.A. Cuddon (Published by Penguin)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

I B.A SPECIAL ENGLISH

II SEMESTER

I Year, Semester II, Paper-II:

Unit	Module	Topic	Marks
1	History of English Literature	Renaissance(Elizabethan and Jacobean – 15 th & 16 th Century)	20 marks (2 Essays)
2	Literary Forms and Terms	Simile, metaphor, personification, alliteration, apostrophe, hyperbole, allegory, allusion, anti-climax, irony, blank verse, tragedy, comedy, tragic-comedy, chronicle play, masque, comedy of humours, farce	15 marks (3 paragraph questions)
3	Drama	William Shakespeare: Twelfth Night	20 marks (2 Essays)
4	Poetry – I	1.Thomas Gray: Elegy Written in a Country Churchyard	10 marks (1 essay)
5	Prose - II	John Milton: Extract from book IX - Fall of Adam and Eve	10 marks (1 essay)
Internals : 25			Total marks: 100

An Introduction to English Literature II

Recommended Reference Books

1. **A History of English Literature** by W.J Long
2. **A Critical History of English Literature** by David Daiches (Published by Supernova)
3. **The Cambridge History of English Literature** by Ward and Waller (Published by Kessinger)
4. **A Glossary of Literary Terms** by M.H Abrams (Published by Cengage)
5. **The Penguin Dictionary of Literary Terms and Literary Theory** by



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

II B.A SPECIAL ENGLISH

III SEMESTER

PAER III

Unit	Module	Topic	Marks
1	History of English Literature	Restoration and Augustan Periods (17 th and 18 th Centuries)	20 marks (2 Essays)
2	Literary Forms and Terms	Satire, mock-epic, heroic couplet, epistle, heroic tragedy, comedy of manners, genteel comedy, sentimental comedy, periodical essay,	15 marks (3 paragraph questions)
3	Poetry	Alexander Pope: Extracts from The Rape of the Lock , canto-1	20 marks (2 Essays)
4	Prose	Daniel Defoe: Robinson Crusoe	10 marks (1 essay)
5	Drama	William Congreve: The Way of the World	10 marks (1 essay)
Internals : 25			Total marks:100

II Year, Semester III, Paper-III:

An Introduction to English Language and Literature III

Recommended Reference Books

1. **A History of English Literature** by W.J Long
2. **A Critical History of English Literature** by David Daiches (Published by Supernova)
3. **The Cambridge History of English Literature** by Ward and Waller (Published by Kessinger)
4. **A Glossary of Literary Terms** by MH Abrams (Published by Cengage)
5. **The Penguin Dictionary of Literary Terms and Literary Theory** by J.A. Cuddon (Published by Penguin)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

II B.A SPECIAL ENGLISH

IV SEMESTER

PAER IV

Unit	Module	Topic	Marks
1	History of English Literature	Romantic and Victorian Periods	20 marks (2 Essays)
2	Literary Forms and Terms	biography, autobiography, melodrama, historical novel, sentimental novel, gothic novel, regional novel, flat character, round character, protagonist, antagonist	15 marks (3 paragraph questions)
3	Poetry 1	John Keats: Ode to a Nightingale	10 marks (1 essay)
4	Prose	Jane Austen: Pride and Prejudice	20 marks (2 Essays)
5	Poetry 2	Robert Browning: How do I Love thee?	10 marks (1 essay)
Internals : 25			Total marks: 100

II Year, Semester IV, Paper-IV:

An Introduction to English Literature IV

Recommended Reference Books

1. **A History of English Literature** by W.J Long
2. **A Critical History of English Literature** by David Daiches (Published by Supernova)
3. **The Cambridge History of English Literature** by Ward and Waller (Published by Kessinger)
4. **A Glossary of Literary Terms** by MH Abrams (Published by Cengage)
5. **The Penguin Dictionary of Literary Terms and Literary Theory** by J.A. Cuddon (Published by Penguin)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

III B.A SPECIAL ENGLISH

V SEMESTER

Paper-VI

English Syllabus - V Semester

Paper VI - Glimpses of World Literature

Unit 1 - Poetry

Wole Soyinka: Telephone Conversation

Unit 2 - Drama

Girish Karnad: Tale-Danda

Unit 3 - Novel

1. Dostoyevsky: Crime and Punishment

2. Ngugi Wa Thiong'o: A Grain of Wheat

Unit 4 - Short Story

Nadine Gordimer: My Son's Story



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

III B.A SPECIAL ENGLISH

VI SEMESTER

Paper-VII

English Syllabus - General Paper
Paper VII - A Study of English Language

Unit 1:

Indo-European Family of Languages, Grimm's Law, Verner's Law and the First Sound Shift

Unit 2:

Old English, Middle English, Modern English

Unit 3:

Various Influences on the English Language

Unit 4:

Change of meaning and Word-Formation

Unit 5:

Role of Grammar in Language Development



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

III B.A SPECIAL ENGLISH

VI SEMESTER

Paper-VIII-A

Advanced English Syllabus - Cluster Paper I
Paper VIII (A) – A Study of Literary Criticism

Unit 1

Aristotle: Poetics

Unit 2

Sir Philip Sidney: Apology for Poetry

Unit 3

John Dryden: An Essay of Dramatic Poesy

Unit 4

William Wordsworth: Preface to Lyrical Ballads

Unit 5

Thomas Stearns Eliot: Tradition and Individual Talent



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

III B.A SPECIAL ENGLISH

VI SEMESTER

Paper-VIII -B

Paper VIII (B) - American Literature

Unit 1 - Poetry

1. Walt Whitman: O Captain, My Captain

2. Edwin Arlington Robinson: Richard Cory

Unit - Drama

Arthur Miller: Death of a Salesman

Unit - Novel

Ian McEwan: Atonement

Unit - Essay

Ralph Waldo Emerson: Self Reliance



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ENGLISH

SYLLABUS 2019-2020

III B.A SPECIAL ENGLISH

VI SEMESTER

Paper-VIII (C)

Paper VIII (C) - Indian Literature

Unit 1 - Poetry

1. Nissim Ezekiel: The Patriot
2. Toru Dutt: Our Casuarina tree

Unit - Novel

1. Mulk Raj Anand: The Untouchable
2. Jhumpa Lahiri: The Namesake

Unit 3 - Drama

Mahesh Dattani: Final Solutions



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

I B.A. ADVANCE URDU

I SEMESTER

First year Optional Urdu

SEMESTER - I

First year Optional Urdu Paper - I
URDU PROSE
Afsanavi Adab aur Drama

UNIT – I	Novel - Taaruf aur Irteqa
UNIT – II	Novel 'Nirmala' by Premchand
UNIT – III	Afsana - Taaruf aur Irteqa
UNIT – IV	Urdu Afsane edited by Raziya Sajjad Zaheer. The following short stories only: 1. 'Woh' by Balraj Menra 2. 'Computer Isq' by Joginder Pal 3. 'Lal aur Peela' by K.A.Abbas 4. 'Mom ki Mariyam' by Jeelani Banu 5. 'Allah de Banda le' by Raziya Sajjad Zaheer
UNIT – V	Drama 'Darwaze Khol Do' by Krishan Chander



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

I B.A. ADVANCE URDU

SEMESTER - II

First year Optional Urdu Paper - II

URDU PROSE

Ghair Afsanavi Adab

- UNIT – I** **SAFARNAMA - ‘Bullet Train mein kabhi na baitho’**
by Mujtaba Hussain
- UNIT – II** **KHAKA - Taaruf aur Irteqa**
- UNIT – III** **Khaka - ‘ Dr.Abdul Haq marhoom’ by Rasheed Ahmed**
Siddiqui.
- UNIT – IV** **INSHAIYA - Taaruf aur Irteqa**
- UNIT – V** **Inshaiya – ‘Jheengar ka Janaza’ by**
Khwaja Hasan Nizami



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

II B.A. ADVANCE URDU

III SEMESTER

PAER III

URDU POETRY

Prescribed book :GowhareAdab by A.P.UrduAcademy

- UNIT– I MASNAVI – A portion of
Gulzar-e-Naseem
'Aanatajulmulookkasehrae
tilismse'
- UNIT– II GHAZAL – The following Ghazalonly:
1.'Bas kedushwarhaiharkaam' by Ghalib
2. 'Wohadaedilbarihokenawae' by Jigar
3. 'Jalakemashalejan hum' by
Majrooh
- UNIT– III NAZM
1. 'Roohearziaadam ka
isteqbalkartihai' By
Allama Iqbal
2. 'Sagar kekinare' by Maqdoom
- UNIT– IV Ghazalgoshorakisawaneh
1.Ghalib 2.Jigar 3.Majrooh
- UNIT– V Nazmgoshorakisawaneh
1.Allama Iqbal 2.Maqdoom



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

SEMESTER - IV

SECOND YEAR ADVANCE URDU PAPER - IV

URDU POETRY

Prescribed book :GowhareAdab by A.P.UrduAcademy

- | | |
|-----------|--|
| UNIT– I | QASEEDA –Ta'aruf |
| UNIT– II | QASEEDA – Mohsin Kakori
(Selected portion) 'Simtekashi
se chalajanibemathurabadal' |
| UNIT– III | MARSIYA –Ta'aruf |
| UNIT– IV | MARSIYA – Meer Anees
(Selected portion)
'Namakekhwantakallumh
aifasahatmeri' |
| UNIT– V | Biography of following poets:
1.MohsinKakori 2. MeerAnees |
-



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

SEMESTER - V
SECOND YEAR ADVANCE URDU PAPER - V

Paper - V: Tareekh-e-Adab Urdu
2019-2020

No. of Hours/week: 05 credits 4

UNIT – I

1-Urdu Zuban Ka Agaz-O-Irtakha:

1-1 Miktalif Nazriyat-Shokat Thanayi-

1-2 Mahamood Khan Shirani

UNIT – II.

2- Dakni Douar-Ke-Ousiyat-Mahammad Quli Qutub Sha

2-1 Mulawajahi

2-2 Nusrathi

UNIT – III

3- Dabistana Dilhi–Ke-Ousiyat-

3-1 Dard

3-2 Zagak

UNIT – IV

4-Dabistana Laknow–Ke-Ousiyat-

4-1 Attish

4-2 Nasiq

UNIT – V

5- Sir Sayed Taharik Ke-Ousiyat-

5-1 Rumani Taharik

5-2 Tarakhi Pasand Taharik

Prescribed book- Tariqe Adabe Urdu by Noorulhasn Naqvi



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

III YEAR ADVANCE URDU

SEMESTER - VI

Paper – VI : TanqeedaurBalaghat

No. ofHours/week:05credits-4

UNIT – I

- 1- Urdu Tanqeed- Agaz-O-Irtakha
- 1-1 TaztiratiTanqeed
- 1-2 Shari maa TanqeediNaqhas

UNIT– II

- 2- Altaf Hussain Hali- Tanqeed
- 2-1 MakhadamaShair-O-Shariri-Ahamiath
- 2-2 Allama Shibli NomanikyTasneef'Shair-ul-Ajaz- Ahamiath

UNIT – III

- 3- Thakhak-O-Tanqeed ka Bahami Rishta
- 3-1 Takleek-O-Tanqeed
- 3-2 Nakhad ka Faravaz

UNIT – IV

- 4- Tanqeed ka MuktalifRumaniTankhidkiKhusisyath
- 4-1 TasoratiTanqeedkiKhusisyath
- 4-2 MarkasiTanqeedkiKhusisyatha

UNIT – V

- 5- AhamTanqeedNigar-Syed EhtashamHussin
- 5-1 Mahammad HussinAjad
- 5-2 FirakGorakhpuri

List of reference books :

- 1- FannTanqeedaurtanqeed Nigari ByNoorul Hasan Naqvi
- 2- MakhadamaShair-o-Shari
- 3- Shair-Al-Ajjam



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

III YEAR ADVANCE URDU

SEMESTER - VI

Semester - VI (CBCS Common to BA/BSC/B.COM)
Paper – VII: Urdu Shari-KhadeemAsnaf

No.ofHours/week : 5 Credits4

UNIT-I

- 1- Masnavi: Agaz-o- Artakha
1-1 Masnavi: AjazaTakibi
1-2 Masnavi: Khusisivath

UNIT-II

- 2- Qasida :Agaz-o- Artakha
2-1 Qasida :AjazaTakibi
2-2 Qasida :Khusisivath

UNIT-III

- 3- Marsiya: Agaz-o- Artakha
3-1 Marsiya: AjazaTakibi
3-2 Marsiya: Khusisivath

UNIT-IV

- 4- Rubayi: Agaz-o- Artakha
4-1 Rubayi: AjazaTakibi
4-2 Rubayi: Khusisivath

UNIT-V

5. Shorakisavani: Meer Hussain
5-1 Soda
5-2 Dabir
5-3 AkbarAlhabadi

Reference Books :



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

III YEAR ADVANCE URDU

Paper – VIII(A1): AisanaviAdab

No. of Hours/week:05

Credits:4

UNIT-I

1. Dastan: Agaz-o-Irtakha
- 1.1 Dastan :AjzaTarkibi
- 1.2 Dastan: Kusisyath

UNIT-II

- 2 Drama: Agaz-o-Irtakha
- 2.1 Drama :AjzaTarkibi
- 2.2 Drama: Kusisyath

UNIT-III

3. Novel: Agaz-o-Irtakha
- 3.1 Novel :AjzaTarkibi
- 3.2 Novel: Kusisyath

UNIT-IV

4. Afsana: Agaz-o-Irtakha
- 4.1 Afsana :AjzaTarkibi
- 4.2 Afsana: Kusisyath

UNIT-V

5. AhamAfsanaviAddib: Meer Aman
- 5.1 Imtaiz Ali Taj
- 5.2 Deputy Nazeer Ahamad

Reference Books:



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

III YEAR ADVANCE URDU

Paper – VIII(A2) : Gair Afsanavi Adab

No. of Hours/week: 05

Credits: 4

UNIT-I

1. Savani Nigari : Agaz-o-Irtakha
- 1.2 Savani Nigari : Khusisiyath
- 1.3 Savani Nigar : Altaf Hussainki Savani Nigari

UNIT-II

2. Khutut Nigari : Agaz-o-Irtakha
- 2.2 Khutut Nigari : Khusisiyath
- 2.3 Khutut Nigar : Galibki Khutut Nigari

UNIT-III

3. Khaka Nigari : Agaz-o-Irtakha
- 3.2 Khaka Nigari : Khusisiyath
- 3.3 Khaka Nigar : Rashid Ahamadki Khaka Nigari

UNIT-IV

4. Mazmoon Nigari : Agaz-o-Irtakha
- 4.2 Mazmoon Nigari : Khusisiyath
- 4.3 Mazmoon Nigar : Sir Syed Ahamadki Mazmoon Nigari

UNIT-V

5. Safar Nama : Agaz-o-Irtakha
- 5.2 Safar Nama : Khusisiyath
- 5.3 Safar Nama Nigar : Yusaf Nazim ki Safar Nama nigari
(Safar Nama "Kolambas ka Dash Maa")

Books Recommended:



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF URDU

SYLLABUS 2019-2020

III YEAR ADVANCE URDU

Syllabus for B.A. Part – II Urdu

Third year Optional Urdu Paper (Cluster Elective)
PAPER-VIII-A3

SPECIAL STUDY OF MOULANA ABUL KALAM AZAD

Prescribed book: Moulana Azad ki Kahani
by Zaffar Ahamed Nizami

UNIT-I BACH'PAN

UNIT-II SAHAFAT

UNIT-III CONGRESS KI SADARAT

UNIT-IV VIZARAT

UNIT-V TASANIF



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF HISTORY

SYLLABUS 2019-2020

B. A. HISTORY

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – I

Paper – I (Core Paper) ANCIENT

INDIAN HISTORY & CULTURE (from earliest times to 600 A.D) (*Indian History and Culture from Earliest Times to 647 A.D*)

Unit – I	Survey of Sources: Literary & Archaeological Sources; Influence of Geography on History; Unity in Diversity; Traces of Stone Age Cultures (Circa 3,50,000 B. C to 3,000 B. C); Indus Valley Civilization (Circa 3000 B. C to 1,500 B. C): Origin, Extent, Salient Features.
Unit – II	Vedic Age & Religious Reform Movements (Circa 1500 B. C to 600 B. C): Society, Polity, Economy, Culture during early and later Vedic period; Jainism and Buddhism: Causes, Doctrines, Spread, Importance and Impact.
Unit - III	Transition from Territorial States to Emergence of Empires (Circa 600 to Century to 300 B. C): Rise of <u>Mahajanapadas</u> – Causes for Magadha's Success; Persian and Macedonian Invasions; Mauryan Empire: State, Imperial Administration, Economy, <u>Ashoka's Dhamma</u> , Art & Architecture, Significance & Downfall.
Unit - IV	Conditions during 200 B. C to 300 A. D.: Central Asian Contacts – <u>Kushanas</u> – Aspects of polity, society, Economy, Religion, Art & Architecture; The Age of <u>Satavahanas</u> : Pattern of Administration – Social, Economic, Religious & Cultural Developments; Sangam Age: The Three Early Kingdoms (<u>Chola</u> , <u>Chera</u> & <u>Pandya</u>) – Society, Language & Literature.
Unit – V	India between 300 A. D & 600 A. D.: The Rise and Growth of Guptas: Administration, Society, Economy, Religion, Art, Literature and Science & Technology – Decline.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF HISTORY

SYLLABUS 2019-2020

B. A. HISTORY

B. A. HISTORY

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – II

Paper – II (Core Paper)

EARLY MEDIEVAL INDIAN HISTORY & CULTURE (600 A.D to 1526 A. D.)

(Indian History and Culture from 647 to 1526 A.D)

Unit - I	Harsha & His Times: Administration, Religion – <u>Huen Tsang</u> -Polity, Society, Economy and Culture from 7 th to 11 th Century A. D. under <u>Chalukyas</u> of Badami& Eastern <u>Chalukyas</u> of Vengi.
Unit - II	Age of later <u>Pallavas</u> during 7 th & 8 th Centuries A. D.: Contribution to Cultural Development & Art & Architecture; The <u>Chola</u> Empire from 9 th to 12 Century A. D.: Rise of the Empire, Administration and Cultural Life.
Unit - III	Conditions in India on the eve of Turkish Invasions; Early Invasions: Traces of Arab Invasion, <u>Ghazni&Ghori</u> ; Delhi Sultanate (1206 to 1290 A.D.) under Slave <u>Dyanasty</u> .
Unit - IV	Delhi Sultanate (1290 to 1526 A.D.): <u>Khaljis</u> : Expansion & Consolidation, Administrative & Economic Reforms - The <u>Tughlaqs</u> - Decline & Disintegration of the Delhi Sultanate; Administration, Society, Economy, Technology, Religion, Art & Architecture under the Sultanate.
Unit - V	Cultural Development in India between 13 th & 15 th Centuries A. D.: Impact of Islam on Indian Society and Culture – <u>Bhakti</u> and <u>Sufi</u> Movements – Emergence of Composite Culture.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF HISTORY

SYLLABUS 2019-2020

B. A. HISTORY

I II Year B. A. Programme (UG)

Courses – Under CBCS Semester – III

Paper – III (Core Paper)

LATE MEDIEVAL & COLONIAL HISTORY OF INDIA (1526 to 1857 A. D.)

(History and Culture of India (1526 – 1857))

Unit – I	India from 1526 to 1707 A. D.: Emergence of Mughal Empire - Sources, Conditions in India on the eve of Babur's invasion, Brief Summary of Mughal Polity – Sher Shah & Sur Interregnum – Expansion & Consolidation of Mughal Empire – Rise of Marathas & Peshwas.
Unit – II	Administration, Economy, Society and Cultural Developments under the Mughals – Disintegration of Mughal Empire.
Unit - III	India under Colonial Hegemony : Beginning of European Settlements – Anglo-French Struggle – Policies of Expansion - Subsidiary Alliance & Doctrine of Lapse - Consolidation of British Empire in India up to 1857 A. D.
Unit - IV	Economic Policies of the British (1757-1857): Land Revenue Settlements – Commercialization of Agriculture – Impact of Industrial Revolution on Indian Industry ; Administration of the Company – Regulating Charter Acts; Cultural & Social Policies: Humanitarian Measures & Spread of Modern Education
Unit – V	Anti-Colonial Upsurge – Peasant & Tribal Revolts - 1857 Revolt – Causes, Nature & Consequences.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF HISTORY

SYLLABUS 2019-2020

B. A. HISTORY

II Year B. A. Programme (UG) Courses

– UnderCBCS Semester –IV

Paper – IV (Core Paper)

SOCIAL REFORM MOVEMENT & FREEDOM STRUGGLE (1820 to 1947 A.D.)

(History and Culture of India (1857 – 1947))

Unit – I	Social, Religious & Self-Respect Movements: Social & Cultural Awakening – Brahma Samaj, Arya Samaj, Theosophical Society, Ramakrishna Mission, Aligarh Movement – Emancipation of Women – Struggle Against Caste: JyotibaPhule, Narayana Guru, Periyar, Dr. B. R. Ambedkar.
Unit – II	Growth of Nationalism in the 2nd Half of 19th Century – Impact of British Colonial Policies under Viceroy's Rule and the Genesis of Freedom Movement – Birth of Indian National Congress.
Unit - III	Freedom Struggle from 1885 to 1920: Moderate Phase — Partition of Bengal - Emergence of Militant Nationalism –Swadeshi & Boycott Movement – Home Rule Movement.
Unit - IV	Freedom Struggle from 1920 to 1947: Gandhiji's Role in the National Movement – Revolutionary Movement –Subhas Chandra Bose.
Unit – V	Muslim League & the Growth of Communalism – Partition of India – Advent of Freedom - Integration of Princely States into Indian Union – SardarVallabhai Patel.

B. A. HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
 Semester – V
 Paper – V (Core Paper) _____ **AGE**
OF RATIONALISM AND HUMANISM THE WORLD
BETWEEN 15TH& 18TH CENTURIES
(History of Modern World (1453 – 1821 A.D))

Unit – I	Feudalism -Geographical Discoveries: Causes – Compass & Maps – Portugal Leads and Western World Follows – Consequences;
Unit – II	The Renaissance Movement: Factors for the Growth of Renaissance – Characteristic Features - Transformation from Medieval to Modern World; Reformation & Counter Reformation Movements: The Background – Protestantism – Spread of the Movement– Counter Reformation– Effects of Reformation
Unit - III	Emergence of Nation States: Contributory Factors - England and other Nation States – Impact due to the Emergence of Nation States.;Age of Revolutions: The Glorious Revolution (1688) – Origin of Parliament – Constitutional Settlement – Bill of Rights – Results.
Unit - IV	Age of Revolutions: The American Revolution (1776) – Opening of New World – Causes – Course – Declaration of Independence, 1776 – Bill of Rights, 1791 – Significance.
Unit – V	Age of Revolutions: The French Revolution (1789) – Causes - Teachings of Philosophers - Course of the Revolution – Results.

References:

1	Burke, Peter, The Renaissance
2	C.J.H. Hayes, Modern Europe up to 1870

B. A. HISTORY
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – V

Paper – VI (Core Paper) **HISTORY**
& CULTURE OF ANDHRA DESA (from 12th to 19th Century A.D.) (*History and Culture of Andhra from Satavahanas to 1857 A.D*)

Unit – I	Andhra during 12 th & 13 th Centuries A.D.: Kakatiyas – Origin & its Antecedents – Administration – Social & Economic Life – Industries & Trade - Promotion of Literature and Culture – Architecture & Sculpture – Decline; The Age of Reddy Kingdoms: Patronage to Literature – Trade & Commerce.
Unit – II	Andhra between 14 th & 16 th Centuries A.D.: Vijayanagara Empire: Polity, Administration, Society & Economy – Sri Krishna Devaraya and his contribution to Andhra Culture – Development of Literature & Architecture – Decline and Downfall.
Unit - III	Andhra through 16 th & 17 th Centuries A.D.: Evolution of Composite Culture - The QutbShahis of Golkonda – Origin & Decline – Administration, Society & Economy – Literature & Architecture.
Unit - IV	The 18 th & 19 th Centuries in Andhra: East India Company's Authority over Andhra – Three Carnatic Wars – Occupation of Northern Circars and Ceded Districts –Early Uprisings – Peasants and Tribal Revolts.
Unit – V	The 18 th & 19 th Centuries in Andhra: Impact of Company Rule on Andhra – Administration – Land Revenue Settlements – Society – Education - Religion – Impact of Industrial Revolution on Economy – Peasantry & Famines – Contribution of Sir Thomas Munroe, C. P. Brown & Sir Arthur Cotton – Impact of 1857 Revolt in Andhra

B. A. HISTORY
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – VI

Paper – VII
HISTORY OF MODERN EUROPE (from 19th Century to 1945 A.D.)
(*History of Modern World (1821 – 1945)*)

Unit – I	Industrial Revolution: Origin, Nature and Impact.
Unit – II	Unification Movements in Italy & Germany and their Impact.
Unit - III	Communist Revolution in Russia – Causes, Course and Results – Impact on World Order.
Unit - IV	World War I: Age of Rivalry in Europe Between 1870 and 1914 – Results of the War – Paris Peace Conference - League of Nations.
Unit – V	World War II: Causes, Fascism & Nazism – Results; The United Nations Organization: Structure, Functions and Challenges.

References:

1	J.A.Hobson, Imperialism: A Study
2	C.D. Hazen, Modern Europe up to 1945
3	H.A.L.Fisher, History of Europe

HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
 Semester – VI
Paper – VIII-A-1 (Cluster Elective Paper –1)
CULTURAL TOURISM IN ANDHRA PRADESH

Unit – I	Concepts of Tourism: Nature – Scope – Definition – Tourists & Excursionists – Domestic & International Tourists.
Unit – II	Types of Tourism: Heritage Tourism – Pilgrimage Tourism - Recreation Tourism – Sports & 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 - Archaeological Survey of India – Stage Museums.
Unit - IV	Planning and Development of A.P. Tourism: APTDC – Aims & Objectives – Fairs & Festivals – Andhra Cuisine –Restaurants - Eco Tourism – Beaches & Hill Resorts – Mountaineering – Tourist Places in A.P.
Unit – V	Modalities of Conducting Tourism: Field Work - Visit to a Site – Conduct of

10

Research – Preparation of Project Report
--

References:

1	APTDC Publications
2	Ashorth G.J, Marketing in Tourism Industry
3	Bhatia A.K., Tourism Development

B. A. HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
 Semester – VI
Paper – VIII-A-2 (Cluster Elective Paper 2) POPULAR
MOVEMENTS IN ANDHRA DESA (1848 TO 1956 A.D.)
(History and Culture of Andhra from 1857 to 2014)

Unit – 1	Social & Self Respect Movements: Social Conditions –KandukuriVeerasingam, Raghupathi Venkata Rathnam Naidu, GuruzadaApparao, Komarraju Venkata Laxmana Rao; New Literary Movements: Causes – RayaproluSubbarao, ViswanathaSathyanarayana, GurrarnJashua, BoyiBheemanna, SriSri – Impact.
Unit – II	Freedom Movement in Andhra (1885-1920): Contributory Factors – Vandemataram Movement – Swadeshi & Boycott programs – Glorious Events at Rajahmundry, Kakinada, Kotappakonda& Tenali – Home Rule Movement in Andhra.
Unit - III	Freedom Movement in Andhra (1920-1947): Non-Cooperation Movement –

11

	ChiralaPerala, Palanadu&Pedanandipadu Activities – Alluri Seetarama Raju &Rampa 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 &Rayalaseema – Sri Bagh Pact – Constitution of Committees & their Contribution – Martyrdom of PottiSriramulu – Formation of separate Andhra State.
Unit – V	Movement for formation of Andhra Pradesh (1956): VisalandhraMahasabha – Role of Communists – States Reorganization Committee – Gentlemen’s Agreement – Formation of Andhra Pradesh.

References:

1	B. Kesava Narayana, Political and Social Factors in Modern Andhra
2	K.V.Narayana Rao, The Emergence of Andhra Pradesh
3	M. Venkata Rangaiah, The Freedom Struggle in Andhra Pradesh
4	P.R.Rao, History of Modern Andhra
5	SarojiniRegani, Highlights of Freedom Movement
6	SarojiniRegani, □□□□ □□□□□□□□□□ □□□□
7	V. Ramakrishna, Social Reform Movement in Andhra

B. A. HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
 Semester – VI
Paper – VIII-A-3 (Cluster Elective Paper – 3) COMTEMPORARY
HISTORY OF ANDHRA PRADESH (1956-2014)

Unit – I	Socio-Economic Changes in Andhra Pradesh – River Projects & Infrastructural Development – Education & Scientific Progress – Regional Politics – Emergence of Telugu Desam Party.
Unit – II	Growth of Leftist Ideology – Marxist & Radical Literature – Naxalbarry 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 trends towards Bifurcation: Jai Telengana Movement (1969) – Mulki Rules – Legal Battle - Jai Andhra Movement (1972) – Six Point Formula (1973).

12

Unit – V	Bifurcation of Andhra Pradesh: Power Politics – Economic Discontentment – Riparian Disputes - Unemployment – Foundation of Telangana RastraSamiti – Movements for separate Telangana & unified Andhra Pradesh – Formation of Telangana State (2014)
----------	---

References:

1	Barry Pavier, The Telangana Movement - 1944-51
2	Chinnayya Suri, Agrarian Movement in Andhra, 1921-71
3	K. Ramachandra Murthy, Unveiling Telangana State
4	P.R.Rao, History of Modern Andhra
5	S. Ratnakar, A Brief History of Telangana & Andhra Pradesh
6	Sri Krishna Committee Report
7	TarimelaNagireddy, India Mortgaged
8	Y.V.Krishna Rao, Growth of Capitalism in Indian Agriculture: A Case Study of A.P.
9	KattiPadmarao, □□□□□ □
10	Y. Chinnarao, □□□□□□ □□□□
11	News Paper Clippings (2001-2014)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF ECONOMICS

SYLLABUS 2019-2020

BA Economics Syllabus under CBCS
I Year B. A. Programme (UG) Courses – Under CBCS
Semester – I
Paper – I (Core Paper)
Micro Economics – Consumer Behavior

Module -1

Nature, definition and scope of Economics - Wealth, Welfare, Scarcity and modern definitions.

Module -2

Methodology in Economics - Micro & Macro; Static and Dynamic analysis; Normative and positive science, Inductive & Deductive methods; Partial and general Equilibrium.

Module - 3

Utility analysis: - cardinal approach-The Law of diminishing Marginal utility- The Law of Equi-Marginal Utility- concept of consumer's surplus

Module - 4

Demand analysis - Law of Demand - Elasticity of Demand - Measurement of Elasticity of Demand - Price, Income & Cross Elasticities of Demand.

Module - 5

Ordinal Approach: Indifference Curve analysis - Properties of Indifference curves - Price or budget line - Equilibrium of the Consumer with the help of Indifference curves – Samuelson's Revealed preference theory.

REFERENCES:

1. R.G. Lipsey and K.A. Chrystal - "Economics", Oxford University Press, 10/e, 2004.
2. P.A. Samuelson & W.D. Nordhaus-"Economics", Tata Mc Graw Hill, 18/e, 2005.
3. N.Gregory Mankiw-"Principles of Economics", Thompson 2015 .
4. H.L. Ahuja-"Advanced Economic Theory" S.Chand
5. M.L. Seth-"Micro Economics", Laxmi Narayana Agarwal, 2015.
6. Bilas, A.-"Micro Economic Theory", International Student Edition, Mc Graw Hill, 1971.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ECONOMICS

SYLLABUS 2019-2020

B. A. ECONOMICS

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – II

Paper – II (Core Paper)

Micro Economics - Production and Price Theory

Module - 1

Production function-Concept of homogeneous production function-Cobb- Douglas Production function- Law of variable proportions-Law of Returns to Scale - Different Concepts of Costs – Explicit & Implicit, Opportunity, Total – fixed and Variable Costs, Marginal & Average Costs & its Relationship. Concept of Revenue – Total, Marginal & Average Revenue and Break – Even Point

Module - 2

Analyse different types of Market structures - Perfect Competition - Price determination and equilibrium of firm and industry under perfect competition - Monopoly - Price determination - Price discrimination.

Module - 3

Monopolistic competition - price determination - Oligopoly - Kinked demand curve approach.

Module - 4

Marginal Productivity theory of distribution - Theories of wage determination Subsistence theory of wages, Standard of living theory of wages, Modern theory of wages Wages and collective bargaining - concept of minimum wage.

Module - 5

Theory of Rent: Ricardian theory of rent - Quasi rent concept of Alfred Marshall. Theories of Interest - Classical, Neo-classical and Keynes Liquidity Preference theory - Profit - dynamic, innovations, Risk and Uncertainty theories.

REFERENCES



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ECONOMICS

SYLLABUS 2019-2020

B. A. ECONOMICS

**II Year B. A. Programme (UG) Courses – Under
CBCS Semester – III**

Paper – III (Core Paper)

Macro Economics - National Income, Employment and Money

Module - 1

**Meaning, definition of Macro Economics - Importance of Macro Economics-
Difference between Micro and Macro Economics - Paradox of Macro
Economics -Limitations**

Module - 2

**National Income - Definitions, Concepts of National Income -
Measurement of National Income- Circular flow of Income in Two,
Three and Four Sector Economy.**

Module - 3

Classical theory of Employment - Say's Law of Markets.

Module - 4

**Keynesian Theory of Employment - Consumption function – Investment
Function - Marginal Efficiency of Capital (MEC)- Concepts of multiplier
and accelerator**

Module - 5

**Meaning and Functions of Money - Classification of money - Gresham's Law
- RBI classification of Money. Theories of Money- Fisher's Quantity theory of Money
Camb
ridge approach (Marshall, Pigou, Robertson & Keynes).**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ECONOMICS

SYLLABUS 2019-2020

B. A. ECONOMICS

II Year B. A. Programme (UG) Courses – Under CBCS

Semester – IV

Paper – IV (Core Paper)

Banking and International Trade

Module - 1

Trade Cycles - meaning and definition - Phases of a Trade Cycle -Inflation - definition - types of inflation - causes and effects of inflation measures to control inflation.

Module - 2

Banking: Meaning and definition -Functions of Commercial Banks - Concept of Credit creation-Functions of RBI - Recent developments in banking sectors.

Module – 3

Non-Bank Financial Institutions – Types of NBFIs - Factors contributing to the Growth of NBFIs –Money market – Defects of Indian money market

Module – 4

Concepts of Shares-Debentures - Stock Market - Functions - Primary and Secondary Markets - SEBI - - Insurance - Life Insurance and General Insurance.]

Module - 5

Macro Economic Policy - Fiscal, Monetary and Exchange rate policies
Objectives and Significance - Importance of International Trade - Regional and International Trade – Defining Balance of Trade and Balance of Payment.

B. A. ECONOMICS
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – V
Paper – V (Core Paper)
Paper V: CONTEMPORARY INDIAN ECONOMY

Module-I :

Characteristics of India as a developing Economy- Demographic Features of India- Population Dividend- Occupational Structure in India- Trends in the growth of India's National Income.

Module-II :

Tax Reforms and GST- tax Revenue and its devolution to states – Public Debt Redemption Methods- Brief outline of Globalization and its impact on Indian Economy.

Module-III :

Magnitude of poverty in India- Unemployment and its dimensions- Major schemes of rural and urban development- Objectives and achievements of Planning in India- Balanced Regional Development- NITI Avog.

Module- IV:

Indian Agriculture- Importance of agriculture in India –Factors determining agriculture productivity- Land use and Cropping Pattern in India- Agriculture Infrastructure- Rural Credit- Micro Finance- Self Help Groups- Agriculture price policy- Agriculture Insurance- Food Security.

Module-V:

Industrial polices, 1956, 1991 – Growth and problems of small scale industries in India -Make In India -Foreign direct Investment. Foreign Exchange Management Act (FEMA)- SEZs- Disinvestment Policy in India- Growing importance of Service Sector in India – Banking, Insurance, IT, Education and health.

References:

1. Dhingra I.C., Indian Economy, Sultan Chand, 2014
2. Ruddar Dutt and K.P.M. Sundaram- Indian Economy, Sultan Chand,2015
3. S.K. Misra & V.K. Puri-Indian Economy, Himalaya Publishing House, 2015
4. G.Omkarnath-Economics- A Premier of India, Orient Blacksmn, 2012
5. Telugu Academy Publications
6. Dr. S.G.K. Murthy, Indian Economy – Gitam University

B. A. ECONOMICS
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – V
Paper – VI (Core Paper)
PAPER VI: QUANTITATIVE TECHNIQUES

(Mathematical derivations and proofs are not required. Only applications)

Quantitative Methods

Unit-I: Introduction: Meaning- Definition- Function- Importance and Limitations of Statistics. Collection of Data- Primary and Secondary Data- Schedule and Questionnaire- Diagram and Graphic Presentation of Data (One dimensional and frequency curves).

Unit-II: Measures of Central Tendency: Definition, Objectives and Characteristics of Measures of Central Tendency- Types of Averages- Arithmetic Mean, Geometric Mean, Harmonic Mean- Mean- Mode- Properties of Averages.

Unit-III: Measures of Dispersion: Definition, Objectives of Dispersion- Range- Quartile Deviation- Mean Deviation- Standard Deviation- Coefficient of variation.

Unit-IV: Measures of correlation and Regression : Meaning, Definition and Uses of correlation- Types of Correlation- Karl Pearson's Correlation Coefficient- Spearman's Rank Correlation- Probable Error- Meaning. Utility of Regression Analysis- comparison between Correlation and Regression.

Unit V: Matrix: Definition- Examples- types of Matrices- matrix Addition- Multiplication- Determinant of Matrices- Minors- Co-Factors- Inverse of a Matrix.

REFERENCES:

1. Sivayya K.V. and Satya rao, Business Mathematics, Sarathi Publication, Guntur.
2. Sancheti and Kapoor V.K., Business Mathematics, Sulthan Chand & Sons, New Delhi.
3. D N Elhance, Fundamentals of Statistics, Kithab Mahal, Allahabad.
4. Gupta SC, Fundamentals of Business Statistics, Sulthan Chand & Sons, New Delhi.
5. Aggarwal, Business Statistics, Kalyani Publishers Hyderabad.
6. Reddy CR, Business Statistics, Deep & Deep Publications.
7. S.P. Gupta & V.K. Kapoor, Fundamentals of mathematical Statistics, S. Chand and Co, 2014

B. A. ECONOMICS
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – VI
Paper VII -- AGRICULTURAL ECONOMICS

Module-1

Nature and Scope of Agricultural Economics. Factors affecting agricultural development: technological, institutional and general. Interdependence between agriculture and industry.

Module-2

Concept of production function : input-output and product relationship in farm production.

Module-3

Growth and productivity trends in Indian agriculture with special reference to Andhra Pradesh. Agrarian reforms and their role in economic development.

Module-4

Systems of farming, farm size and productivity relationship in Indian agriculture with special reference to Andhra Pradesh- New agriculture strategy and Green revolution : and its Impact

Module-5

Emerging trends in production, processing, marketing and exports; policy controls and regulations relating to industrial sector with specific reference to agro-industries in agri-business enterprises.

RECOMMENDED / REFERENCE BOOKS

1. Sadhu An, Singh Amarjit and Singh Jasbir (2014), Fundamentals of Agricultural Economics, Himalaya Publishing House, Delhi
2. Lekhi RK and Singh Joginder, Agricultural Economics, Kalyani Publishers
3. Bhaduri, A. (1984), The Economic Structure of Backward Agriculture, Macmillan, Delhi.
4. Bilgrami, S.A.R. (1996), Agricultural Economics, Himalayas publishing house, Delhi.
5. Dantwala, M.L. et.al (1991), Indian Agricultural Development Since Independence, Oxford & IBH, New Delhi.

B. A. ECONOMICS
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – VI
Paper – VIII-A1 - Agribusiness Environment in Andhra Pradesh

Module-1

Role of agriculture in development process in Andhra Pradesh vis-à-vis other developed states. Economy wide effects of agriculture in Andhra Pradesh through trickle down effects. Backward and forward linkages of agriculture with rest of economy.

Module-2

Agricultural finance-importance in modern agriculture- performance of agricultural finance in Andhra Pradesh -problems of agricultural finance - Inter linkages of agricultural credit and other input markets and product markets.

Module-3

Dynamics of agriculture-crop (horticulture, field crops), sector-livestock (poultry dairy and fisheries) sector and inter linkages among the sectors. Agribusiness sector in Andhra Pradesh-salient features, constraints, sub sectors of agribusiness-input sector, production sector, processing sector.

Module-4

Growth performance of major agricultural commodities in Andhra Pradesh-production and processing trends in exports and imports of major agricultural commodities.

Module-5

Marketing policy- structure of agri markets - regulated markets - need - activities - structure - APMC act - market legislations - Role of Farmer Groups in the marketing of Agricultural Produce.

References:

1. Adhikary M. 1986. Economic Environment of Business. S. Chand & Sons.
2. Aswathappa K. 1997. Essentials of Business Environment. Himalaya Publ.
3. Francis Cherunilam 2003. Business Environment. Himalaya Publ.

B. A. ECONOMICS
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – VI
Paper – VIII-A2 - Agricultural output Marketing

Module-1

Structure and Model of Agri-Marketing Organizations with functions: Functions of intermediaries, Marketing Practices in Primary and secondary and terminal market, Regulated markets, co-operative marketing.

Module-2

Marketing costs and margins, Marketing Finance. Marketing Structure of Major agricultural commodities, food grains: Rice, and Maize. Cash Crops; Cotton, Oil Seeds, Vegetables and Fruits, Milk, Meat and Poultry products.

Module-3:

Problems and Challenges in Agriculture Marketing - Market Yards - Support prices - Rural Warehousing.

Module-4:

State Intervention in Agricultural Marketing, Role of Various agencies (Andhra Pradesh Agro, MARKEED, State Department, and FCI, Tobacco Board, Cotton Corporation) and its impact on market efficiency. Agriculture Price Commission.

Module-5:

Inter-regional and international trade in agriculture; emerging scenario of international trade in agricultural commodities; concept of terms of trade and balance of payments. WTO and Indian agriculture with special reference to Andhra Pradesh.

References:

1. C.S.G.Krishnamacharyulu & Lalitha Ramakrishnan, "Rural Marketing: Text and Cases", Pearson Education, New Delhi.
2. Awadhesh Kumar Singh & Satyaprakash Pandey, Rural Marketing: Indian Perspective, New Age International Publishers, New Delhi.
3. Mamoria C.B. & Badri Vishal: Agriculture Problems in India

B. A. ECONOMICS
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – VI
Paper – VIII-A3 - Agricultural Input Marketing

Module-1

Agri input marketing – Meaning and importance – distinctive features of Agri. Input marketing – Distribution channels of agri. Inputs – Private, Government, Co-operative and Joint sector. Agri inputs promotional programme – concepts and techniques.

Module-2

Issues in seed marketing – determinants of seed demand – private sector contribution – public sector support to private sector - Distinctive features of Seed Marketing vis a vis other Input Marketing – strengths and weaknesses on Indian seed industry.

Module-3

Fertilizer industry scenario – public, private, co-operative and joint sector role – fertilizer production consumption, and imports – fertilizer marketing characteristics. Biofertilizers – its role and scope – major constraints involved – production level – market level – field level. Marketing network/ channels.

Module-4

Pesticide industry – an overview – nature of industry growth – consumption crop wise, area wise – demand and supply – market segmentation.-IPM concept development – biopesticides – its role and scope.

Module-5

Agricultural mechanization – benefits and importance and future priorities – scenario of farm implements and machinery sector – economic advantage of mechanization – contribution of agricultural mechanization – Need for the development of agricultural machinery and implements to suit the local resource endowments.

References:

1. Acharya SS & Agarwal NL 2004, Agricultural Marketing in India – Oxford & IBH.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2019-2020

FIRST YEAR; SEMESTER – I
B.A. POLITICAL SCIENCE

PAPER-I: BASIC CONCEPTS OF POLITICAL SCIENCE

Unit-1: 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

Unit-2: 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-3: Nations and Nationalism

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

Unit-4: Rights and Citizenship

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

Unit-5: Freedom, Equality and Justice

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

Reference books:

1. Bhargava Rajeev and Acharya Ashok (eds) (2008) Political Theory: An Introduction, Pearson, New Delhi.
2. Andrew Heywood (2007) Politics 3rd edition, Palgrave Macmillan, New York.
3. Bellamy R (1993) (Ed) Theories and Concepts of Politics, Manchester university press, New York.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2019-2020

FIRST YEAR; SEMESTER – II
B.A. POLITICAL SCIENCE
PAPER-II: POLITICAL INSTITUTIONS
(CONCEPTS, THEORIES AND INSTITUTIONS)

Unit-1: 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-2: 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-3: 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-4: 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

Reference books:

1. Andrew Heywood (2007) Politics 3rd edition, Palgrave Macmillan, New York
2. Held, David (2006) Models of Democracy 3rd edition Oxford Polity Press
3. Birch A.H (2000) The Concepts and Theories of Democracy, London Routledge
4. Bogdanor, V (Ed) (1988) Constitutions in Democratic Politics Gower, Aldershot



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2019-2020

SECOND YEAR; SEMESTER – III
B.A. POLITICAL SCIENCE
PAPER-III: INDIAN CONSTITUTION

Unit-1: 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-2: Philosophical Premises of the Indian Constitution

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

Unit-3: 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-4: 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-5: Working of the Indian Constitution

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



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2019-2020

SECOND YEAR; SEMESTER – IV
B.A. POLITICAL SCIENCE
PAPER-IV : INDIAN POLITICAL PROCESS

Unit-1: 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-2: Social Structure and Democratic Process

1. Transition of Caste System: From Hierarchy to Identity: Role of Agency
2. Politicisation of Intermediate and Dalit Caste Communities
3. Evolution of Modernity in India

Unit-3: Religion and Politics

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

Unit-4: 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 Political Parties: INC,BJP, CPM, DMK, BSP, TDP

THIRD YEAR; SEMESTER – V
B.A. POLITICAL SCIENCE
PAPER-V; INDIAN POLITICAL THOUGHT

Unit-1: Traditions of Ancient Indian Political Thought

1. Sources and features of Ancient Indian Political Thought
2. Manu: Social laws
3. Kautilya: Theory of the State

Unit-2: Renaissance Thought

1. Rammohun Roy: Religious and Social Reform
2. Pandita Ramabai: Gender

Unit-3: Early Nationalism

1. Dadabai Naoroji: Drain Theory and Poverty
2. Ranade M G: The Role of the State and Religious Reform

Unit-4: Religious Nationalism

1. Savarkar V D: Hindutva or Hindu Cultural Nationalism
2. Mohammed Iqbal: Islamic Communitarian Nationalism

Unit-5: Democratic Egalitarianism

1. Gandhi-Swaraj and Satyagraha
2. Jawaharlal Nehru- Democratic Socialism
3. Dr Ambedkar B R – Annihilation of Caste System
4. M N Roy: Radical Humanism

Reference books:

1. Pantham Thomas and Kenneth Deutsch(Ed)(1986)
Political thought in modern India, Sage, New Delhi
2. Bidyut Chakrabarty and Rajendra Kumar Pandey (2009) modern Indian political thought, Sage, New Delhi

THIRD YEAR; SEMESTER – V
B.A. POLITICAL SCIENCE
PAPER-VI: WESTERN POLITICAL THOUGHT

Unit-1: Classical Western Political Thought

1. Plato: Theory of Forms, Critique of Democracy, Justice
2. Aristotle: Citizenship, State, Justice, Virtue

Unit-2: Early Medieval to the Beginning of Modern Thought

1. St. Augustine: Earthly City and Heavenly City, Evil, Freewill, Moral Action
2. Machiavelli, Statecraft, Virtue, Fortuna

Unit-3: Liberal Thought

1. Thomas Hobbes: Human nature, Social Contract, liberty, State
2. John Locke: Natural Rights, Consent, Social Contract, State
3. Rousseau: Social institutions and Moral Man, Equality, liberty and General Will

Unit-4: Liberal Democratic Thought

1. Jeremy Bentham: Utilitarianism
2. John Stuart Mill: Individual liberty, Representative Government

Unit-5: Philosophical Idealism and its critique

1. Hegel: Individual Freedom, Civil Society, State
2. Karl Marx: Alienation, Surplus Value, Materialist Conception of History, State

Reference books

1. Shefali Jha (2010) Western Political Thought from Plato to Karl Marx, Pearson, New Delhi
2. Boucher D and Kelly P (Eds) (2009) Political Thinkers from Socrates to the Present, Oxford University press, oxford
3. Coleman J (2000) A History of Modern Political Thought: From Ancient Greece to early Christianity, Blackwell publishers, oxford
4. Macpherson C B (1962) The Political Theory of Possessiveness Individualism, Oxford University press, oxford

THIRD YEAR; SEMESTER –VI
B.A. POLITICAL SCIENCE
PAPER-VII: PRINCIPLES OF PUBLIC ADMINISTRATION

Unit-1: Nature of Public Administration

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

Unit-2: Administrative Theories

1. Classical Theory-Henry Fayol
2. Human Relations theory-Elton Mayo
3. Rational Decision making theory-Herbert Simon

Unit-3: Principles of Organization

1. Hierarchy- Span of control-Unity of command
2. Decision Making-Communication
3. Co-ordination-leadership

Unit-4: Structure of organization

1. Chief Executive-Types and Functions
2. Department-Bases of Departmentalization
3. Line and Staff Agencies

Unit-5: 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

Reference books:

1. Pardhasaradhi (Eds) (2011) Public Administration; Concepts, Theories and Principles, Telugu Academy, Hyderabad
2. R kSapru (2014) 3rd Edition, Administrative Theories and Management Thought, PHI learning Pvt Ltd, New Delhi.
3. Prasad D R, Prasad V S,(Eds) (2010),Administrative Thinkers, Sterling

**THIRD YEAR; SEMESTER – VI
B.A. POLITICAL SCIENCE**

(Cluster Elective)

PAPER: VIII-A1: INTERNATIONAL RELATIONS

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 Order

Reference Books:

1. Jackson, R and Sorensan Y, Introduction to International Relations; Theories and approaches, New York, OUP, 2008.
2. Baylis, J and Smith, S (Eds), The Globalization of World Politics; An Introduction to International Relations, Oxford, OUP, 2011
3. Aneek Chatterjee, International Relations Today; Concepts and Applications, New Delhi, Pearson Education, 2008.
4. E.H. Carr. International relations between the two world Wars, Lodon. Palgrave Macmillan, 2004.

THIRD YEAR; SEMESTER –VI
B.A. POLITICAL SCIENCE
PAPER: VIII-A2: INDIAN FOREIGN POLICY

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)

Reference Books:

1. David Scott (Ed), Handbook of India's International Relations, London, Routledge,2011
2. Ganguly, S (Ed), India as an Emerging Power,Portland, Franck class, 2003
3. Pant, H, Contemporary Debates in Indian Foreign and Security Policy, London, Palgrave Macmillian,2008
4. Tellis, A and Mirski, S (Eds), Crux of Asia; China, India, and the Emerging global Order, Washington, Carnegie endowment for international peace,2013
5. Muni, S.D, India's Foreign Policy Delhi CUP, 2009
6. Alyssa Ayres and Raja Mohan, C (Eds), Power Realignment in Asia: China, India and the United States, New Delhi, Sage, 2002.
7. Appadorai, A, Domestic roots of Indian Foreign Policy, New Delhi, OUP,1971 Dutt, V.P, India's Foreign Policy in a Changing World, New Delhi,NBT,2011

THIRD YEAR; SEMESTER – VI
B.A. POLITICAL SCIENCE
PAPER: VIII-A3 : CONTEMPORARY GLOBAL ISSUES

Unit- I: 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. World 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

Reference Books:

1. Ritzer, G., Globalization: A Basic Text, Sussex: Wiley- Black well,2009
2. Streger, M., Globalization: A Very Short Introduction, Oxford, OUP,2013
3. Heywood, A., Global Politics, New York, Palgrave Macmillian,2011
4. Held, D et.al, Global Transformations; Politics, Economics and culture California, Stanford University Press,1999
5. J. Volger. 'Environmental Issues'in J. Baylis, S. Smith an owens. P(Eds) Globalization of world politics, New York, Palgrave,2011



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



B.A TTM

SYLLABUS 2019-2020

DEPARTMENT OF TOURISM AND TRAVEL MANAGEMENT

PAPER: -1 - BASICS OF TOURISM

SEMESTER - I

Unit:-1:- Tourism Definition - Nature and Scope - History of Tourism and its developments - Types of Tourism, domestic and International tourism- Causes of rapid growth of tourism.

Unit:-II: - Travel and travellers in Ancient India - growth and development of tourism in India- travel during medieval age- European trade links - tourism in independent India - Constitutional provision of Indian Tourism.

Unit:-III: Socio- Economic Significance of tourism, Tourism as an Industry ancillary industries in tourism- Tourism organizations, National and International- role of State and Central Governments in promotion and development of tourism.

Unit:-IV: Demand and supply in tourism - need for measuring tourism - general problems of measurement importance of tourist statistics - types of tourist-statistic-methods of measurement tourism demand.

Unit:-V: Structure of State and Central tourism department and tourism development corporation tourism promotion councils and etc., - district tourism promotion councils.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)
Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



B.A TTM
SYLLABUS 2019-2020
DEPARTMENT OF TOURISM AND TRAVEL MANEGMENT
Paper-II: PRINCIPLES AND PRACTICES OF TOURISM
SEMESTER – II

Module 1

Tourism development and state intervention National economic goals-political legislation, equity and social needs, social investment, regulation and government controls, regional development in Tourism-

Module 2

Tourist motivation Factors types Push and Pull factors - Determinants of tourism- Theories of Motivation - psychological, cultural, economic, personal and social barriers to travel

Module 3

Impact of tourism Meaning, positive and negative Social, cultural, economic and environmental impacts of tourism - Employment and Revenue generation Tourist impact analysis

Module 4

Components of Tourism - Types of transportation Railways, airways, waterways and roadways Role of railways in promoting tourism in India Accommodation and food

Module 5

Tourism finance Introduction, meaning, nature, scope and functions of finance Application of financial management in tourism industry Tourism Finance Corporation of India and other Organizations Aims, objectives and functions

References:

- 1. Pran Nath Seth (2006): Successful tourism Management, Sterling, New Delhi (Vol. 1 & 2)**
- 2. Mill and Morrison, (1992). The Tourism System: An Introductory Text, Prentice Hall. London**
- 3. Cooper. Fletcher et al. (1993). Tourism Principles and Practices. Pitman.**
- 4. Bhatia, A.K. (2010): International Tourism Management, Sterling, New Delhi**
- 5. Burkart and Medlik. (1981). Tourism: Past, Present and Future. Heinemann,**

ELBS.

6. Christopher.J. Hollway: Longman (2012): The Business of Tourism. Pearson.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



B.A TTM

SYLLABUS 2019-2020

DEPARTMENT OF TOURISM AND TRAVEL MANEGMENT

Semester III Syllabus

Paper - III TOURISM PRODUCT

Module - 1

Definations – concept, types and charecteristics of tourism products, elements of tourism
tourism products – geographical elements and other tourist attractions –different levels of
models and layers – product life cycle.

Module - 2

Geography of tourism – definition . scope and content of geography of tourism – major
landforms – mountains , plains ,plateaus;natural regions of the world – Impact of weather
and climate on tourism ,seasonal rhythm – geographical components and tourism
development linkages .

Module - 3

Natural tourist resources – important national parks and wild life sanctuaries – examples
from south INDIA. Beaches and islands ,water falls :deserttourism desert safaris and
festivals recreation and adventure tourism (land,water,and air, based)

Module - 4

Concept of tourism pilgrimage in India – select Hindu, Buddhist ,Jain ,Sikh,Islam and
Christian pilgrim centers and related circuits

Module - 5

Performing arts and hany crafts of India –music and dance (tribal, folk, & classical) tourism
festivals –introduction to medical , health and wellness tourism – world heritage sites in
India.

References:-

1. **Ranga mukesh ,tourism potential in India.**
2. **Sarkar H, museums and protections of monuments and antiquities in India.**
3. **Vijaya lakshmi k.s history tourism.**
4. **Williams S (1998)Tourism geography ,routledge , london. WWW. Unwto.org.**
5. **<http://www.buzzle.com>**
6. **www.international.icomos.org**
7. **www.unesco.org**
8. **[www.pondiuni .edu.in](http://www.pondiuni.edu.in)**
9. **[www.globalproperty guide .com](http://www.globalpropertyguide.com)**
10. **[www.amazon . in](http://www.amazon.in)**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



**B.A TTM
SYLLABUS 2019-2020
DEPARTMENT OF TOURISM & TRAVEL MANAGEMENT
Semester IV – Syllabus**

Paper IV: - CULTURAL TOURISM IN ANDHRA PRADESH

Module - 1

Definition to History and culture (Tangible and Intangible) – Brief History of – Salient Features of A.P Culture

Module - 2

Pre and Proto History – Art and Architecture of A.P as Tourism Products – Major Museums and Art Galleries – Major pilgrim Centres (Temple, Church and Mosque) in A.P

Module - 3

Performing Arts and Handicrafts – Andhra Paintings and Stone Crafts – Music and Dance (Tribal, Folk and Classical)

Module - 4

Language and Literature – Dress and Ornaments – Food (cuisine) and Health (Medical Systems)

Module - 5

Tribal Culture of A.P – Tribes of A.P – Geographical spread – Identity – Society – Economy – Religion and Culture – Need for Conservation of Cultural heritage – UNESCO Initiatives – Field Visits.

References:

APTDC Publications

Sivanagi Reddy, E, - Andhra Pradesh Tourism Vanarulu – Avakasalu (Telugu), Hyderabad, 2003

www.aptdc.gov.in

www.aptourism.gov.in

www.tavell.in/Andhra



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)
Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



B.A TTM
SYLLABUS 2019-2020
DEPARTMENT OF TOURIM AND TRAVEL MANEGMENT
Paper-V: GUIDING AND INTERPRETATION SKILLS FOR TOURISM
SEMESTER – V

Module 1

Introduction to Guiding and escorting- Meaning; concept and types of tour guide, duties and responsibilities of Guides and Escorts, various role of tour guide, the business of guiding, organizing a guiding business

Module 2

The guiding techniques- leadership and social skills, presentation and communication skills - The guide's personality - working with different age groups, working under difficult circumstances

Module 3

Guest Relationship Management- Handling emergency situations- medical, personal, official, VISA/passport, Death, handling guest with special needs/different abilities; Skills required for adventure tours; Knowledge of local security, route chart; Personal hygiene and grooming, tour responsibilities, checklist, leading a group, code of conduct

Module 4

Conducting tours: Pre tour planning, modes of transportation, conducting various types of tours, understanding client needs, security measures, relationship with fellow guides, Coordination with hospitality institutions; points to remember while guiding and escorting

Module 5

Professional development; Interpretative planning; training staff for interpretation; evaluation techniques; negotiation skills-types of negotiating techniques; negotiating a business deal in tourism.

References:

1. Jagmohan Negi (2006); Travel Agency and Tour Operations, Kanishka Publishers, New Delhi
2. Mohinder Chand (2009); Travel Agency and Tour Operations: An Introductory Text ,Anmol Publications Pvt. Limited, New Delhi
3. Dennis L Foster - Introduction to Travel Agency Management 4. Pat Yale(1995); Business of Tour Operations, Longman Scientific & Technical, New Delhi
- 5.Pond K-L(1993); The professional guide: Dynamics of tour guiding

6. www.tourism.gov.in

7. www.qtic.com

8. www.cedeop.europa.eu

Semester-V

DEPARTMENT OF TOURISM & TRAVEL MANAGEMENT

Semester V Syllabus

Paper - 6- TRAVEL AGENCY AND TOUR OPERATION BUSSINESS

Module - 1

Introduction to travel trade –origin and history of travel agencies–responsibilities and functions of travel agents–soirces of income of a travel agent– setting up of travel agency.

Module - 2

Travel agency and tour operations –difference between travel agents and tour operator– linkages and arguments with hotel travel agencies and air lines– tour escorts and guides.

Module - 3

Organisation structure of a travel agency – information counseling ,ticketing document, laisoning.Staffing,directing ,organising and controlling.

Module - 4

Oraganisation of tour operation– concept and nature of tour operation –functions –types of tour operations and of tour operators

Module - 5

Tourism practical(few examples are given above the faculty can include many more items

Travel agency management

- 1.Filling up of pass port applications from**
- 2.Filling up of sample Visa forms**
- 3.knowledge of visas various countries**
- 4.Ticket booking using online travel seats**

Tour operations

- 1.preparation of tour Itinerary – In bound and out bound**
- 2.model costing of tour packages**
- 3.preparation of special interest tours in your region**
- 4.sample tour grocery steady and preparations**
- 5.vochers preparation and filling**
- 6.visit to travel / tour company.**

References

- 1.Jag Negimohan (2006).,Travel agency and tour operations ,kanishka publishers ,New Delhi.**
- 2.Mohandar chand (2009).,Travel agency and tour operations :and introduction text ,amol publication pvt .limited ,New Delhi.**
- 3.Jane archer ,(2006).,Manule of travel agency practice – Butterworth Heinemann,pub,London**
- 4.<https://www.tichk.org>**
- 5.[www.growourregion.](http://www.growourregion.com)**
- 6.www.usaidg.gov.com**

DEPARTMENT OF TOURISM & TRAVEL MANAGEMENT

Semester VI – Syllabus

PAPER –VII: TOURISM MARKETING & HOSPITALITY MANAGEMENT

Module - 1

Definition of Tourism marketing characteristics –philosophies of marketing management customer relationship management –relationship between hospitality and tourism industry –service culture

Module - 2

Micro environment –company, suppliers, marketing intermediaries, customers, public–environmental forces and trends–Marketing information system & research process – promotion

Module - 3

Introduction to hospitality industry –Nature, scope and components –Accommodation types and forms –Important departments of hotel –front office Housekeeping ,Food and Beverage ,maintenance and engineering –function and co-ordination with other departments –classification ,categorization ,registration and approval –handling emergencies

Module - 4

Guest cycle – Guest stay process in a hotel major processes and stages associated with it – Reservation, Registration, Guest complaints etc–study of the working of selected hotels/motels/restaurants–Different types of catering establishments –Managerial issues

MODULE - 5

Tourism practical (few examples are given below – the faculty can include many more items)

Transportation management

- 1. Ticket booking for Indian railways using IRCTC and bus services like Red bus**
- 2. Study and simple costing of vehicle rates for package tours –cars, medium, size vehicles and buses**

Hospitability Management

- 1. Case study of important hotel properties**
- 2. Practical accepts of bed making**
- 3. Service etiquette**
- 4. Venue card preparation**
- 5. visit to hotels/resorts**

References:

- 1. Ravi Shankar (2002).,service marketing, excel books India.New Delhi**
- 2. Phillips kolter, Bowensand James makes (2010), marketing for tourism and hospitality ,Pearson, New Delhi.**
- 3. Naresh malhotra (2000); Marketing research ,person prentice Hall, New Delhi**
- 4. Janet Macdonald (2000), Travel writing. Rober Hale , London**
- 5. www.ilo.org**
- 6. [https://ringinstitute .com](https://ringinstitute.com)**
- 7. [.https://alison.com](https://alison.com)**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

Semester - I

DSC 1A 1.1- Fundamentals of Accounting-I

Unit-I – Introduction to Accounting

Need for Accounting – Definition – Objectives, Advantages – Book keeping and Accounting– Accounting concepts and conventions - Accounting Cycle - Classification of Accounts and its rules - Double Entry Book-keeping - Journalization - Posting to Ledgers, Balancing of ledger Accounts (problems).

Unit –II: Subsidiary Books:

Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty cash Book (Problems).

Unit-III: Trail Balance and Rectification of Errors:

Preparation of Trail balance - Errors – Meaning – Types of Errors – Rectification of Errors (Problems)

Unit-IV- Bank Reconciliation Statement:

Need for bank reconciliation - Reasons for difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement- Problems on both favorable and unfavourable balances.

Unit -V: Final Accounts:

Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with adjustments (Problems).

Reference Books

1. T.S.Reddy & A. Murthy, Financial Accounting , Margham Publications
2. R L Gupta & V. K Gupta, Principles and Practice of Accounting, Sultan Chand & Sons
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers
4. Tulasian, Accountancy -I, Tata McGraw Hill Co.
5. V.K.Goyal, Financial Accounting, Excel Books
6. K. Arunjothi, Fundamentals of Accounting; Maruthi Publications



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

DSC 2 A 1.2- Business Organization

Unit-I – Introduction

Concepts of Business, Trade, Industry and Commerce – Features of Business -Trade
Classification - Aids to Trade – Industry – Classification – Relationship of Trade, Industry and
Commerce.

Unit II- Business Functions and Entrepreneurship

Functions of Business and their relationship - Factors influencing the choice of suitable form of
organization – Meaning of Entrepreneurship – Characteristics of a good entrepreneur - Types –
Functions of Entrepreneurship.

Unit –III – Forms of Business Organizations

Sole Proprietorship – Meaning – Characteristics – Advantages and Disadvantages – Partnership -
Meaning – Characteristics- Kinds of partners – Advantages and Disadvantages – Partnership Deed –
Hindu-undivided Family – Cooperative Societies.

Unit-IV- Joint Stock Company

Joint Stock Company – Meaning – Characteristics –Advantages – Kinds of Companies -
Differences between Private Ltd and Public Ltd Companies.

Unit-V- Company Incorporation

Preparation of important Documents for incorporation of Company – Memorandum of Association
– Articles of Association – Differences Between Memorandum of Association and Articles of
Association - Prospectus and its contents.

Reference Books

1. C.D.Balaji and G. Prasad, Business Organization - Margham Publications, Chennai.
2. R.K.Sharma and Shashi K Gupta, Business Organization - Kalyani Publications.
3. C.B.Guptha, Industrial Organization and Management, Sultan Chand.
4. Y.K.Bushan, Business organization and Management, Sultan Chand.
5. Sherlekar, Business Organization and Management, Himalaya Publications.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

DSC 3A 1.3 - Business Economics-I

Unit-I- Introduction

Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their differences.

Unit-II- Demand Analysis

Meaning and Definition of Demand - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand.

Unit –III- Elasticity of Demand

Meaning and Definition of Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of demand – Total outlay Method – Point Method – Arc Method.

Unit – IV- Cost and Revenue Analysis

Classification of Costs – Total - Average – Marginal and Cost function – Long-run – Short-run – Total Revenue - Average revenue – Marginal Revenue.

Unit-V- Break-Even Analysis

Type of Costs – Fixed Cost – Semi-variable Cost – Variable Cost– Cost behaviour - Breakeven Analysis - Its Uses and limitations.

Reference Books

1. S.Sankaran, Business Economics, Margham Publications, Chennai.
2. Business Economics - Kalyani Publications.
3. Business Economics – Himalaya Publishing House.
4. Aryasri and Murthy Business Economics , Tata McGraw Hill.
5. Business Economics, Maruthi Publications.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

Semester - II

DSC 1B 2.1– Fundamentals of Accounting-II

Unit-I: Depreciation

Meaning of Depreciation - Methods of Depreciation: Straight line – Written down Value – Sum of the Years' Digits - Annuity and Depletion (Problems).

Unit-II: Provisions and Reserves

Meaning – Provision vs. Reserve – Preparation of Bad debts Account – Provision for Bad and doubtful debts – Provision for Discount on Debtors – Provision for discount on creditors - Repairs and Renewals Reserve A/c (Problems).

Unit-III: 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).

Unit-IV: Consignment Accounts

Consignment - Features - Proforma invoice - Account sales – Del-credre Commission - Accounting treatment in the books of consigner and consignee - Valuation of closing stock - Normal and Abnormal losses (Problems).

Unit-V: Joint Venture Accounts

Joint venture - Features - Differences between Joint-venture and consignment – Accounting procedure - Methods of keeping records (Problems).

Reference Books:

1. R.L. Gupta & V.K. Gupta, Principles and Practice of Accounting, Sultan Chand
2. T. S. Reddy and A. Murthy - Financial Accounting, Margham Publications.
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers.
4. Tulsan, Accountancy-I, Tata McGraw Hill Co.
5. V.K. Goyal, Financial Accounting, Excel Books
6. T.S. Grewal, Introduction to Accountancy, Sultan Chand & Co.
7. Haneef and Mukherjee, Accountancy-I, Tata McGraw Hill
8. Arulanandam, Advanced Accountancy, Himalaya Publishers
9. S.N.Maheshwari & V.L.Maheshwari, Advanced Accountancy-I, Vikas Publishers.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

DSC 2 B 2.2: Business Environment

Unit – I: Overview of Business Environment

Business Environment – Meaning – Macro and Micro Dimensions of Business Environment – Economic – Political – Social – Technological – Legal – Ecological – Cultural – Demographic – Changing Scenario and implications – Indian Perspective – Global perspective.

Unit – II: Economic Growth

Meaning of Economic growth – Factors Influencing Development – Balanced Regional Development.

Unit – III - Development and Planning

Rostow's stages of economic development - Meaning – Types of plans – Main objects of planning in India – NITI Ayog and National Development Council – Five year plans.

Unit – IV : Economic Policies

Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Union budget – Structure and importance of Union budget – Monetary policy and RBI.

Unit – V -Social, Political and Legal Environment

Concept of Social Justice - Schemes - Political Stability - Leal Changes.

Suggested Readings:

1. Rosy Joshi and Sangam Kapoor : Business Environment.
2. Francis Cherunilam : Business Environment.
3. S.K. Mishra and V.K. Puri : Economic Environment of Business.
4. K. Aswathappa : Essentials of Business Environment.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

DSC 3 B 2.3 - Business Economics-II

Unit-I: Production and Costs: Techniques of Maximization of output, Minimization of costs and Maximization of profit - Scale of production - Economies and Dis-economies of Scale - Costs of Production – Cobb-Douglas Production Function.

Unit-II: Market Structure-I: Concept of Market - Market structure - Characteristics - Perfect competition -characteristics equilibrium price - profit maximizing output in the short and long run Monopoly- characteristics - Profit maximizing out-put in the short and long run - Defects of Monopoly – Distinction between Perfect competition and Monopoly.

Unit-III Market Structure-II: Monopolistic Competition - Characteristics - Product differentiation - Profit maximization - Price and output in the short and long - run – Oligopoly - characteristics - Price rigidity - Kinked Demand Curve - Distribution - Concepts - Marginal Productivity - Theory of Distribution.

Unit-IV National Income And Economic Systems: National Income - Definition Measurement - GDP - Meaning Fiscal deficit - Economic systems - Socialism - Mixed Economic System - Free Market economy.

Unit-V Structural Reforms: Concepts of Economic liberalization, Privatization, Globalization - WTO Objectives Agreements - Functions - Trade cycles - Meaning - Phases - Benefits of International Trade - Balance of Trade and Balance of payments.

Reference Books:

1. Aryasri and Murthy, Business Economics, Tata McGraw Hill
2. H.L Ahuja, Business Economics, Sultan Chand & Sons
3. KPM Sundaram, Micro Economics
4. Mankiw, Principles of Economics, Cengage Publications
5. Mithani, Fundamentals of Business Economics, Himalaya Publishing House
6. DAR Subrahmanyam &V Hari Leela, A Text Book on Business Economics, Maruthi Publishers.
7. A. V. R. Chary, Business Economics, Kalyani Publishers, Hyderabad.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

Semester - III

DSC 1 C 3.1- Corporate Accounting

Unit - I :

Accounting for Share Capital - Issue, forfeiture and reissue of forfeited shares- concept & process of book building - (Problems only)

Unit - II :

Issue and Redemption of Debentures - Employee Stock Options – Accounting Treatment for Convertible and Non-Convertible debentures (preparation of Journal and Ledger). (Problems only)

Unit –III:

Valuation of Good will and Shares : Need and methods - Normal Profit Method, Super Profits Method – Capitalization Method - Valuation of shares - Need for Valuation - Methods of Valuation - Net assets method, Yield basis method, Fair value method (including problems).

UNIT – IV:

Company Final Accounts: Preparation of Final Accounts – Adjustments relating to preparation of final accounts – Profit and loss account and balance sheet – Preparation of final accounts using computers (including problems).

Unit –V

Provisions of the Companies Act, 2013 relating to issues of shares and debentures - Preparation of Balance Sheet and Profit and Loss Account – Schedule-III. Issue of rights and bonus shares - Buyback of shares.(Problems only)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

III SEMESTER

DSC 2C 3.2- Business Statistics

Unit 1: Introduction to Statistics:

Definition, importance and limitations of statistics - Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation -Diagrammatic and graphic presentation of data using Computers (Excel).

Unit 2: Measures of Central Tendency:

Characteristics of measures of Central Tendency-Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode, Deciles, Percentiles, Properties of averages and their applications.

Unit 3: Measures of dispersion and Skewness:

Properties of dispersion-Range-Quartile Deviation –Mean Deviation-Standard Deviation-Coefficient of Variation-Skewness definition-Karl Pearson's and Bowley's Measures of skewness-Normal Distribution.

Unit 4: Measures of Relation:

Meaning and use of correlation – Types of correlation-Karl Pearson's correlation coefficient – Spearman's Rank correlation-probable error-Calculation of Correlation by Using Computers.

Unit 5: Analysis of Time Series & Index Numbers:

Components of Time series- Measurement of trend – Index Numbers-Methods of Construction of Index Numbers – Price Index Numbers – Tests of Adequacy of Index Numbers – Cost of Index Numbers.

Suggested Readings:

- | | |
|--|-------------------------------|
| 1. Business Statistics | Reddy, C.R Deep Publications. |
| 2. Statistics-Problems and Solutions | Kapoor V.K. |
| 3. Fundamentals of Statistics | Elhance.D.N |
| 4. Statistical Methods | Gupta S.P |
| 5. Statistics | Gupta B.N. |
| 6. Fundamentals of Statistics | Gupta S.C |
| 7. Statistics-Theory, Methods and Applications | Sancheti,D.C. &Kapoor V.K |
| 8. Business Statistics | J.K.Sharma |



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

III SEMESTER

DSC 3C 3.3 - Banking Theory & Practice

Unit-I: Introduction

Meaning & Definition of Bank – Functions of Commercial Banks – Kinds of Banks - Central Banking Vs. Commercial Banking.

Unit-II: Banking Systems

Unit Banking , Branch Banking, Investment Banking- Innovations in banking – E banking - Online and Offshore Banking , Internet Banking - Anywhere Banking - ATMs - RTGS.

Unit-III: Banking Development

Indigenous Banking - Cooperative Banks, Regional Rural banks, SIDBI, NABARD - EXIM Bank.

Unit-IV: Banker and Customer

Meaning and Definition of Banker and customer – Types of Customers - General Relationship and Special Relationship between Banker and Customer - KYC Norms.

Unit-V: Collecting Banker and Paying Banker

Concepts - Duties & Responsibilities of Collecting Banker – Holder for Value – Holder in Due Course – Statutory Protection to Collecting Banker - Responsibilities of Paying Banker - Payment Gateways.

Books for Reference

1. Banking Theory: Law & Practice : K P M Sundram and V L Varsheney
2. Banking Theory, Law and Practice : B. Santhanam; Margam Publications
3. Banking and Financial Systems : Aryasri
4. Introduction to Banking : Vijaya Raghavan
5. Indian Financial System : M.Y.Khan
6. Indian Financial System : Murthy & Venugopal



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

IV SEMESTER

Semester - IV

DSC 1D 4.1- Accounting for Service Organizations

Unit-I: Non-Trading/ Service Organizations

Non profit entities-Features of nonprofit entities-Accounting process-Preparation of summaries – Receipt and payment account – Meaning and special features – Procedure of preparation – Uses and Limitations.

Income and expenditure account – Features – Procedure for preparation – Preparation of Balance Sheet **(Problems only)**

Unit – II Single Entry or Accounts from Incomplete Records:

Single Entry - Features-Books and accounts maintained-Recording of transactions-Ascertainment of Profit.(Statement of Affairs method only). **(Problems only)**

Unit – III - Bank Accounts

Bank Accounts – Books and Registers to be maintained by Banks – Slip System of Posting – Rebate on bills discounted – Schedule of advances – Non forming assets –Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts. **(Problems only)**

Unit-IV: Insurance Companies

Life Insurance Companies –Preparation of Revenue Account, Balance Sheet (including problems) – LIC Act, 1956.

Unit – V - Insurance Claims for Loss of Stocks only

Fire loss claims - Claims for loss of goods - Average clause - Steps calculation. **(Problems only)**

Suggested Readings

1. Corporate Accounting – RL Gupta & M. Radha Swami
2. Corporate Accounting – P.C. Tulsian
3. Company Accounts : Monga, Girish Ahuja and Shok Sehagal
4. Advanced Accountancy: Jain and Narang
5. Advanced Accountancy : R.K. Gupta and M. Radhaswamy
6. Advanced Accountancy : Chakraborty
7. Advanced Accountancy: S.P. Iyengar
8. Modern Accounting: A. Mukherjee, M. Hanife McGraw Hill Company Ltd., New Delhi.
9. Accounting standards and Corporate Accounting Practices: T.P. Ghosh Taxman
10. Corporate Accounting: S.N. Maheswari, S.R. Maheswari, Vikas Publishing.
11. Advanced Accountancy: Arutanandam, Raman, Himalaya Publishing House.
12. Advanced Accounts: M.C. Shukla, T.S. Grewal, S.C. Gupta, S. Chand.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

SYLLABUS 2019-2020

IV SEMESTER

DSC 3D 4.3- Income Tax

Unit-I

Introduction: Income Tax Law – Basic concepts: Income, Person, Assesse, Assessment year, Agricultural Income, Capital and revenue, Residential status, Income exempt from tax (theory only).

Unit-II

Income from salary: Allowances, perquisites, profits in lieu of salary, deductions from salary income, computation of salary income and qualified savings eligible for deduction u/s 80C (including problems).

Unit-III

Income from House Property: Annual value, let-out/self occupied/deemed to be let-out house, deductions from annual value - computation of income from house property (including problems).

Unit-IV

Income from Capital Gains – Income from other sources – (from Individual point of view) - chargeability – and assessment (including problems).

Unit-V:

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

Reference Books:

1. Dr. Vinod; K. Singhanian; Direct Taxes – Law and Practice, Taxman Publications
2. B.B. Lal; Direct Taxes; Konark Publications
3. Dr. Mehrotra and Dr. Goyal; Direct Taxes – Law and Practice; Sahitya Bhavan Publication.
4. Gaur and Narang; Income Tax, Kalyani Publishers, New Delhi.

Semester - V

DSC - 1E 5.1 Cost Accounting

Unit-I:Introduction: Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.

Unit-II: Elements of Cost: Materials: Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, (problems only).

Unit-III: Labour: Labour: Control of labor costs – Methods of remuneration – labour incentives schemes – Time rate halsey plan, Rowan plan, piece rate- F.W Taylor and Merrick multiple piece rate method (problems only)

Unit-IV: Methods of Costing: Job costing And contract costing – (problems only).

Unit -V: Marginal costing : Marginal Costing – BEP,P/V ratio, Margin of safety (problems only)

References:

1. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
2. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
3. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
4. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
5. S.N .Maheswari – Principles of Management Accounting.
6. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
7. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.

DSC 2E 5.2 ADVANCED ACCOUNTING –I

UNIT-I:- Self –balancing System:

Meaning, Advantages of self balancing system- preparation of sales ledger adjustment account, purchase ledger adjustment account and General ledger adjustment account. (Problems only)

Unit –II:- Royalty

Royalties- preparation of minimum rent account, Royalties account, short working accounts and Land lord account (Problems only)

UNIT – III :- Insolvency Accounting

Insolvency of an Individual- Preparation of statement of affairs, and deficiency account. (problems only)

UNIT – IV:- Partnership Accounts-I

Nature- deed- Types of Capital accounts (Fixed and fluctuating), Calculation of goodwill, Revaluation of assets and liabilities of firm- Admission of a partner (problems only)

UNIT-V:- Partnership Accounts-II

Retirement of a partner- Death of a partner- Dissolution of a partnership firm- Garner Vs Murray Case (problems only)

Reference Books:

1. Advanced Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons
2. Corporate Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons
3. Accountancy-I- S.P.Jain and K.L.Narang, Kalyani Publications
4. Advanced Accountancy- M.C.Shukla and T.S. Grewal, Sultan Chand & Sons

DSC 3E 5.3 Commercial Geography

Unit -I: The Earth: Internal structure of the Earth – Latitude – Longitude – Realms of the Earth – Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.

Unit -II: India – Agriculture: Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.

Unit -III: India – Forestry: Forests – Status of Forests in Andhra Pradesh – Forest (Conservation) Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.

Unit -IV: India – Minerals and Mining: Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites - District-wise Profile.

Unit-V: India – Water Resources – Rivers: Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers - Experience of India and Andhra Pradesh.

References:

1. Shabiar Ahmad; Quazi ,Natural Resource Consumption and Environment Management, APH Publishing Corporation.
2. Tarachand, Economic and Commercial Geography of India, Vikas Publishing House.
3. Dr. S. Sankaran, Commercial Geography, Margam Publications, Chennai.
4. C. B. Memoria, Commercial Geography, Lal Agarwal & Co.
5. C. B. Memoria, Economic and Commercial Geography, Lal Agarwal & Co.

DSC 4F 5.4 GOODS & SERVICE TAX FUNDAMENTALS-I

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 – Models of GST: Austrian, Canadian, Kelkar-Shah – Bagchi-Poddar -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.

References:

1. Goods and Services Tax in India – Notifications on different dates.
2. GST Bill 2012.
3. Background Material on Model GST Law, Sahitya Bhawan Publications, Hospital Road, Agra - 282 003.
4. The Central Goods and Services Tax Act, 2017, NO. 12 OF 2017 Published by Authority,

Cluster Elective -1: E-Commerce

DSC 5E 5.5 e-Commerce

Unit-I: e-Commerce: Features of Electronic Commerce - Distinction between e-Commerce and e-Business - Types of Business Models: B2B, B2C, C2C - Benefits and Limitations of e-Commerce - Apps.

Unit-II: e-Business Applications: Integration and e-Business suits - ERP, e-SCM, e-CRM - Methods and benefits of e-Payment Systems –e-Marketing – Applications and issues

Unit-III: e-Business on different Fields: e-Tourism – e-Recruitment – e- Real Estate – e-Stock Market – e-Music/Movies - e-Publishing and e-Books.

Unit-IV: Concept of Online Education: Process - Methods - e-Content development and Deliveries - Major technologies used in e-Education - Online Testing - Methods - Future Trends.

Unit-V: Mobile Commerce: Ticketing - Me-Seva; Government and Consumer Services – e-Retailing - e-Groceries – Security challenges - Case Studies.

References:

1. Turban E. Lee J., King D. and Chung H.M: Electronic commerce-a Managerial Perspective, Prentice-Hall International, Inc.
2. Bhatia V., E-commerce, Khanna Book Pub. Co. (P) Ltd., Delhi.
3. Daniel Amor, E Business R (Evolution), Pearson Education.
4. Krishnamurthy, E-Commerce Management, Vikas Publishing House.
5. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill.
6. P. T. Joseph, E-Commerce: A Managerial Perspectives, Tata McGraw Hill.

DSC 6E 5.6 Business Networks

Unit-I: Business Forms: Interrelation among Stakeholders – Business and Government – Business and Society: Social Network and Facebook.

Unit-II: Business Networking through ICT: Basic concepts – Uses and Application of Business Networks – Different Layers of Business Networks – Internet and Business Networks – Network Security.

Unit-III: Business Networking Systems and Devices: Communication Satellites – Servers – Cloud Computing – Sharing – Spectrum – Commercial issues.

Unit-IV: Customer Relationship Management: Establishing Network connection with customers– Forward and Backward Integration – Customer Data Base – Creation and Maintenance – Legal and Ethical Issues.

Unit-V: Business Analytics: Master Data Management – Data Warehousing and Mining – Data Integration – OLTP and OLAP.

References:

1. Jerry, FitzGerald and Alan Dennis, Business Data Communications and Networking, John Wiley & Sons.
2. Tanenbaum, A. S., Computer Networks, Pearson Education.
3. David A Stamper, Business Data Communications. Addison Wesley.
4. Business Analytics – Methods, Models and Decisions, James R. Evans, Prentice Hall.
5. Business Analytics - An Application Focus, Purba Halady Rao, PHI learning
6. R.N Prasad and Seema Acharya, Fundaments of Business Analytics, Wiley India.

Cluster Elective – 2: Banking and Financial Services

DSC 5E 5.5: Central Banking

Unit-I : Introduction : Evolution and Functions of Central Bank –Development of Central Banks in Developed and Developing countries – Trends in Central Bank Functions.

Unit-II : Central banking in India : Reserve Bank of India – Constitution and Governance, Recent Developments, RBI Act. – Interface between RBI and Banks.

Unit-III : Monetary and Credit Policies : Monetary policy statements of RBI – CRR – SLR –Repo Rates – Reverse Repo Rates – Currency in circulation – Credit control measures.

Unit-IV : Inflation and price control by RBI : Intervention mechanisms – Exchange rate stability – Rupee value – Controlling measures.

Unit-V : Supervision and Regulation : Supervision of Banks – Basle Norms, Prudential Norms, Effect of liberalization and Globalization – Checking of money laundering and frauds.

References :

1. Reserve Bank of India Publication, Functions and Working of the RBI
2. Vasant Desai, Central Banking and Economic Development, Himalaya Publishing.
3. S.Panandikar, Banking in India, Orient Longman.
4. Reserve Bank of India Publication, Report on Trends and Progress of Banking in India.
5. Annual Reports of Reserve Bank of India.
6. Rita Swami, Indian Banking System, International Publishing House Pt.Ltd.
7. S.V.Joshi, C.P.Rodrigues and Azhar Khan, Indian Banking System, MacMillan Publishing.

DSC 6E 5.6: Rural and Farm Credit

Unit-I : Rural Credit : Objectives and Significance of Rural credit – Classification of rural credit – General Credit Card (GCC) – Financial Inclusion – Rupay card.

Unit-II : Rural Credit Agencies : Institutional and Non-institutional Agencies for financing agriculture and Rural Development – Self Help Groups (SHG) – Financial for Rural Industries.

Unit-III : Farm Credit : Scope – Importance of farm credit – Principles of Farm Credit – Cost of Credit – Types – Problems and remedial measures – Kisan Credit Card (KCC) Scheme.

Unit-IV : Sources of Farm Credit : Cooperative Credit : PACS – APCOB – NABARD –Lead Bank Scheme – Role of Commercial and Regional Rural Banks – Problems of recovery and over dues.

Unit-V : Farm Credit Analysis : Eligibility Conditions – Analysis of 3 R's (Return, Repayment Capacity and Risk –bearing Capacity) – Analysis of 3 C's of Credit (Character, Capacity and Capital) – Crop index reflecting use and farm credit – Rural Credit Survey Reports.

References :

- 1.National Bank of Agricultural and Rural Development (NABARD) Annual report.
- 2.Economy Survey, Government of India.
- 3.Rural Development, Sundaram I.S., Himalaya Publishing House, Mumbai.
- 4.Rural Credit in India. C.S.Rayudu, Mittal Publications.
- 5.Farm Credit and Co-operative in India, Tiruloati V., Naidu. V T Naidu, Vora & Co.Pub.Ltd

SEMESTER –VI

DSC 1F 6.1 GOODS AND SERVICE ACT & CUSTOMER ACT-II

Unit-I: Registration and Filing–Registration of Assesses Under GST - Persons liable for registration - Compulsory registration in certain cases - Procedure for registration - Deemed registration - GST Rate Structure.

Unit-II: Administration: Officers under GST Act: Appointment and Powers of officers- Administration of officers of State tax or Union-territory tax – Accounts and Records – Retention of Records – Audit by Tax Authorities.

Unit-III: Assessment: Self-assessment - Provisional assessment –Security of Returns - Assessment of Non-filers of returns - Assessment of Unregistered persons –Audit and Assessment – Other features of Dual GST model.

Unit-IV: Levy and Exemption of Tax:Chargeability – Collection at Source –E-Commerce - Composition Levy - Tax under Central GST and State GST - Zero-rating of Exports – GST on Imports –Returns under GST –Taxation of Services–Remission of Tax - Adjustment and Refund of GST.

Unit- V: Customs Act: Types of Custom Duties- Valuation for Customs Duty- Tariff Value- Customs Value- Methods of Valuation for Customs - Problems on Custom Duty Assessment.

References:

1. Goods and Services Tax in India – Notifications on different dates
2. Customs Law Manual and Customs Tariff of India- R K Jain.
3. Background Material on Model GST Law, Sahitya Bhawan Publications, Hospital Road, Agra - 282 003.
4. The Central Goods and Services Tax Act, 2017, NO. 12 OF 2017 Published by Authority, Ministry of Law and Justice, New Delhi, the 12th April, 2017.

DSC 2F 6.2 AUDITING

Unit-I: Auditing: Meaning – Objectives – Importance of Auditing – Auditing as a Vigil Mechanism – Role of Auditor in checking corporate frauds.

Unit-II: Types of Audit: Based on Ownership and time - Independent, Financial, Internal, Cost, Tax, Government, Secretarial audits.

Unit-III: Planning of Audit: Steps to be taken at the commencement of a new audit - Audit programme - Audit note book - Internal check, internal audit and internal control.

Unit-IV: Vouching and Investigation: Vouching of cash and trading transactions - Investigation, Auditing vs. Investigation

Unit-V: Company Audit and Auditors Report: Auditor's Qualifications – Appointment and Reappointment – Rights, duties, liabilities and disqualifications - Audit report: Contents – Preparation - Relevant Provisions of Companies Act, 2013.

References:

1. S.Vengadamani, "Practical Auditing", Margham Publications, Chennai.
2. Ghatalia, "Principles of Auditing", Allied Publishers Pvt. Ltd., New Delhi.
3. Pradeesh Kumar, Baldev Sachdeva & Jagwant Singh, "Auditing Theory and Practice, Kalyani Publications, Ludhiana.
4. N.D. Kapoor, "Auditing", S. Chand, New Delhi.
5. R.G. Saxena, "Principles and Practice of Auditing", Himalaya Publishing House, New Delhi.
6. Jagadesh Prakesh, "Principles and Practices of Auditing" Kalyani Publications, Ludhiana.
7. Kamal Gupta and Ashok Gupta, "Fundamentals of Auditing", Tata McGraw Hill

DSC 3F 6.3 MANAGEMENT ACCOUNTING

Unit–I: Management Accounting: Interface with Financial Accounting and Cost Accounting - Financial Statement analysis and interpretation: Comparative analysis – Common size analysis and trend analysis (including problems).

Unit–II: Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, activity and solvency ratios (including problems).

Unit–III: Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).

Unit–IV: Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement - Uses and limitations of cash flow analysis (including problems).

Unit–V: Standard Cost: Material variance only (including Problems).

References:

1. S.N. Maheswari, A Textbook of Accounting for Management, S. Chand Publishing, New Delhi.
2. I.M Pandey, “Management Accounting”, Vikas Publishing House, New Delhi,
3. Shashi K. Gupta & R.K. Sharma, “Management Accounting: Principles and Practice”, Kalyani Publishers, Ludhiana.
4. Jawahar Lal, Accounting for Management, Himalaya Publishing House, New Delhi.
5. Charles T. Horngren, [et.al.](#), “Introduction to Management Accounting” Person EducationIndia, New Delhi, 2002.
6. Murthy & Guruswamy – Management Accounting, Tata McGraw Hill, New Delhi.

DSC 4F 6.4 ADVANCED ACCOUNTING-II

UNIT-I:- Hire purchase – instalement purchase accounting

Hire Purchase system- Calculation of interest- Accounting procedure for preparation of Hire Purchase Accounts –Instalment purchase system (problems only)

UNIT-II:- Branch Accounts:

Branch Accounting- Debtors system- stock and debtors system- invoice price method (excluding independent and foreign branch). (problems only)

UNIT-III:- Internal Reconstruction:

Meaning- Reasons and factors for reconstruction procedure for capital reduction- preparation of post reconstruction balance sheet and capital reduction account (excluding surrender of shares) (problems only)

UNIT-IV:- Liquidation:

Meaning – liquidation expenses- Liquidator’s remuneration – preparation of Liquidator’s final statement of account (problems only)

UNIT-V:- Profits Prior to Incorporation of Company:

Profits prior to incorporation of Company- Accounting treatment (problems only)

Reference Books:

1. Advanced Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons

CLUSTER ELECTIVE -1

DSC 5F 6.5: e-PAYMENTS SYSTEM

Unit-I: e-Cash and Virtual Money: Electronic Data Interchange (EDI) - EFT/RTGS/Electronic Payment modes - Foundations of e-Cash and Issues; Security, Anonymity, Untraceability, Virtualcurrencies, Bitcoin.

Unit-II: Automated Clearing and Settlement: Process of Real Time Gross Settlement System Net Settlement -ATM Networks - Fedwire, CHIPS and SWIFT.

Unit-III: e-Payment Security and Digital Signature: Cryptographic Methods - Hash functions Public/Private Key methods: RSA - Digital Signatures - Certification Process - Digital identity Documents and Remote Authentication.

Unit-IV: Mobile Payments: Wireless payments, Digital Wallets, Google Wallet – Obopay - Security Challenges.

Unit-V: Electronic Invoice and Payment System: Electronic Statement Delivery - EIPP providers- Biller service providers - Customer service providers - Reconciliation through Bank -Invoice Paperelimination - Scan-based trading (SBT).

References:

1. Domonique Rambure and Alec Nacamuli, "Payment Systems: From the Salt Mines to the Board Room", Palgrave MacMillan.
2. Weidong Kou, "Payment Technologies for E-Commerce". Springer, Germany.
3. Donal O'Mahony, Michael Peirce and Hitesh Tewari, "Electronic Payment Systems", Artech House, Inc.
4. M. H. Sherif, Protocols for Secure Electronic Commerce, Boca Raton, Fla, CRC Press.

DSC 6F 6.6 SOCIAL MEDIA AND e-MARKETING

Unit-I: Social Media: Career in Social Media Marketing - Strategic Marketing - Social media Planning process - Campaigns (tactics and results).

Unit-II: Social Consumers: Social media marketing segments - Digital consumers - Digital communities - Online communities - Strong & Weak Ties - Social Community - Social Publishing.

Unit-III: Social Media Sites: Face book - Twitter - LinkedIn - YouTube and their Operations - Data mining and Social Media - Role of Social Media in Marketing Research - Social Media and Privacy/Ethics.

Unit-IV: e-Marketing: Objectives, Online Advertising - Distribution in e-Marketing, Lead Generation Platform - Customer Service mechanism - Relationship Building medium.

Unit-V: Methods of e-Marketing: Advertising Techniques, Selling Methods, Sales Promotion - Public Relations - Sponsorship, Merchandising, Teleconferencing - Chatting.

References:

1. Chaffey, D., e-Marketing Excellence: Planning and Optimizing Your Digital Marketing, Burlington: Elsevier.
2. Hanson, W. A. & Kalvanam, K., Internet Marketing & e-Commerce, Thomson Southwestern, Mason, Ohio.
3. Harris, L., Marketing the e-Business, Hoboken: Taylor & Francis.
4. Krishnamurthy, S., Contemporary research in e-Marketing, Hershey, PA: Idea Group Publication.
5. Stephen Dann & Susan Dann, E-Marketing: Theory and Application, Macmillan, New York.
6. Seth Godin, E-Marketing, Berkley Publishing Group.
7. Irvine Clarke & Theresa B. Flaherty Advances in Electronic Marketing, Idea Group Publishing, Hershey.

Cluster Elective – 2: Banking and Financial Services

DSC 5F 6.5: Financial Services

Unit-I : Financial Services : Role of Financial Services – Banking and Non Banking Companies – Activities of Non Banking Finance Companies – Fund Based Activities – Fee Based Activities.

Unit-II: Merchant Banking Services : Scope and importance of merchant banking services – Venture Capital – Securitization – Demat Services – Commercial Paper.

Unit-III: Leasing and Hire – Purchase : Types of Lease, Documentation and Legal aspects – Fixation of Rentals and Evaluation – Hire Purchasing – Securitization of debts – House Finance.

Unit-IV: Credit Rating : Purpose – Types – Credit Rating Symbols – Agencies : CRISIL and CARE – Equity Assessment vs Grading – Mutual funds.

Unit-V: Other Financial Services : Factoring and Forfeiting – Procedural and financial aspects – Installment System – Credit Cards – Central Depository Systems : NSDL, CSDL.

References :

1. B.Santhanam, Financial Services, Margham Publication, Chennai.
2. M.Y.Khan, Financial Services, Tata McGraw – Hill, New Delhi.
3. Machendra Raja, Financial Services, S.Chand Publishers, New Delhi.
4. V.A.Avdhani, Marketing of Financial Services
5. Machiraji, “Indian Financial System”, Vikas Publishers.
6. Sandeep Goel, Financial Services, PHI Learning.
7. L.M.Bhole, Financial Institutions and Markets, Tata McGraw Hill.
8. SEBI Guidelines, Bharat Publications, New Delhi.
9. E.Gordon & H.Natarajan, Capital Market in India, Himalaya publishing House.

DSC 6F 6.6: Marketing of Financial Services

Unit-I: Difference between Goods and Services : Managing Service Counters – Integrated Service Management – Service Elements.

Unit-II: Constructing Service Environment : Managing People for service Advantage – Service Quality and Productivity – Customer Loyalty.

Unit-III: Pricing and Promotion Strategies : Pricing strategies – Promotion strategies – B2B Marketing – Marketing Planning and Control for services.

Unit-IV: Distributing Services : Cost and Revenue Management – Approaches for providing services – Channels for Service provision – Designing and managing Service Process.

Unit-V: Retail Financial Services : Investment services – Insurance services – Credit Services – Institutional Financial Services – Marketing practices in select Financial Service Firms.

References :

1. Aradhani “Marketing of Financial Services “ Himalaya Publications.
2. Sinha and Saho, Services Marketing, Himalaya Publishing House.
3. Reddy Appanaiah, Anil Kumar and Nirmala, Services Marketing, Himalaya Publishing.
4. Shajahan, Services Marketing, Himalaya Publishing House.
5. Christopher lovelock, Services Marketing, Pearson Education Aisa.
6. Helen Woodroffe – Services Marketing, MCMillan India Ltd.
7. S.M.Jha, Services Marketing, New Delhi Himalaya Publishing House.
8. Valarie A. Zeithmal & Mary JoBitner, Services Marketing, New Delhi, Tata McGraw Hill



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

I SEMESTER

Semester - I

DSC 1A I.1- Accounting-I

Unit-I – Introduction to Accounting

Need for Accounting – Definition – Objectives, Advantages – Book keeping and Accounting– Accounting concepts and conventions - Accounting Cycle - Classification of Accounts and its rules - Double Entry Book-keeping - Journalization - Posting to Ledgers, Balancing of ledger Accounts (problems).

Unit –II: Subsidiary Books:

Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty cash Book (Problems).

Unit-III: Trail Balance and Rectification of Errors:

Preparation of Trail balance - Errors – Meaning – Types of Errors – Rectification of Errors (Problems)

Unit-IV- Bank Reconciliation Statement:

Need for bank reconciliation - Reasons for difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement- Problems on both favorable and unfavourable balances.

Unit -V: Final Accounts:

Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with adjustments (Problems).

References:

1. T.S.Reddy & A. Murthy, Financial Accounting , Margham Publications
2. R.L Gupta & V. K Gupta, Principles and Practice of Accounting, Sultan Chand & Sons
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers
4. Tulasian, Accountancy -I, Tata McGraw Hill Co.
5. V.K.Goyal, Financial Accounting, Excel Books
6. K. Arunjyothi, Fundamentals of Accounting; Maruthi Publications



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

I SEMESTER

DSC 2 A 1.2 - Business Organization and Management

Unit-I: Introduction: Concepts of Business, Trade, Industry and Commerce – Features of Business -Trade Classification - Aids to Trade – Industry – Classification – Relationship among Trade, Industry and Commerce.

Unit-II: Forms of Business Organizations: Forms of Business Organization: Sole Proprietorship, Joint Hindu Family Firm, Partnership firm, Joint Stock Company, Cooperative Society; Choice of Form of Organization. Government - Business Interface; Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs).

Unit-III: Joint Stock Company: Company Incorporation: Preparation of important Documents for incorporation of Company – Memorandum of Association – Articles of Association – Differences Between Memorandum of Association and Articles of Association - Prospectus and its contents - Companies Act, 2013.

Unit-IV: Management and Organization: Process of Management: Planning; Decision-making; Organizing: Line and Staff - Staffing - Directing and Controlling; Delegation and Decentralization of Authority.

Unit-V: Functional Areas of Management: Production - Manufacturing - Make in India - Marketing Management: Marketing Concept; Marketing Mix; Product Life Cycle; Pricing Policies and Practices. Financial Management: Objectives; Sources and Forms of Funds – Human Resource Management: Functions.

Suggested Readings:

1. Kaul, V.K., *Business Organization and Management*, Pearson Education, New Delhi.
2. Chhabra, T.N., *Business Organization and Management*, Sun India Publications, New Delhi.
3. Koontz and Weihrich, *Essentials of Management*, McGraw Hill Education.
4. Basu, C. R., *Business Organization and Management*, McGraw Hill Education.
5. Jim, Barry, John Chandler, Heather Clark; *Organization and Management*, Cengage Learning.
6. Allen, L.A., *Management and Organization*; McGraw Hill, New York.
7. R.K.Sharma and Shashi K Gupta, *Business Organization - Kalyani Publications*.
8. C.B.Guptha, *Industrial Organization and Management*, Sultan Chand.
9. Y.K.Bushan, *Business organization and Management*, Sultan Chand.
10. Sherlekar, *Business Organization and Management*, Himalaya Publications.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

I SEMESTER

DSC 3 A- Computer Fundamentals & Photoshop

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, input 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, color 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, noise filters, pixel ate filters, light effects, difference clouds, sharpen filters, printing.

Reference Books:

- 1.ReemaThareja, 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.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

I SEMESTER

DSC - IE 5.1 Cost Accounting

Unit-I:Introduction: Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.

Unit-II: Elements of Cost: Materials: Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, (problems only).

Unit-III: Labour: Labour: Control of labor costs – Methods of remuneration – labour incentives schemes – Time rate halsey plan, Rowan plan,-Piece rate- F.W Taylor and Merrick multiple piece rate method (problems only)

Unit-IV: Methods of Costing: Job costing and contract costing – (problems only).

Unit -V: Marginal costing : Marginal Costing – BEP, P/V ratio, Margin of safety (problems only)

References:

1. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
2. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
3. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
4. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
5. S.N .Maheswari – Principles of Management Accounting.
6. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
7. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

II SEMESTER

Semester - II

DSC 1B 2.1 – Accounting-II

Unit-I: Depreciation

Meaning of Depreciation - Methods of Depreciation: Straight line – Written down Value – Sum of the Years' Digits - Annuity and Depletion (Problems).

Unit-II: Provisions and Reserves

Meaning – Provision vs. Reserve – Preparation of Bad debts Account – Provision for Bad and doubtful debts – Provision for Discount on Debtors – Provision for discount on creditors - Repairs and Renewals Reserve A/c (Problems).

Unit-III: 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).

Unit-IV: Consignment Accounts

Consignment - Features - Proforma invoice - Account sales – Del-credre Commission - Accounting treatment in the books of consigner and consignee - Valuation of closing stock - Normal and Abnormal losses (Problems).

Unit-V: Joint Venture Accounts

Joint venture - Features - Differences between Joint-venture and consignment – Accounting procedure - Methods of keeping records (Problems).

Reference Books:

1. R.L. Gupta & V.K. Gupta, Principles and Practice of Accounting, S.Chand & Co.
2. T. S. Reddy and A. Murthy, Financial Accounting, Margham Publications.
3. S.P. Jain & K.L. Narang, Accountancy-I, Kalyani Publishers.
4. Tulsan, Accountancy-I, Tata McGraw Hill Co.
5. V.K. Goyal, Financial Accounting, Excel Books
6. T.S. Grewal, Introduction to Accountancy, Sultan Chand & Co.
7. Haneef and Mukherjee, Accountancy-I, Tata McGraw Hill
8. Arulanandam, Advanced Accountancy, Himalaya Publishers
9. S.N.Maheshwari & V.L.Maheshwari, Advanced Accountancy-I, Vikas Publishers.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

II SEMESTER

DSC 2 B 2.2 - Business Economics

Unit-I- Introduction: Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their Interface.

Unit-II- Demand Analysis: Definition - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand - Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of Demand – Total outlay Method – Point Method – Arc Method.

Unit – III: Cost and Revenue Analysis

Classification of Costs – Total - Average – Marginal; Cost function – Long-run – Short-run – Total Revenue - Average revenue – Marginal Revenue - Production and Costs: Techniques of Maximization of output, Minimization of costs and Maximization of profit - Scale of production - Economies and Dis-economies of Scale - Cobb-Douglas Production Function.

Unit-IV: Market Structure: Concept of Market - Market structure - Perfect competition - characteristics - equilibrium price - Monopoly- characteristics - Defects of Monopoly – Distinction between Perfect competition and Monopoly - Monopolistic Competition - Characteristics - Product differentiation - Oligopoly - characteristics - Price rigidity - Kinked Demand Curve.

Unit-V: National Income And Economic Systems: National Income - Measurement - GDP - Growth Rates - Problems in Assessment - Economic Systems - Socialism - Mixed Economic System - Free Market Economy - Economic liberalization, Privatization, Globalization - Free Trade - Agreements - Trade cycles - Phases - International Trade - Balance of payments.

References:

1. S.Sankaran, Business Economics, Margham Publications, Chennai.
2. Business Economics - Kalyani Publications.
3. Business Economics – Himalaya Publishing House.
4. Aryasri and Murthy Business Economics , Tata McGraw Hill.
5. Aryasri and Murthy, Business Economics, Tata McGraw Hill
6. H.L Ahuja, Business Economics, Sultan Chand & Sons
7. Mankiw, Principles of Economics, Cengage Publications
8. Mithani, Fundamentals of Business Economics, Himalaya Publishing House
9. A.V. R. Chary, Business Economics, Kalyani Publishers, Hyderabad.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

II SEMESTER

Office Automation Tools

Unit-I

MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II

Formatting options: Different formatting options, change row height, formulae and functions.
Functions: Meaning and advantages of functions, different types of functions available in Excel.

Unit-III

Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis, **Macro:** Meaning and advantages of Macros, creation, editing and deletion of macros - Creating a macro, how to run, how to delete a macro.

Unit-IV

MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access. **Tables:** table creation using design view, table wizard, data sheet view, import table, link table. **Forms:** The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit –V

Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. **Printing Reports:** Form and Database Printing.
Relational Databases: Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

Reference Books:

1. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill(2008)
2. EdBott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

III SEMESTER

Semester - III

DSC 1 C 3.1 - Corporate Accounting

Unit-I

Accounting for Share Capital - Issue, forfeiture and reissue of forfeited shares- concept & process of book building. **(Problems only)**

Unit-II

Issue and Redemption of Debentures - Employee Stock Options – Accounting Treatment for Convertible and Non-Convertible debentures (preparation of Journal and Ledger). **(Problems only)**

Unit –III

Valuation of Goodwill and Shares: Need and methods - Normal Profit Method, Super Profits Method – Capitalization Method - Valuation of shares - Need for Valuation - Methods of Valuation - Net assets method, Yield basis method, Fair value method (including problems).

UNIT – IV

Company Final Accounts: Preparation of Final Accounts – Adjustments relating to preparation of final accounts – Profit and loss account and balance sheet – Preparation of final accounts using computers (including problems).

Unit –V

Provisions of the Companies Act, 2013 relating to issues of shares and debentures - Preparation of Balance Sheet and Profit and Loss Account – Schedule-III. Issue of rights and bonus shares - Buyback of shares (preparation of Journal and Ledger). **(Problems only)**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

III SEMESTER

DSC 2C 3.2- Business Statistics

Unit 1: Introduction to Statistics:

Definition, importance and limitations of statistics - Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation -Diagrammatic and graphic presentation of data using Computers (Excel).

Unit 2: Measures of Central Tendency:

Characteristics of measures of Central Tendency-Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode, Deciles, Percentiles, (Problems only)

Unit 3: Measures of dispersion and Skewness:

Properties of dispersion-Range-Quartile Deviation –Mean Deviation-Standard Deviation-Coefficient of Variation-Skewness definition-Karl Pearson's and Bowley's Measures of skewness-Normal Distribution.

Unit 4: Measures of Relation:

Meaning and use of correlation – Types of correlation-Karlpearson's correlation coefficient – Spearman's Rank correlation-probable error- Calculation of Correlation by Using Computers

Unit 5: Index Numbers:

Index Numbers-Methods of Construction of Index Numbers – Price Index Numbers – Tests of Adequacy of Index Numbers – Cost of Index Numbers. (Problems only)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

III SEMESTER

Programming IN C

Unit- I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. **Introduction to C:** 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 – Go to Statement.

Unit- III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays –Operations on Two Dimensional Arrays, **Strings:** Introduction String and Character functions.

Unit- IV

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function.

Unit-V

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function. **Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions - Unions – Enumerated Data Types.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2019-2020

IV SEMESTER

Semester - IV

DSC ID 4.1- Accounting for Service Organizations

Unit-I: Non-Trading/ Service Organizations

Non profit entities-Features of nonprofit entities-Accounting process-Preparation of summaries – Receipt and payment account – Meaning and special features – Procedure of preparation – Uses and Limitations.

Income and expenditure account – Features – Procedure for preparation – Preparation of Balance Sheet **(Problems only)**

Unit – II Single Entry or Accounts from Incomplete Records:

Single Entry - Features-Books and accounts maintained-Recording of transactions-Ascertainment of Profit.(Statement of Affairs method only). **(Problems only)**

Unit – III - Bank Accounts

Bank Accounts – Books and Registers to be maintained by Banks – Slip System of Posting – Rebate on bills discounted – Schedule of advances – Non forming assets –Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts. **(Problems only)**

Unit-IV: Insurance Companies

Life Insurance Companies –Preparation of Revenue Account, Balance Sheet (including problems) – LIC Act, 1956.

Unit – V - Insurance Claims for Loss of Stocks only

Fire loss claims - Claims for loss of goods - Average clause - Steps calculation. **(Problems only)**

Semester - V

DSC - 1E 5.1 Cost Accounting

Unit-I:Introduction: Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.

Unit-II: Elements of Cost: Materials: Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, (problems only).

Unit-III: Labour: Labour: Control of labor costs – Methods of remuneration – labour incentives schemes – Time rate halsey plan, Rowan plan , piece rate- F.W Taylor and Merrick multiple piece rate method (problems only)

Unit-IV: Methods of Costing: Job costing And contract costing – (problems only).

Unit -V: Marginal costing : Marginal Costing – BEP,P/V ratio, Margin of safety (problems only)

References:

1. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
2. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
3. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
4. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
5. S.N .Maheswari – Principles of Management Accounting.
6. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
7. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.

DSC 2E 5.2 ADVANCED ACCOUNTING –I

UNIT-I:- Self –balancing System:

Meaning, Advantages of self balancing system- preparation of sales ledger adjustment account, purchase ledger adjustment account and General ledger adjustment account. (Problems only)

Unit –II:- Royalty

Royalties- preparation of minimum rent account, Royalties account, short working accounts and Land lord account (Problems only)

UNIT – III :- Insolvency Accounting

Insolvency of an Individual- Preparation of statement of affairs, and deficiency account. (problems only)

UNIT – IV:- Partnership Accounts-I

Nature- deed- Types of Capital accounts (Fixed and fluctuating), Calculation of goodwill, Revaluation of assets and liabilities of firm- Admission of a partner (problems only)

UNIT-V:- Partnership Accounts-II

Retirement of a partner- Death of a partner- Dissolution of a partnership firm- Garner Vs Murray Case (problems only)

Reference Books:

1. Advanced Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons
2. Corporate Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons
3. Accountancy-I- S.P.Jain and K.L.Narang, Kalyani Publications
4. Advanced Accountancy- M.C.Shukla and T.S. Grewal, Sultan Chand & Sons

DSC 3E 5.3 Commercial Geography

Unit –I: The Earth: Internal structure of the Earth – Latitude – Longitude – Realms of the Earth – Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.

Unit -II: India – Agriculture: Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.

Unit -III: India – Forestry: Forests – Status of Forests in Andhra Pradesh – Forest (Conservation) Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.

Unit -IV: India – Minerals and Mining: Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites - District-wise Profile.

Unit-V: India – Water Resources – Rivers: Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers - Experience of India and Andhra Pradesh.

References:

1. Shabiar Ahmad; Quazi ,Natural Resource Consumption and Environment Management, APH Publishing Corporation.
2. Tarachand, Economic and Commercial Geography of India, Vikas Publishing House.
3. Dr. S. Sankaran, Commercial Geography, Margam Publications, Chennai.
4. C. B. Memoria, Commercial Geography, Lal Agarwal & Co.

DSC 4E 5.4 GOODS & SERVICE TAX FUNDAMENTALS-I

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 – Models of GST: Austrian, Canadian, Kelkar-Shah – Bagchi-Poddar - 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.

References:

1. Goods and Services Tax in India – Notifications on different dates.
 2. GST Bill 2012.
 3. Background Material on Model GST Law, Sahitya Bhawan Publications, Hospital Road, Agra - 282 003.
 4. The Central Goods and Services Tax Act, 2017, NO. 12 OF 2017 Published by Authority, Ministry of Law and Justice, New Delhi, the 12thApril, 2017.
-

Database Management System

Unit-I

Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II

File-Based System, Drawbacks of File-Based System , DBMS Approach, Advantages of DBMS, Data Models Components of Database System, Database Architecture, DBMS Vendors and their Products.

Unit-III

Entity–Relationship Model: Introduction, The Building Blocks of an Entity–Relationship, Classification of Entity Sets , Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, aggregation and composition, CODD’S Rules, Relational Data Model, Concept of, Relational Integrity.

Unit-IV

Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

Unit –V

PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements ,Data Types, Control Structure,, Steps to Create a PL/SQL Program, Iterative Control ,Cursors , Steps to Create a Cursor, Procedure, Function, Exceptions Handling.

Text Books:

1. S.Sumathi, S. Esakkirajan, Fundamentals of Relational Database Management Systems
2. Ivan Bayross, SQL, PL/SQL, The programming language of Oracle, BPB Publications

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. Bipin C. Desai, “An Introduction to Database Systems”, Galgotia Publications.
3. Korth, Database Management systems.
4. Navathe, Database Management systems.

Web Technology

Unit-I

HTML: Basic HTML, Document body, Text, Hyper links, adding more formatting, Lists, Tables using images. **More HTML:** Multimedia objects, Frames, Forms towards interactive, HTML document heading detail.

Unit-II

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit-III

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions. **Objects in JavaScript:** Data and objects in JavaScript, regular expressions, exception handling.

Unit-IV

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images.

Unit-V

XML: defining data for web applications, basic XML, document type definition, presenting XML, document object model. Web Services.

Text Books:

1. Web Technology, Chris Bates, Wiley publications

Reference books:

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
2. Black Book HTML 5.0
3. Complete reference HTML 5.0
4. Web Technology, PHI Publications.

SEMESTER –VI

DSC 1F 6.1 GOODS AND SERVICE ACT & CUSTOMER ACT-II

Unit-I: Registration and Filing–Registration of Assesses Under GST - Persons liable for registration - Compulsory registration in certain cases - Procedure for registration - Deemed registration - GST Rate Structure.

Unit-II: Administration: Officers under GST Act: Appointment and Powers of officers- Administration of officers of State tax or Union-territory tax – Accounts and Records – Retention of Records – Audit by Tax Authorities.

Unit-III: Assessment: Self-assessment - Provisional assessment –Security of Returns - Assessment of Non-filers of returns - Assessment of Unregistered persons –Audit and Assessment – Other features of Dual GST model.

Unit-IV: Levy and Exemption of Tax:Chargeability – Collection at Source –E-Commerce - Composition Levy - Tax under Central GST and State GST - Zero-rating of Exports – GST on Imports –Returns under GST –Taxation of Services–Remission of Tax - Adjustment and Refund of GST.

Unit- V: Customs Act: Types of Custom Duties- Valuation for Customs Duty- Tariff Value- Customs Value- Methods of Valuation for Customs - Problems on Custom Duty Assessment.

References:

1. Goods and Services Tax in India – Notifications on different dates
2. Customs Law Manual and Customs Tariff of India- R K Jain.
3. Background Material on Model GST Law, Sahitya Bhawan Publications, Hospital Road, Agra - 282 003.
4. The Central Goods and Services Tax Act, 2017, NO. 12 OF 2017 Published by Authority, Ministry of Law and Justice, New Delhi, the 12th April, 2017.

DSC 2F 6.2 AUDITING

Unit-I: Auditing: Meaning – Objectives – Importance of Auditing – Auditing as a Vigil Mechanism – Role of Auditor in checking corporate frauds.

Unit-II: Types of Audit: Based on Ownership and time - Independent, Financial, Internal, Cost, Tax, Government, Secretarial audits.

Unit-III: Planning of Audit: Steps to be taken at the commencement of a new audit - Audit programme - Audit note book - Internal check, internal audit and internal control.

Unit-IV: Vouching and Investigation: Vouching of cash and trading transactions - Investigation, Auditing vs. Investigation

Unit-V: Company Audit and Auditors Report: Auditor's Qualifications – Appointment and Reappointment – Rights, duties, liabilities and disqualifications - Audit report: Contents – Preparation - Relevant Provisions of Companies Act, 2013.

References:

1. S.Vengadamani, "Practical Auditing", Margham Publications, Chennai.
2. Ghatalia, "Principles of Auditing", Allied Publishers Pvt. Ltd., New Delhi.
3. Pradeesh Kumar, Baldev Sachdeva & Jagwant Singh, "Auditing Theory and Practice, Kalyani Publications, Ludhiana.
4. N.D. Kapoor, "Auditing", S. Chand, New Delhi.
5. R.G. Saxena, "Principles and Practice of Auditing", Himalaya Publishing House, New Delhi.
6. Jagadesh Prakesh, "Principles and Practices of Auditing" Kalyani Publications, Ludhiana.
7. Kamal Gupta and Ashok Gupta, "Fundamentals of Auditing", Tata McGraw Hill
8. B.N. Tondan, "Practical Auditing", S.Chand, New Delhi.

DSC 3F 6.3 MANAGEMENT ACCOUNTING

Unit–I: Management Accounting: Interface with Financial Accounting and Cost Accounting - Financial Statement analysis and interpretation: Comparative analysis – Common size analysis and trend analysis (including problems).

Unit–II: Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, activity and solvency ratios (including problems).

Unit–III: Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).

Unit–IV: Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement - Uses and limitations of cash flow analysis (including problems).

Unit–V: Standard Cost: Material variance only (including Problems).

References:

1. S.N. Maheswari, A Textbook of Accounting for Management, S. Chand Publishing, New Delhi.
2. I.M Pandey, "Management Accounting", Vikas Publishing House, New Delhi,
3. Shashi K. Gupta & R.K. Sharma, "Management Accounting: Principles and Practice", Kalyani Publishers, Ludhiana.
4. Jawahar Lal, Accounting for Management, Himalaya Publishing House, New Delhi.
5. Charles T. Horngren, [et.al.](#), "Introduction to Management Accounting" Person EducationIndia, New Delhi, 2002.
6. Murthy & Guruswamy – Management Accounting, Tata McGraw Hill, New Delhi.
7. Dr. Kulsreshtha & Gupta – Practical problems in Management Accounting.
8. Bhattacharya, D., "Management Accounting", Pearson Education India, New Delhi.
9. S.P. Gupta – Management Accounting, S. Chand Publishing, New Delhi.

DSC 4F 6.4 ADVANCED ACCOUNTING-II

UNIT-I:- Hire purchase – installment purchase accounting

Hire Purchase system- Calculation of interest- Accounting procedure for preparation of Hire Purchase Accounts – Installment purchase system (problems only)

UNIT-II:- Branch Accounts:

Branch Accounting- Debtors system- stock and debtors system- invoice price method (excluding independent and foreign branch). (problems only)

UNIT-III:- Internal Reconstruction:

Meaning- Reasons and factors for reconstruction procedure for capital reduction- preparation of post reconstruction balance sheet and capital reduction account (excluding surrender of shares) (problems only)

UNIT-IV:- Liquidation:

Meaning – liquidation expenses- Liquidator’s remuneration – preparation of Liquidator’s final statement of account (problems only)

UNIT-V:- Profits Prior to Incorporation of Company:

Profits prior to incorporation of Company- Accounting treatment (problems only)

Reference Books:

- 1.Advanced Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons
- 2.Corporate Accounting- R.L.Gupta and M.Radha Swamy, Sultan Chand & Sons
- 3.Accountancy-I- S.P.Jain and K.L.Narang, Kalyani Publications
- 4.Advanced Accountancy- M.C.Shukla and T.S. Grewal, Sultan Chand & Sons

E-COMMERCE

Unit-I

Electronic Commerce Environment and Opportunities: Background, The Electronic Commerce Environment, Electronic Market place Technologies. **Mode of Electronic Commerce:** Electronic Data Interchange, Migration to Open EDI, Electronic Commerce with WWW/Internet, Commerce Net Advocacy, Web Commerce going forward.

Unit-II

Approaches to Safe Electronic Commerce: Secure Transport Protocols, Secure Transactions, Secure Electronic Payment Protocol (SEPP), Secure Electronic transaction (SET), Certificates for authentication Security on Web Servers and Enterprise Networks.

Unit-III

Electronic Cash and Electronic Payment Schemes: Internet Monetary Payment & Security Requirements, Payment and Purchase Order Process, On-line Electronic cash. **Internet / Intranet Security Issues and Solution:** The need for Computer Security, Specific Intruder Approaches, Security Strategies, Security Tools, Encryption, Enterprise Networking and Access to the Internet, Antivirus Programs, Security Teams.

Unit-IV

Master Card / Visa secure Electronic Transaction: Introduction, Business Requirements, Concepts, Payments Processing. **E-Mail and Secure E-Mail technologies for Electronic Commerce:** Introduction The Means of Distribution, A Model for Message Handling, E-Mail Handling, Multipurpose Internet Mail Extensions, Message Object Security Services, Comparisons of Security Methods, MIME and Related Facilities for EDI over the Internet.

Unit-V

Internet Resources for Commerce Introduction: Introduction, Technologies for Web Servers, Internet Tools Relevant to Commerce, Internet Applications for Commerce, Internet Charges, Internet Access and Architecture.

Text Books

Web Commerce Technology Handbook, by Daniel Minoli, Emma Minoli, McGraw-Hill

Reference Books

1. David Whiteley, "E-Commerce", Tata McGraw Hill, 2000.

PHP and My SQL

Unit-I: Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants.

Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output. **Working with Functions:** Defining Functions, Calling functions, returning the values from User- Defined Functions, Variable Scope, Saving State between Function calls with the Static statement, more about arguments.

Unit-II: Working with Arrays: Arrays, Creating Arrays, Some Array-Related Functions. **Working with Objects:** Creating Objects, Object Instance. **Working with Strings, Dates and Time:** Formatting Strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.

Unit-III: Working with Forms: Creating Forms, Accessing Form - Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads.

Unit-IV: Working with Files and Directories: Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories, Open Pipes to and from Process Using popen (), Running Commands with exec(), Running Commands with system () or passthru ().

Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input.

Unit-V: Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data.

PHP AND MY SQL LAB

MySQL Lab Cycle

Cycle -1:

An Enterprise wishes to maintain the details about his suppliers and other corresponding details.

For that he uses the following details.

Suppliers (sid: Integer, sname: string, address: string)

Parts (pid: Integer, pname: string, color: string)

Catalog (sid: integer, pid: integer, cost: real)

The catalog relation lists the prices charged for parts by suppliers.

Write the following queries in SQL:

1. Find the pnames of parts for which there is some supplier.
2. Find the snames of suppliers who supply every part.
3. Find the snames of supplier who supply every red part.
4. Find the pnames of parts supplied by London Supplier and by no one else.
5. Find the sid's of suppliers who charge more for some part than the average cost of that part.
6. For each part, find the sname of the supplier who charges the most for that part.
7. Find the sid's of suppliers who supply only red parts.
8. Find the sid's of suppliers who supply a red and a green part.
9. Find the sid's of suppliers who supply a red or green part.
10. Find the total amount has to pay for that supplier by part located from London.

Cycle –2

An organisation wishes to maintain the status about the working hours made by his employees.

For that he uses the following tables.

Emp (eid: integer, ename: string, age: integer, salary: real)

Works (eid: integer, did: integer, pct_time: integer)

Dept (did: integer, budget: real, managerid: integer)

An employee can work in more than one department; the pct_time field of the works relation shows the percentage of time that a given employee works in a given department.

Resolve the following queries.

1. Print the names and ages of each employee who works in both Hardware and Software departments.
2. For each department with more than 20 full time equivalent employees (i.e., where the part-time and full-time employees add up to at least that many full-time employees), print the did's together with the number of employees that work in that department.
3. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she work in.
4. Find the managerid's of managers who manage only departments with budgets greater than 1,000,000.
5. Find the enames of managers who manage the departments with largest budget.
6. If a manager manages more than one department, he or she controls the sum of all the budgets for those departments. Find the managerid's of managers who control more than 5,000,000.
7. Find the managerid's of managers who control the highest amount.
8. Find the average manager salary.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2019-2020

I SEMESTER

B.A./ B.Sc., COMPUTER APPLICATIONS
SYLLABUS

I YEAR I SEMESTER

Paper I: Fundamentals of Computers

Unit-I: Introduction to computer

What is Computer, Characteristics of Computers, Generations of Computers, Classification of Computers, Basic Computer Organization, and Applications of Computers.

Unit-II: Memory, Processor and I/O devices

Introduction, Memory Hierarchy, Processor Registers, Cache memory, Primary Memory, Secondary Storage Devices,
Input and Output Devices: Magnetic tapes, Floppy Disks, Hard Disks, Optical Disks, USB Flash Devices, Memory Cards, Mass Storage Devices.

UNIT-III: Computer Software

Introduction to Computer Software, Classification of Computer Software, System Software, Application Software, Firmware, Middleware, Acquiring Computer Software, Design and Implementations of Correct, Efficient and Maintainable Programs

UNIT-IV: Introduction to Operating System

Operating Systems: Introduction, Evolution of Operating Systems, Process Management, Memory Management, File Management, Device Management, Security Management, Command Interpreter, Popular Operating Systems

UNIT-V: Introduction to Algorithms and Programming Languages

Algorithm, Control Structures used in Algorithms, Some more Algorithms, Flowcharts, Pseudo code, Programming Languages, Categorization of High-Level Languages, Some Popular High-Level Languages, Factors affecting selection of Programming Language.

TEXT BOOKS:

1. Fundamentals of Computers By Reema Thareja from Oxford University Press

▲ **Reference Books:**

1. Peter Norton, Introduction to Computers, 6th Edition Tata McGraw Hill, 2008
2. Jacob Beckerman, How to build a Computer 2014-15 Learn, Select parts, Assemble, and Install: A step by step Guide to Your First Home Built.
3. Leon A and Leon M, Computers for Everyone, Leon Vikas, 2001.
4. Turban E, Rainer R K, and Potter RE, Introduction to Information Technology, Jhon Wiley & Sons, 2000.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2019-2020

II SEMESTER

I YEAR II SEMESTER

PAPER- II: OFFICE AUTOMATION TOOL

UNIT I

Office Automation: Introduction to automation, Need of automation, Word Processing, Basics of MS-Word, Text editing, Text formatting, working with header and footer, working with tables. **Graphics:** Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects, text in drawing. **Templates:** Template types, using templates, exploring templates, modifying templates. **Macros:** Macro, Recording macros, editing macros, running a macro. **Mail Merge:** Mail Merge concept, Main document, data sources, merging data source and main document. Overview of word menu options word basic tool bar.

UNIT II

MS Power Point: Introduction, Building a presentation, Outlining the presentation, Creating the text and chart slides, Formatting charts, customizing a presentation, drawing on slides, Creating slide shows
Creating Presentations : Using auto content wizard, Using blank presentation option, Using design template option, Adding slides, Deleting a slide, Importing Images from the outside world, Drawing in power point, Transition and build effects, Deleting a slide, Numbering a slide, Saving presentation, Closing presentation, Printing presentation elements.

UNIT III

Excel Basics: Overview of Excel features, Getting started, Creating a new worksheet, Selecting cells, Entering and editing text, Entering and editing Numbers, entering and editing Formulas, Referencing cells, moving cells, copying cells, sorting cell data, inserting rows, inserting columns, Inserting cells, Deleting parts of a worksheet, clearing parts of a worksheet.
Formatting: Page setup, changing column widths and Row heights, auto format, changing font sizes and Attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns.

UNIT IV

Introduction to functions: Parts of a functions, Functions Requiring Add-ins, The Function Wizard. Examples functions by category: Data and time functions, Engineering functions, Math and Trig functions, Statistical functions, Text functions.

Excel Charts: Chart parts and terminology, Instant charts with the chard wizard, creation of different types of charts, printing charts, deleting charts – Linking in Excel

Excel Graphics: Creating and placing graphic objects, Resizing Graphics, Drawing Lines and Shapes

UNIT V

MS Access

Creating a Simple Database and Tables: Creating a contact Databases with the wiz, The Access Table Wizard, Creating Database Tables without the wizard, Field Names, Data Types and Properties, Adding, deleting fields, renaming the fields in a table. **Forms:** The Form Wizard, Saving Forms, Modifying Forms

Entering and Editing Data: Adding Records, Duplicating previous entries without Retyping, Undo, Correcting Entries, Global Replacements, Moving from Record to Record in a table.

Finding, Sorting and Displaying Data: Queries and Dynasets, Creating and using select queries, Returning to the Query Design, Multilevel Sorts, Finding incomplete matches, Showing All Records after a Query, Saving Queries, Crosstab Queries, Report Generation.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2019-2020

III SEMESTER

II YEAR III SEMESTER

PAPER- III: NETWORKS AND INTERNET FOUNDATION

UNIT I

Introduction to Network, advantages and disadvantages of network , Types of Networks – Network topologies, Types of topologies- Connecting Devices – Hubs, Repeaters, Bridges, Routers, Network Interface Cards (NIC) and Switches – Network Operating system - analog and digital signal, analog and digital signal transmission.

UNIT II

Introduction to Network Communication Model- Network Architecture –Application Layer, Presentation Layer, Session Layer, transport Layer, Network Layer, Data-link Layer, Physical Layer.

UNIT III

Introduction to Protocols, TCP/IP Protocol- Protocols and their classification –Address Resolution Protocol(ARP) , Reverse Address Resolution Protocols (RARP) , SMTP, MIME, IMAP, POP, ICMP, HTTP.

UNIT IV

Overview of Internet, revolution of Internet , Internet service providers (ISP) –setting windows environment for dial up networking, search engine, searching web using search engines – audio on internet – newsgroup – subscribing to news groups.

UNIT V

Intranet concepts and architecture, building corporate world wide web protocol, Internet infrastructure, Internet Security design - intranet as business tools, future of intranet.

Bluetooth and other wireless networks.- configuring wireless networks- Security – virus and antivirus, configuring firewalls.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2019-2020

IV SEMESTER

II YEAR IV SEMESTER

Paper – IV: Programming IN C

Unit- I: Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. **Introduction to C:** 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 – Go to Statement.

Unit- III: Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays –Operations on Two Dimensional Arrays, **Strings:** Introduction String and Character functions.

Unit- IV: Functions: Introduction – using functions – Function declaration / prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function.

Unit-V: Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function. **Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions - Unions – Enumerated Data Types.

BI YEAR V SEMESTER

PAPER – V: DATABASE MANAGEMENT SYSTEMS

UNIT – I:

Database system applications, Database system vs File system, **Views of data:** Data abstraction, Instances and schemas. **Database languages:** DDI, DML. Database users and administrators, Transaction management, **Database system structure:** Storage manager, Query processor.

UNIT – II:

Database design and ER diagrams: Beyond ER design entities, attributes and entity sets, Relationships and relationship sets, additional features of ER model, Concept design with ER model, Conceptual design for large enterprises.

Relational model: Introduction to the relational model, integrity constraint over relations, enforcing integrity constraints, querying relational data, logical database design.

UNIT – III

Schema Refinement: decomposition, problems related to decomposition, FDS: Normalization, Basic normal forms and advanced normal forms.

UNIT – IV

Form of basic SQL query: Examples of basic SQL queries, introduction to nested queries, correlated nested queries set, comparison operators, aggregative operators, null values, comparison using null values, joins. **Views:** Destroying or altering tables and views.

UNIT – V

PL/SQL: Introduction to PL/SQL, structure of PL/SQL program, variables, constants, operators, conditional statements, constraints, procedures, functions.

PAPER – VI-A : ELECTRONIC COMMERCE (ELECTIVE)

Unit I

Electronic Commerce Environment and Opportunities: Background, The Electronic Commerce Environment, Electronic Market place Technologies. **Mode of Electronic Commerce:** Electronic Data Interchange, Migration to Open EDI, Electronic Commerce with WWW/Internet, Commerce Net Advocacy, Web Commerce going forward.

Unit II

Approaches to Safe Electronic Commerce: Secure Transport Protocols, Secure Transactions, Secure Electronic Payment Protocol (SEPP), Secure Electronic transaction (SET), Certificates for authentication Security on Web Servers and Enterprise Networks

Unit III

Electronic Cash and Electronic Payment Schemes: Internet Monetary Payment & Security Requirements, Payment and Purchase Order Process, On-line Electronic cash. **Internet / Intranet Security Issues and Solution:** The need for Computer Security, Specific Intruder Approaches, Security Strategies, Security Tools, Encryption, Enterprise Networking and Access to the Internet, Antivirus Programs, Security Teams.

Unit IV

Master Card / Visa secure Electronic Transaction: Introduction, Business Requirements, Concepts, Payments Processing. **E-Mail and Secure E-Mail technologies for Electronic Commerce:** Introduction The Means of Distribution, A Model for Message Handling, E-Mail Handling, Multipurpose Internet Mail Extensions, Message Object Security Services, Comparisons of Security Methods, MIME and Related Facilities for EDI over the Internet.

Unit V

Internet Resources for Commerce Introduction: Introduction, Technologies for Web Servers, Internet Tools Relevant to Commerce, Internet Applications for Commerce, Internet Charges, Internet Access and Architecture.

TEXT BOOK

Web Commerce Technology Handbook, by Daniel Minoli, Emma Minoli, McGraw-Hill

PAPER VI-B : CLOUD COMPUTING (ELECTIVE)

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, Map Reduce, 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.

UNIT III

Cloud Application Design: Introduction, Design Considerations for Cloud Applications, Reference Architecture for Cloud Applications, Cloud Application 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.

TEXT BOOK:

1. Cloud Computing A Hands On Approach By Arshdeep Bahga And Vijay Madisetti
From University Press.

BI YEAR VI SEMESTER
PAPER – VII
WEBTECHNOLOGIES

UNIT I

HTML: Basic HTML, Document body, Text, Hyper links, adding more formatting, Lists, Tables using images. More HTML: Multimedia objects, Frames, Forms towards interactive, HTML document heading detail.

UNIT II

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

UNIT III

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions. Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling

UNIT IV

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images,

UNIT V

XML: defining data for web applications, basic XML, document type definition, presenting XML, document object model. Web Services

TEXT BOOKS

1. Web Technologies by A.A.Puntambekar from Technical Publications, Pune

REFERENCE BOOKS

1. INTERNET AND WEB TECHNOLOGIES - Rajkamal, TMH.
2. TCP/IP PROTOCOL SUITE - Behrouz A. Forouzan, 3rd edition, TMH.

CLUSTER ELECTIVE
PAPER- VIII-A1 - DESKTOP PUBLISHING TECHNOLOGIES

UNIT I

Basics of Desktop Publishing: what is DTP? – Letterpress Printing – Wooden Types and Metal Types, Hot Metal Types, Printing Photographs - Offset Printing- Gravure – Hardware requirements – Software Requirements – DTP Operator’s Arsenal – Test Editors, word Processors, Vector Illustration Applications or drawing Applications, Bitmap Image Editing Application, Page Layout applications - Scanning –Printing –Monitor – briefly Input and Output Devices – Vector graphics and Raster graphics .

UNIT II

Fonts – Font Styles, Serif and Sans Serif, Dimensions of font , Fixed pitch fonts and proportional spaced fonts, scaling tracking, kerning, leading and ligatures, fonts in your computer, vector fonts and bitmapped fonts - character level and Paragraph level formatting – Drop Caps – Hyphenations – Alignments –Indentation – Single side and Double Side Documents –Headers and Footers – Selecting the text and graphics – Graphic file formats – screen colors (RGB) and Printer colors (CMYK) –Spot colors and Process Colors – Color Separations – Colour Half-tone images - Generic Process of Desktop Publishing.

UNIT – III

PhotoShop7: Introduction – Parts of Page shop window - Open, Save, Close and Create a Image – Using Toolbox – Tool Options bar – Using layers – Layers palette, adding new layer, Hiding layer, Renaming layer, Remove layer, Merge layer, copy and paste with image – Fascinating colors – Color models, Color Picker, Color palette, Swatches Palette, ICC – Inserting text in images – printing images – filters to improve images .

UNIT – IV

Page Maker7: Introduction of Page Maker- starting of Page Maker – Creating a new publication in Page Maker – Dialog Boxes Document and setup and Save Publication – Close the publication – Text Blocks- drawing a text block by dragging the Mouse cursor, Empty Text block by a Mouse Click.

UNIT V

Fitting text Blocks on a page, Inserting pages while placing Text – Handling Pages – Inserting, Deleting and go to the desired pages – using the Toolbox – Using the Tool Bars – Importing text & Pictures – wrapping text around the pictures – Character level formatting – Opening Multiple Publication windows – Using story editor-Using Styles – Pre-defined styles, new style – Using the Document Master Pages – Sample Publication.

TEXT BOOK

1. Rapidex DTP Course by Shirish Chavan, Unicorn Books Pvt. Ltd., Edition 2005

REFERENCE BOOK

2. DeskTop Publishing English Edition By Ashish Joshi, Jigisha Raval, Pragnesh Patel, Computer world Publications,

**CLUSTER ELECTIVE
PAPER –VIII -A2 - MULTIMEDIA SYSTEMS**

UNIT II

What is Multimedia?: Definition – Where to use Multimedia – Delivering Multimedia
Text- The Power of Meaning – About Fonts and Faces – Using Text in Multimedia-
Computers and Text – Font Editing and Design Tools – Hyper Media and Hyper Text

UNIT II

Images: Before you Start to Create – Making Still Images – Color – Image File Formats
Sound – The Power of Sound – Digital Audio – MIDI Audio – MIDI vs Digital Audio –
Multimedia System Sounds – Audio File Formats.

UNIT III

Video: Using Video - How Video Works and is Displayed - Digital Video Containers -
Obtaining Video Clips - Shooting and Editing Video

Making Multimedia: The Stages of a Multimedia Project - What You Need: The
Intangibles- What You Need: Hardware - What You Need: Software - What You Need:
Authoring Systems

UNIT IV

Planning and Costing: The Process of Making Multimedia – Scheduling -Estimating - RFPs
and Bid Proposals

Designing and Producing: Designing - Producing

UNIT V

The Internet and Multimedia: Internet History - Internetworking – Multimedia on the Web
Designing for the World Wide Web: Developing for the Web - Text for the Web -Images
for the Web - Sound for the Web - Animation for the Web - Video for the Web

TEXT BOOK

1. Multimedia: Making It Work, Tay Vaughan, 8th Edition, Tara Mc-Graw Hill.

REFERENCE BOOKS

1. Multimedia Systems, John F.Koegel Buford, Pearson edition, 2003
2. Ranjan Parekh, Principles of Multimedia, TMH, 2006.Engineering Evaluation Software
3. Multimedia: Computing, Communication and applications, Ralf Steinmetz and Klara
Nahrstedt, Pearson Edition, 2001

CLUSTER ELECTIVE
PAPER –VIII –A3 - PHP and My SQL

Unit-I: Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants.

Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.

Working with Functions: Defining Functions, Calling functions, returning the values from User- Defined Functions, Variable Scope, Saving State between Function calls with the Static statement, more about arguments.

Unit-II: Working with Arrays: Arrays, Creating Arrays, Some Array-Related Functions.

Working with Objects: Creating Objects, Object Instance. **Working with Strings, Dates**

and Time: Formatting Strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.

Unit-III: Working with Forms: Creating Forms, Accessing Form - Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads.

Unit-IV: Working with Files and Directories: Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File, Working with Directories, Open Pipes to and from Process Using popen (), Running Commands with exec(), Running Commands with system () or passthru ().

Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input.

Unit-V: Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data.

References:

1. Julie C. Meloni, PHP MySQL and Apache, SAMS Teach Yourself, Pearson Education (2007).
2. Xue Bai Michael Ekedahl, The Web Warrior Guide to Web Programming, Thomson (2006)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF BIOCHEMISTRY

SYLLABUS 2019-2020

I SEMESTER

**B.Sc - BIOCHEMISTRY (CBCS) SYLLABUS
SEMESTER- I**

Paper I : Biomolecules

Unit – I : Biophysical Concepts 12 hours

Water as a biological solvent and its role in biological processes. Biological relevance of pH, measurement of pH, pKa of functional groups in biopolymers such as proteins and nucleic acids. Importance of buffers in biological systems, ion selective electrodes, and oxygen electrode. Donnan membrane equilibrium. Significance of osmotic pressure in biological systems.

Unit – II : 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), trisaccharides (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 – III 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, sphingolipids and cholesterol. Prostaglandins- structure and biological role of PGD₂, PGE₂ and PGF₂ α. Lipoproteins: Types and functions Biomembranes: Behavior of amphipathic lipids in water- formation of micelles, bilayers, vesicles, liposomes. Membrane composition and organization – Fluid mosaic model.

Unit-IV : Amino Acids and Peptides 12 hours

Amino Acids: Classification, structure, stereochemistry, chemical reactions of amino acids due to carbonyl and amino groups. Titration curve of glycine and pK values. Essential and non-essential amino acids, non-protein amino acids. Peptide bond - nature and conformation. Naturally occurring peptides – glutathione, enkephalin.

Unit-V : 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



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF BIOCHEMISTRY

SYLLABUS 2019-2020

II SEMESTER

Semester-II

Paper-II Nucleic acids and Biochemical Techniques

Unit-I : Nucleic Acids 12 hours

Nature of nucleic acids. 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, introduction to circular DNA, super coiling, helix to random coil transition, denaturation of nucleic acids hyper chromic effect, T_m -values and their significance. Reassociation kinetics, cot curves and their significance. Types of RNA and DNA.

Unit-II: Porphyrins 9 hours

Structure of porphyrins; Protoporphyrin, porphobilinogen properties Identification of Porphyrins. Structure of metalloporphyrins – Heme, cytochromes and chlorophylls.

Unit-III: Biochemical Techniques I 15 hours

Methods of tissue homogenization: (Potter-Elvehjem, mechanical blender, sonicator and enzymatic). Principle and applications of centrifugation techniques- differential, density gradient. Ultracentrifugation-preparative and analytical. Principle and applications of chromatographic techniques- paper, thin layer, gel filtration, ionexchange and affinity chromatography. Elementary treatment of an enzyme purification. Electrophoresis- principles and applications of paper, polyacrylamide (native and SDS) and agarose gel electrophoresis.

Unit-IV: Biochemical Techniques II 12 hours

Colorimetry and Spectrophotometry- Laws of light absorption- Beer-Lambert law. UV and visible absorption spectra, molar extinction coefficient, biochemical applications of spectrophotometer. Principle of fluorimetry. Tracer techniques: Radio isotopes, units of radio activity, half life, β and γ - emitters, use of radioactive isotopes in biology.

Unit- V : Techniques employed in metabolic studies 12 hours

Broad outlines of Intermediary metabolism, methods of investigation, Intermediary metabolism in vivo studies such as analysis of excretion, Respiratory exchange, Removal of organs and perfusion studies, in vitro studies such as tissue slice techniques; Homogenates and purified enzyme systems; isotope tracer studies, use of inhibitors and antimetabolites.

Practical - 2 : Nucleic acids and Biochemical Techniques 45 hrs

Semester-V
Paper – V : Physiology, Clinical Biochemistry and Immunology

Unit-I : Physiology 12 hours

Digestion and absorption of carbohydrates, lipids and proteins. Composition of blood and coagulation of blood. Hemoglobin and transport of gases in blood (oxygen and CO₂). Muscle- kinds of muscles and mechanism of muscle contraction.

Unit II: Endocrinology 12 hours

Endocrinology- organization of endocrine system. Classification of hormones. Outlines of chemistry, physiological role and disorders of hormones of thyroid, parathyroid, pituitary and hypothalamus. Introduction of gastro intestinal hormones. Mechanism of hormonal action signal transduction pathways for gluco corticoids and insulin. Adrenalin, estrogen and progesterone.

Unit- III : Nutritional Biochemistry 12 hours

Balanced diet. Calorific values of foods and their determination by bomb calorimeter. BMR and factors 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. Malnutrition- Kwashiorkar, Marasmus and PEM. Vitamins- sources, structure, biochemical roles, deficiency disorders of water and fat soluble vitamins. Introduction to nutraceutical and functional foods. Bulk and trace elements-Ca, Mg, Fe, I, Cu, Mo, Zn, Se and F. Obesity and starvation.

Unit- IV : Clinical Biochemistry 12 hours

Plasma proteins in health and disease. Disorders of blood coagulation (haemophilia). Types of anemias, haemoglobinopathies-sickle cell anemia. Liver diseases-jaundice. Liver function tests- conjugated and total bilirubin in serum, albumin: globulin ratio, Serum enzymes in liver diseases- SGPT, GGT and alkaline phosphatase. Kidneys-structure of nephron, urine formation, normal and abnormal constituents of urine. Biological buffers. Role of kidneys in maintaining acid-base and electrolyte balance in the body. Renal function test- creatinine.

Unit- V : Immunology 12 hours

Organization of immune system. Organs and cells of immune system. Innate and acquired immunity. Cell mediated and humoral immunity (T- and B- cells). Classification of

immunoglobulins, structure of IgG. Epitopes / antigenic determinants. Concept of haptens. Adjuvants. Monoclonal antibodies. Antigen-antibody reactions- agglutination, immunoprecipitation, immunodiffusion. Blood group antigens. Immunodiagnostics- ELISA. Vaccines and their classification. Traditional vaccines-live and attenuated. Modern vaccines-recombinant and peptide vaccines. Outlines of hypersensitivity reactions.

Practical-5: Nutritional and Clinical Biochemistry

List of Experiments: 45 hrs

1. Estimation of calcium by titrimetry
2. Estimation of iron by Wong's method.
3. Estimation of vitamin C by 2, 6 -dichlorophenol indophenol method.
4. Determination of iodine value of an oil.
5. Estimation of hemoglobin in blood.
6. Total count - RBC and WBC. Differential count.
7. Determination of blood group and Rh typing.
8. Visualization of antigen antibody reactions (Ouchterlony technique).
9. Urine analysis for albumin, sugars and ketone bodies.
10. Estimation of urinary creatinine.
11. Estimation of blood Glucose.
12. Estimation of serum total cholesterol.

SEMESTER V
Paper – VI(A): Basic Microbiology (Elective-1)

Unit –I : History of Development of Microbiology 12hrs

Development of microbiology as a discipline, Spontaneous generation vs. biogenesis. Contributions of Anton von Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Alexander Fleming. Role of microorganisms in fermentation, Germ theory of disease, Development of various microbiological techniques. Establishment of fields of medical microbiology and immunology through the work of Paul Ehrlich, Elie Metchnikoff, Edward Jenner

Unit-II: Diversity of Microbial world 12hrs

Binomial Nomenclature, Whittaker's five kingdom and Carl Woese's three kingdom classification systems and their utility. Difference between prokaryotic and eukaryotic microorganisms. General characteristics of different groups: acellular microorganisms (Viruses, Viroids, Prions) and Cellular microorganisms (Bacteria, Algae, Fungi and Protozoa) with emphasis on distribution and occurrence and mode of reproduction.

Unit-III : Viruses, Bacteria and Protozoa 12hrs

An introduction to viruses with special reference to the structure and replication of the following: Poxvirus and Poliovirus. Bacterial Diseases- Cholera and Typhoid. TMV and T4 . Protozoan Diseases- Amebiasis and Malaria.

Unit- IV: Algae 12hrs

History of phycology; General characteristics of algae: occurrence, thallus organization, algae cell ultra structure, pigments, flagella, eyespot food reserves and vegetative, asexual and sexual reproduction. Applications of Algae in agriculture, industry, environment and food.

Unit- V: Fungi 12hrs

General characteristics of fungi - habitat, distribution, nutritional requirements, fungal cell ultra- structure, thallus organization and aggregation, fungal wall structure and synthesis, asexual reproduction, sexual reproduction, heterokaryosis, heterothallism and parasexual mechanism. Economic Importance of Fungi in Agriculture, environment, Industry, medicine, food, biodeterioration, mycotoxins

ELECTIVE PRACTICAL- 6A: BASIC MICROBIOLOGY

List of Experiments:

1. Microbiology Laboratory Practices and Bio safety.
2. To study the principle and applications of important instruments (biological safety cabinets, autoclave, incubator, BOD incubator, hot air oven, light microscope, pH meter)
3. Preparation and sterilization of culture media for bacterial cultivation
4. Study of different shapes of bacteria, fungi, algae, protozoa using permanent slides/pictographs
5. Staining of bacteria using Gram stain
6. Isolation of pure cultures of bacteria by streaking method.
7. Estimation of CFU count.

SUGGESTED READINGS

1. Atlas RM. (1997). Principles of Microbiology. 2nd edition. W M.T.Brown Publishers.
2. Pelczar MJ, Chan ECS and Krieg NR. (1993). Microbiology. 5th edition. McGraw Hill Book Company

SEMESTER V

Paper – VI(B) : Molecular Basis of Infectious Diseases (Elective-2)

Unit-I : Classification of infectious agents 12 hrs

Bacteria, Viruses, protozoa and fungi. Past and present emerging and re-emerging infectious diseases and pathogens. Source, reservoir and transmission of pathogens, Antigenic shift and antigenic drift. Host parasite relationship, types of infections associated with parasitic organisms. Overview of viral and bacterial pathogenesis. Infection and evasion.

Unit-II: Overview of diseases caused by bacteria 12 hrs

Detailed study of tuberculosis: History, causative agent, molecular basis of host specificity, infection and pathogenicity, Diagnostics, Therapeutics, inhibitors and vaccines. Drug resistance and implications on public health. Other bacterial diseases including Typhoid, Diphtheria, Pertussis, Tetanus and Pneumonia.

Unit –III: Overview of diseases caused by Viruses 12 hrs

Detailed study of AIDS, history, causative agent, pathogenesis, Diagnostics, Drugs and inhibitors. Other viral diseases including hepatitis, influenza, rabies, chikungunya and polio.

Unit-IV: Overview of diseases caused by Parasites 12 hrs

Detailed study of Malaria, history, causative agents, Vectors, life cycle, Host parasite interactions, Diagnostics, Drugs and Inhibitors, Resistance, Vaccine development. Other diseases including leishmaniasis, amoebiasis.

Unit-V: Overview of diseases caused by other organisms 12 hrs

Fungal diseases, General characteristics. Medical importance of major groups, pathogenesis, treatment.

Elective Practical -6B: MOLECULAR BASIS OF INFECTIOUS DISEASES 45 hrs 3 periods/ Week

List of Experiments:

Semester – VI
Paper – VII : Microbiology and Molecular Biology

Unit- I : Microbiology 12hours

Introduction to brief history of microbiology. Classification of microorganisms- prokaryotic and eukaryotic microorganisms. Isolation and cultivation of bacteria. Selective media and enriched media. Bacterial growth curve and kinetics of growth. Gram's staining- Gram positive and Gram negative bacteria, motility and sporulation. Structure and composition of viruses. Isolation and cultivation of bacterial plaques. Lytic and lysogenic life cycle of λ phage. Retro viruses- HIV.

Unit II-Applied Biochemistry 12 hours

Fermentation Technology: Batch, continuous culture techniques, principle types of fermentors. Industrial production of chemicals- alcohol, acids (citric acid), solvents (acetone), antibiotics (penicillin), Enzyme Technology: Immobilization of enzymes and cells, different methods. Industrial applications. Production of transgenic plants and their applications. Introduction to Bioinformatics- definitions of proteomics and genomics. Gene bank, NCBI, DDBJ, Swissprot, PDB. Sequence alignments- BLAST and FASTA.

Unit- III : DNA Replication and Transcription 12 hours

Nature and structure of the gene. DNA replication- models of replication, Meselson-Stahl's experimental proof for semi-conservative model. DNA polymerases I, II and III of *E. coli*, helicase, topoisomerases, primase, ligase. Bidirectional replication model. Okazaki fragments, leading and lagging strands of DNA synthesis. Inhibitors of DNA replication. Transcription - RNA synthesis, RNA polymerases of prokaryotes. Promoters, Initiation- sigma factors and their recognition sites. Elongation- role of core enzyme. Termination- rho dependent and rho independent.

Unit- IV: Protein Synthesis and Regulation of Gene Expression 12 hours

Introduction to protein synthesis- Genetic code, deciphering of genetic code, Nirenberg's and Khorana's experiments, wobble hypothesis, degeneracy of genetic code.

Protein synthesis- activation of amino acids (aminoacyl t-RNA synthetases). Ribosome structure. Initiation, elongation and termination of protein synthesis. Post- translational modifications signal hypothesis. Inhibitors of protein synthesis. Regulation of prokaryotic gene expression- induction and repression. Lac operon.

Unit- V: Recombinant DNA technology 12 hours

Outlines of cloning strategies. DNA sequencing- Maxam Gilbert and Sanger's methods. Tools of r-DNA technology: Enzymes- Restriction endonucleases, ligase, phosphatases, reverse transcriptase, polynucleotide kinases, terminal transferase nucleases-S1 and RNAase H.

Restriction mapping. Cloning vectors- Plasmid, Expression vector - Host- *E. coli*.

Construction of c-DNA and genomic libraries. Isolation and sequencing of cloned genes- colony hybridization, nucleic acid hybridization. Polymerase chain reaction- principle and applications. 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.

Practical- 7: Microbiology and Molecular Biology 45 hrs

List of Experiments:

1. Preparation of culture media and sterilization methods.
2. Isolation of pure cultures: (i) Streak plate method. (ii) Serial dilution method.
3. Gram staining.
4. Motility of bacteria by hanging drop method.
5. Antibiotic sensitivity by paper disc method.
6. Isolation of DNA from onion/liver/coconut endosperm.
7. Estimation of DNA by diphenylamine method.
8. Estimation of RNA by orcinol method..
9. Sequence alignments of insulin/BSA with other proteins using BLAST and FASTA.
10. Examination of milk quality by MBRT method.

Semester – VI
Cluster Elective : VIII-A

PAPER-VIII-A1 : NUTRITIONAL BIOCHEMISTRY

Unit-I: Nutrition & Diet

- 1.1 Introduction & definition-Foods and Nutrition
- 1.2 Principle food components, balanced diet
- 1.3 Nutritional requirement & recommended dietary allowance (RDA)
- 1.4 (BMR) Basal Metabolic Rate
- 1.5 Body Composition & Energy requirements

Unit-II: Proteins in Nutrition

- 2.1 Biological value of proteins
- 2.2 Protein calorie deficiencies
- 2.3 Kwashiorkor
- 2.4 Marasmus
- 2.5 Mal Nutrition

Unit-III: Mineral Nutrients

- 3.1 Micro Nutrients
- 3.2 Macro Nutrients
- 3.3 Dietary sources deficiency and recommended dietary allowances of calcium, phosphorus
& Iron
- 3.4 Dietary sources, deficiency and recommended dietary allowance of trace elements

Unit-IV: Vitamins

- 4.1 Fat soluble vitamins
- 4.2 Vitamin B, D, E & K

- 4.3 Water soluble vitamins
- 4.4 Vitamin-6 complex, Vitamin 5, Folic acid

Unit-V: Fatty Acids

- 5.1 Essential Fatty Acids
- 5.2 Energy value of fats
- 5.3 Phospholipids in Nutrition
- 5.4 Nutrition in pregnancy
- 5.5 Nutrition for Infants

Practicals:

- 1. Isolation of starch from Potatoes
- 2. Isolation of cash in from milk
- 3. Isolation of lactose
- 4. Acid value of lipids
- 5. Determination of fructose from honey
- 6. Determination of vitamin-C.

PAPER-VIII-A2 : CLINICAL BIOCHEMISTRY

UNIT – I: Basic Medical Laboratory Principles and Procedures:	10 Hours
1.1 Introduction to clinical biochemistry.	
1.2 Uses of Biochemical tests	
1.3 Specimen Collection and sample analysis, Reference values.	
1.4 Quality Control, Automation.	
UNIT – II: Clinical Biochemistry of carbohydrates, proteins & Lipids:	20 Hours
2.1 Regulation of Blood Sugar, Tests for Diabetes, Fasting Blood Glucose, PP.	
2.2 Glucose Tolerance Test, Glycosylated Hemoglobin.	
2.3 Determination of plasma proteins and its importance.	
2.4 General lipid Metabolism, functions and disorders of plasma lipoproteins.	
UNIT – III: Clinical Enzymology:	10 Hours
3.1 Plasma Enzymes in Diagnosis.	
3.2 Chemical significance, SGOT, SGPT, LDH, CK, ALP & Amylase.	
3.3 Enzymes in Diagnosis of Liver, Heart muscle disorders.	
UNIT – IV: Water & Mineral Metabolism and Acid-Base Balance:	10 Hours
4.1 Body fluid distribution (Electrolyte and water)	
4.2 Factors which influence the distribution of body water.	
4.3 Acid-Base balance in body, Acidosis and Alkalosis.	
4.4 Buffer systems in body to regulate acid-base balance.	
UNIT – V: Organ Function Tests:	10 Hours
5.1 Kidney function tests.	
5.2 Serum creatinine, Creatinine clearance.	
5.3 Liver function tests.	
5.4 Ischemic heart disease, Jaundice	
5.5 Gastric and pancreatic function tests.	

3. Determination of serum protein levels.
4. Assay of SGOT.
5. Assay of SGPT.
6. Determination of serum bilirubin.
7. Gastric analysis (demo with record).

Suggested Readings:

1. Park, K. (2007), preventive and social Medicine, B.B. Publishers.
2. Godkar P.B. and Godkar D.P. Textbook of medical laboratory technology, II Edition, Bhalani Publishing House.
3. Cheesbrough M., A laborator Manual for rural Tropical Hospitals, A Basis for Training Courses.
4. Guyton A.C. and Hall J.E. textbook of medical physiology.
5. Robbins and Cortan, Pathologic Basis of Disease, VIII Edition.
6. Prakash, G. (2012), Lab manual on Blood Analysis and Medical Diagnostics, S. Chand and Co. Ltd.

Paper: VIII-A3 : MEDICAL MICROBIOLOGY

Unit –I Microbial and Human Interactions:

Normal microbial population of healthy human body - Skin, mouth, upper respiratory tract, intestinal tract, urino-genital tract, eye.

Unit –II Harmful Microbial and Human Interactions :

Entry of pathogens into the host, types of bacterial pathogens, Mechanism of bacterial pathogenicity, colonization and growth, Virulence, Virulence factors – exotoxins, enterotoxins, endotoxins, neurotoxins

Unit –III General Account of Epidemiology:

Principles of epidemiology, Current epidemics (AIDS, Nosocomial, Acute respiratory Syndrome,) Measures for prevention of epidemics –Global health consideration, Emerging and reemerging infectious diseases Biological warfare and biological weapons.

Unit –IV Person to person Microbial disease:

Names of pathogen, disease symptoms, and preventive measures airborne transmission of diseases by airborne pathogens: Streptococcal diseases, Corynebacterium Diphtheria, and Whooping cough, Mycobacterium Tuberculosis Direct contact transmission of diseases: Staphylococcus, Hepatitis viruses. Sexually transmitted diseases: Gonorrhoea and syphilis

Unit –V Animal transmitted, Artropod transmitted, Soil borne and Water borne microbial diseases:

Animal transmitted disease: Rabies Artropod transmitted disease: Malaria Soil borne diseases: Tetanus Water borne microbial diseases: Cholera, Giardiasis,.

List of Experiments: Project work

SUGGESTED READINGS

- Park, K. (2007), Preventive and Social Medicine, B.B. Publishers
- Godkar P.B. and Godkar D.P. Textbook of Medical Laboratory Technology, II Edition, Bhalani Publishing House
- Cheesbrough M., A Laboratory Manual for Rural Tropical Hospitals, A Basis for Training Courses
- Guyton A.C. and Hall J.E. Textbook of Medical Physiology.
- Robbins and Cortan, Pathologic Basis of Disease, VIII Edition.
- Prakash, G. (2012), Lab Manual on Blood Analysis and Medical Diagnostics, S. Chand and Co. Ltd.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2019-2020

I SEMESTER

B.Sc., SEMESTER I

PAPER-I: MICROBIOLOGY AND CELL BIOLOGY

UNIT I

History, Development and Microscopy

History and development of microbiology: contributions of Louis Pasteur, Robert Koch and Edward Jenner. Microscopy: Compound microscopy: Numerical aperture and its importance, resolving power, oil immersion objectives and their significance, principles and applications of dark field, phase contrast, fluorescent microscopy. Electron microscopy: Principle, ray diagram and applications, TEM and SEM, comparison between optical and electron microscope, limitations of electron microscopy. Stains and staining procedures: Acidic, basic and neutral stains, Gram staining, Acid fast staining, Flagella staining, Endospore staining.

UNIT II

Bacteria: Bacterial morphology and subcellular structures, general morphology of bacteria, shapes and sizes, generalized diagram of typical bacterial cell. Slime layer and capsule, difference between the structure, function and the position of the two structures. Cell wall of gram +ve and Gram -ve cells. General account of flagella and fimbriae. Chromatin material, plasmids; definition and kind of plasmids (conjugative and non-conjugative) F, R, and Col plasmids. Endospores: Detailed study of endospore structure and its formation, germination, basis of resistance.

Viruses: General characteristics of viruses, difference between virus and typical microbial cell, structure, different shapes and symmetries with one example of each type, classification of viruses on the basis of nucleic acids, phage and animal cell viruses, example of each and their importance. Brief idea of lytic cycle and lysogeny.

UNIT III

Microbial Nutrition: Basic nutritional requirements: Basic idea of such nutrients as water, carbon, nitrogen, sulfur and vitamins etc., natural and synthetic media, nutritional classification of bacteria. Selective and Differential media, Enriched media, Enrichment media.

UNIT IV:

Microbial growth and control: Growth: Growth rate and generation time, details of growth curve and its various phases. Concept of synchronous cultures, continuous and batch cultures (chemostat and turbidostat). Measurement of growth. Physical conditions required for growth: Temperature (classification of microorganisms on the basis of temperature requirements), pH etc. Pure cultures and cultural characteristics. Maintenance of pure culture. Microbial Control: Terminologies - Sterilization, disinfection, antiseptic, sanitization, germicide, microbistasis, preservative and antimicrobial agents. Mechanism of cell injury: Damage to cell wall, cell membrane, denaturation of proteins, inhibition of protein synthesis, transcription, replication, other metabolic reactions and change in supercoiling of DNA. Physical methods of control: Temperature (moist heat, autoclave, dry heat, hot air oven and incinerators), desiccation, surface tension, osmotic pressure, radiation, UV light, electricity, ultrasonic sound waves, filtration. Chemical methods of control: Antiseptics and disinfectants (halogens, alcohol, gaseous sterilization. Concept of biological control.

UNIT V

Cell Biology: Eukaryotic Cell - Structure and function of the following: nucleus, nuclear membrane, nucleoplasm, nucleolus, golgi complex, Mitochondria, Chloroplast, endoplasmic reticulum, lysosomes, peroxisomes, glyoxisomes and vacuoles.

▲ Reference books:

1. Microbiology-Concept and applications, Pelczar M.J.J, E.C.S. Chang & N.R. Krieg, 1993. McGraw Hill company New York
2. Microbiology. Prescott L.M, J.D. Harley & D. A. Klein, 1999. McGraw Hill
3. General Microbiology, Stanier, 1986. McMillan Publishing Co
4. Microbiology - An Introduction, 4th Edition, Gerard J. Tortora, Berdell R. Funke, Christine L. Care, 1992. The Benjamin/Cummings Publishing Company, Inc

stereospecificity), lock and key and induced fit models. Enzyme kinetics: Michaelis-Menten equation, effect of substrate concentration, effect of enzyme concentration, effect of p H and temperature, temperature. Enzyme inhibition kinetics (reversible inhibition types – competitive, uncompetitive and non-competitive), brief idea of irreversible inhibition.

UNIT V

Bioenergetics: Concept of free energy, Entropy, Enthalpy & Redox Potential. Concept of high energy bonds as related to the structure of ATP, Phosphoenolpyruvate, Creatine phosphate etc. Glycolysis (pathway, entry of other monosachharides and disaccharides, regulation, inhibitors) Gluconeogenesis: Bypass reactions.

References:

1. Lehninger, 2000. Principles of Biochemistry, CBS Publishers
2. Stryer, L., 2002. Biochemistry. W.H. Freeman
3. Harper, 2003. Biochemistry. McGraw-Hill
4. Voet D. and Voet J.G. 1995. Biochemistry



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2019-2020

III SEMESTER

B.Sc., SEMESTER III

PAPER- III: BIOPHYSICAL TECHNIQUES

UNIT – I

Spectrophotometry: Spectrum of light, absorption of electromagnetic radiations, Beer's law - derivation and deviations, extinction coefficient. Instrumentation of Colorimeter; UV and visible spectrophotometry, Double beam spectrometer; dual-wavelength spectrometer, Applications of UV and visible spectrophotometry.

UNIT II:

Chromatography: Partition principle, partition coefficient, nature of partition forces, brief account of paper chromatography. Thin layer chromatography and column chromatography. Gel filtration: Principle, instrumentation and applications. Ionexchange chromatography: Principle, instrumentation and applications. Affinity chromatography: Principle, instrumentation and applications. HPLC

UNIT III

Electrophoresis: Migration of ions in electric field, Factors affecting electrophoretic mobility. Gel electrophoresis: - Types of gels, SDS-PAGE Electrophoresis and applications. Agarose gel electrophoresis, applications. Isoelectric focusing. Pulsed-field gel electrophoresis.

UNIT – IV:

Isotopic tracer technique: Radioactive & stable isotopes, rate of radioactive decay. Units of radioactivity. Concept of measurement of radioactivity, Cerenkov radiation. Measurement of

Stable isotopes: Falling drop method for deuterium measurement. Principles of tracer technique, advantages and limitations, applications of isotopes in biotechnology

UNIT V:

Centrifugation: Basic principles, concept of RCF, types of centrifuges (clinical, high speed and ultracentrifuges). Preparative centrifugation: Differential and density gradient centrifugation, applications (Isolation of cell components). Analytical centrifugation: Sedimentation coefficient, determination of molecular weight by sedimentation velocity and sedimentation equilibrium methods.

Biostatistics Basic concepts of mean, median, mode, Standard deviation and Standard error. Introduction to ANOVA

Reference books:

1. Wilson, K. & Walker, J., 2000. Practical Biochemistry.
2. Biophysical chemistry – Upadhyay, Himalaya Publication edition 3, 2005.
3. Fundamentals Of Biostatistics by Khan (Author), Khanum Ukaaz Publications, Hyderabad.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2019-2020

IV SEMESTER

B. Sc. SEMESTER IV

PAPER-IV: IMMUNOLOGY

UNIT I

Immune system: History and introduction to immunology; Organs and cells of immune system; Immunity- types; innate immune mechanism, Acquired immune mechanism.

UNIT II

Antibody and Antigen: Antibody structure and classes, Antibody diversity, Types of Antigens, Antigenicity (factors affecting antigenicity), hapten. Complement system.

UNIT III

Immunity: Cell mediated immunity: TC mediated immunity, NK cell mediated immunity, ADCC, brief description of cytokines and MHC (MHC types and diversity), Primary and secondary immune response; Humoral immunity

UNIT IV

Hypersensitivity and vaccination: General features of hypersensitivity, various types of hypersensitivity, Autoimmunity – any two diseases as examples; Vaccination: Discovery, principles, significance, Types of Vaccines.

UNIT V

Immunological Techniques: Antigen-antibody reactions: Precipitation, agglutination, complement fixation, immunodiffusion, ELISA. Hybridoma technology: Monoclonal antibodies and their applications in immunodiagnosis.

B. Sc. III –Semester V

PAPER- V: MOLECULAR BIOLOGY

Unit I:

Genome Structure: Watson and Crick model of DNA; Genome organization with specific reference to prokaryotic and eukaryotic genomes; Genome size. Concepts of Genetic Material, Gene, Chromosome and Genome. Experiments to prove DNA and RNA as genetic material (Griffith experiment, Hershey- Chase experiment, Fraenkel-Conrat experiment).

Unit II

DNA Replication: Enzymology of replication (DNA polymerase I, pol II and III, helicases, topoisomerases, single strand binding proteins, primase. Proof of semiconservative replication, Replication origin, initiation, elongation, and termination in prokaryotes. Rolling circle replication of DNA.

Unit III

Transcription : Enzymatic synthesis of RNA: Basic features of transcription, structure of prokaryotic RNA polymerase (core enzyme and holo enzyme, sigma factor), concept of

promoter (Pribnow box, -10 and -35 sequences), Four steps of transcription (promoter binding and activation, RNA chain initiation, chain elongation, termination and release). Reverse transcription,

Unit IV

Genetic Code and Protein Synthesis

Genetic code: Features of genetic code, Structure of mRNA, brief structure of tRNA, the wobble hypothesis. Initiation, elongation, termination of protein synthesis in prokaryotes; Poly and Mono cistronic m-RNA.

Unit V:

Gene Expression and regulation

Regulation of gene expression; Clustered genes and the operon concepts - Negative and positive control of the Lac Operon, trp operon, Control of gene expression.

References:

1. Molecular cell Biology (IIIrd Edition), Harvey Lodish, David Baltimore et al., W.H. Freeman, 2000.
2. The Molecular Biology of the Gene, J.D.Watson et al., 1987. Benjamin Cummings
3. Molecular Biology by David Freifelder 2004
4. Genetics by P. K. Gupta (2014) Rastogi Publications

PRACTICAL-V: MOLECULAR BIOLOGY LAB

1. Effect of UV radiations on the growth of microorganisms.
2. Determination of absorption maxima of DNA and RNA and their quantification
3. Quantitative estimation of RNA
4. Quantitative estimation of DNA
5. Isolation of plasmid DNA from bacteria
6. Isolation of genomic DNA from *E.coli*
7. Isolation of DNA from sheep liver
8. Isolation of DNA from plant leaves (Rice or Tobacco or any other plant)
9. Separation of DNA by Agarose gel Electrophoresis

B. Sc. III – Semester V

PAPER-VI(A): rDNA TECHNOLOGY (Elective Theory)

Unit I:

Restriction and Modification. Classification of restriction endonucleases. Enzymes used in molecular cloning: Polymerases, ligases, phosphatases, kinases and nucleases, reverse transcriptase and terminal transferase.

Unit II

Cutting and joining DNA (cohesive end ligation, methods of blunt end ligation). Transfection and transformation. Selection of transformed cells. Screening methods (Genetic marker and blue white screening)

Unit III:

Cloning vehicles - Plasmid, Bacteriophage, Construction of genomic and cDNA libraries. Advantages of cDNA libraries.

Unit IV:

Methods of gene sequencing – Maxam - Gilberts and Sanger's dideoxy chain termination methods; Polymerase chain reaction technique (Components in PCR and PCR conditions)

Methods of gene transfer in fungi, yeast and higher plants using microinjection, microprojectile bombardment (gene gun method, Electroporation and Agrobacterium mediated transformation)

Unit V:

Applications of recombinant DNA technology in Agriculture (Transgenic Plants) Medicine (production of Insulin, Growth hormone, Tissue plasminogen activator and HBsAg vaccine)

References:

1. Principles of Gene Manipulation and Genomics - Primrose, S.B. and Twyman R.M. 2006. 7th Edition. Blackwell Publishing Company
2. A Text Book of Biotechnology. R.C. Dubey. S.Chand & Co Ltd, New Delhi.
3. Gene Cloning: An introduction by T. A. Brown (1986) 3rd Edition Ghapman & Hall

PRACTICAL-VI(A): rDNA TECHNOLOGY LAB (Elective Lab)

1. Problem in Genetic engineering.
2. Transformation in Bacteria using plasmid.
3. Restriction digestion of DNA and its electrophoretic separation.
4. Ligation of DNA molecules and their testing using electrophoresis.
5. Activity of DNAase and RNAse on DNA and RNA.
6. Isolation of Plasmid DNA.
7. Demonstration of PCR

PRACTICAL-VI(A): rDNA TECHNOLOGY LAB (Elective Lab)

1. Problem in Genetic engineering.
2. Transformation in Bacteria using plasmid.
3. Restriction digestion of DNA and its electrophoretic separation.
4. Ligation of DNA molecules and their testing using electrophoresis.
5. Activity of DNAase and RNAse on DNA and RNA.
6. Isolation of Plasmid DNA.
7. Demonstration of PCR

PAPER-VI(B): GENETICS (Elective Theory)

UNIT I

Mendel's Laws and Inheritance: Mendel experiments, Mendel Laws and deviations: incomplete dominance and Co dominance Penetration and pleiotropism. Recessive and Dominant epistatic gene interactions. Concept of multiple alleles.

UNIT II

Genes and their variations: Structure of gene, gene and environment, gene copies of prokaryotic and Eukaryotic chromosomes. Eukaryotic chromosome organization, histone proteins.

Unit III:

Gene mutations: Mutagenesis - Spontaneous and induced (Chemical and physical) mutations; Natural and induction of mutations, point mutations, frameshift mutations, auxotrophic conditional and suppressor mutations.

UNIT IV:

DNA Damage and DNA Repair: Factors affecting DNA damage; Light induced repair, Excision repair and mismatch repair, Post replication repair, Rec gene and its role in DNA repair, SOS repair and SOS response

Unit V:

Transposable elements: Structure and Molecular basis of AC-DS transposition in maize, "P" element of Drosophila and hybrid dysgenesis, Yeast "T7" elements, Retroposans

References:

1. Principles of Genetics – E.J.Gardener, M.J.Simmons and D.P.Snustad, John Wiley & Sons Publications.
2. Molecular Biology of the Cell – Alberts, Garland publication, edition 4, 2002.
3. Genetics by P. K. Gupta (2014) Rastogi Publications

PAPER-VII: PLANT AND ANIMAL BIOTECHNOLOGY

UNIT I:

Cell and tissue culture:

Introduction to Plant Biotechnology: Principles of plant cell and tissue culture – totipotency, dedifferentiation, redifferentiation; Introduction to cell and Tissue culture Laboratory facilities; Types of media (Eg. MS Media & its composition), Preparation and sterilization.

UNIT II:

Tissue and micropropagation: Somatic embryogenesis and organogenesis; Clonal Propagation of economically important plants (Banana), Production of secondary metabolites through plant tissue culture, Methods in the production of transgenic plants, Bt Cotton, Golden rice.

UNIT III:

Various techniques of animal cell and tissue culture: Basic laboratory facilities of animal cell culture laboratory, Culture media, growth factors. Characteristics of cells in culture: Contact inhibition, anchorage dependence, cell-cell communication etc.; Cell senescence; cell and tissue response to trophic factors. Primary culture, immortal cells, cell lines. d) Maintenance of cell lines in the laboratory.

UNIT IV:

Gene transfer methods in animals: Transgenesis, transgenic methods – microinjection, electroporation, lipofection, embryonic stem cell mediated-, retroviral mediated-, Artificial insemination, In Vitro Fertilization, Embryo transfer in farm animals Production of Dolly..

UNIT V:

IPR: Intellectual property rights- patent, copyright, trademark etc Social, ethical and legal issues in Biotechnology.

References:

1. Introduction to Plant Biotechnology Chawla,(2003) (2nd edn) Oxford and IBH Publishers
2. A Text Book of Biotechnology. R.C. Dubey. S.Chand& Co Ltd, New Delhi.
3. Biotechnology, Satyanarayana. U, 2008, Books and Allied (p) Ltd.
4. Basic Biotechnology, S. Ignachimuthu. 1995. Tata McGraw Hill Publishers, New Delhi

PRACTICAL-VII: PLANT AND ANIMAL BIOTECHNOLOGY LAB

1. Establishing a plant cell culture (both in solid and liquid media) – seed germination, callus culture, suspension cell culture, regeneration from callus cells.
2. Suspension culture.
3. Cell count by hemocytometer.
4. Cytology of callus.
5. Establishing primary cell culture of chicken embryo fibroblasts.
6. Animal tissue culture – maintenance of established cell lines.
7. Animal tissue culture – virus cultivation.
8. Measurement of cell size.
9. Microphotography.
10. IMViC test.
11. Determination of seed viability.

PAPER-VIII-A1: ENVIRONMENTAL BIOTECHNOLOGY

Unit I:

Principles of Ecology, Water and terrestrial ecosystems, Bio-geo chemical cycles - Carbon, Nitrogen cycles. Role of microbes in bio-geochemical cycles.

Unit II:

Inorganic and Organic pollutants of air, land and water; maintenance of standards, Environmental monitoring. Detection, treatment and prevention of pollution. Biological indicators

Unit III:

Biocides, Four stage alternatives, Refuse disposal - Treatment methods, effluent from pharmaceuticals, fertilizers, pulp and paper industry.

Unit IV:

Waste water management - Aerobic and anaerobic treatment, primary, secondary and tertiary treatment of municipal wastes, Solid waste management.

Unit V:

Bioremediation, Biodegradation of recalcitrant compounds and the role of genetically engineered microbes and genetically modified organisms in the environmental management.

References:

1. Waste water engineering - treatment, disposal and reuse, Metcalf and Eddy Inc., Tata McGraw Hill, New Delhi.
2. Bioremediation. Baaker. KH and Herson D.S., 1994. Mc GrawHill Inc. New York
3. Environmental biotechnology - **Alan Scragg**, Pearson Education Limited.
4. Environmental Chemistry, AK. De, Wiley Eastern Ltd, New Delhi

PRACTICAL-VIII-A1: ENVIRONMENTAL BIOTECHNOLOGY LAB

1. Detection of coliforms for determination of the purity of potable water.
2. Determination of total dissolved solids of water
3. Determination of Hardness and alkalinity of water sample.
4. Determination of dissolved oxygen concentration of water sample
5. Determination of biological oxygen demand of sewage sample
6. Determination of chemical oxygen demand (COD) of sewage sample.
7. Isolation of xenobiotic degrading bacteria by selective enrichment technique
8. Estimation of heavy metals in water/soil
9. Estimation of nitrate in drinking water.
10. Preparation and formulation of microbial biopesticide (bacteria, fungi and viruses)
11. In vitro evaluation of medicinal plants against pathogenic microbes.
12. Effect of mycorrhizal fungi on growth promotion of plants.
13. Production of microbial fertilizers (Rhizobium, Azotobacter and AMF).

PAPER-VIII-A2: INDUSTRIAL BIOTECHNOLOGY

Unit I:

Isolation, Screening, Preservation and Improvement of Industrially Important Microorganisms. Synthetic and Natural Medium, Precursors, Antifoams, Sterilization Methods and Inoculum Preparation.

Unit II:

Definition of bioreactor, basic principles of bioreactor. Classification of bioreactors. Analysis of batch, continuous, fed batch and semi-continuous bioreactors.

Unit III:

Ethanol Production by Fermentation using Molasses, Starchy Substances. Production of Alcoholic Beverages like Beer and Wine. Production of Citric Acid by Submerged and Solid State Fermentations.

Unit IV:

Sources of Industrial Enzymes, Production of Microbial Enzymes like Amylase and protease. Baker's Yeast and SCP Production. Production of Antibiotics: Penicillin.

Unit V:

Biotechnology Products- Production of recombinant proteins having therapeutic and diagnostic applications (Insulin, Growth Hormone, Recombinant vaccines, Monoclonal Antibody).

References:

1. Industrial Microbiology by L.E Casida, John Wiley and sons INC
2. Industrial microbiology by A.H.Patel, Macillan India Ltd.

PRACTICAL-VIII-A2: INDUSTRIAL BIOTECHNOLOGY LAB

1. Isolation of industrially important microorganisms from soil.
2. Isolation of amylase producing organisms from soil.
3. Production of α – amylase from *Bacillus Spp.* by shake flask culture.
4. Production of alcohol or wine using different substrates.
5. Estimation of alcohol by titrimetry.
6. Estimation of alcohol by calorimetric method.
7. Production of citric acid.
8. Citric acid production by submerged fermentation.
9. Estimation of citric acid by titrimetry.

PAPER-VIII-A3 : MEDICAL BIOTECHNOLOGY

UNIT- I

Human Genetics and Human Genome: History and development of human Genome Project; organization of the human genome. – chromosome and gene organization -Inherited human diseases-single gene diseases complex traits.

UNIT- II

Gene Therapy: Identification and isolation of defective genes Cancer causes and genetics – Genetic Counselling.

Infectious Diseases: Classification: fungal, protozoal, helminthic, bacterial and viral; Hospital-acquired infections (nosocomial), Sexually transmitted Diseases.

Unit -III

Immunology, Vaccines and Transplantation Technology

Antigens and Antibodies –Acquired and Innate Immunity, Immune system, Immune diseases Allergy. Immunity to infections by viruses, bacteria, fungi and parasites. Blood groups. Monoclonal antibodies.

Unit -IV

Embryonic Stem cells: Culture & Therapy. Artificial Blood. Aminocentosis. Biochemical and Molecular Diagnostics (PCR, ELISA, FISH, Microarray etc) Drug delivery methods

UNIT- V

Social, Ethical and Legal Issues in Medical Biotechnology

IPR : patents and copyrights. Human cloning. Pre-natal sex determination and foeticide. Clinical Trials introduction.

REFERENCES:

1. Schacter, Bernice (Ed.).2006. Biotechnology and Your Health: Pharmaceutical

Applications. Chelsea House Publications, Nw York.

2. Dinesh, K.P. and Chetan, D.M.2007. Health and Pharmaceuticals Biotechnology. Laxmi Publications (P) Ltd., India.

3. Crommalin D.J.A., R.D. Sindeler and B.Meibohm (Eds). 2007. Pharmaceuticals Biotechnology: Fundamentals and Applications. Informa Health Care, London.

PRACTICAL-VIII- A3: MEDICAL BIOTECHNOLOGY LAB

1. ELISA test
2. Microagglutination using microtiter plates (eg ABO and Rh Blood grouping)
3. RBC /WBC count
4. Ouchterlony
5. Isolation of genomic DNA from bacteria, animal cell
6. Polymerase Chain Reaction



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF BOTANY

SYLLABUS 2019-2020

I B.Sc - SEMESTER- I: BOTANY SYLLABUS

Paper- I : Microbial Diversity, Algae and Fungi

Total hours of teaching 60hrs @ 4 hrs per week

UNIT- I: MICROBIAL WORLD (Origin and Evolution of Life, Microbial diversity (12hrs)

1. Discovery of microorganisms, origin of life, spontaneous, biogenesis, Pasteur experiments, germ theory of disease.
2. Classification of microorganisms – R.H. Whittaker's five kingdom concept, Carl Woese's- Domain system.
3. Brief account of special groups of bacteria- Archaeobacteria, Mycoplasma, Actinomycetes and Cyanobacteria.

UNIT- II: VIRUSES

(12hrs)

1. Viruses- Discovery, general account, structure & replication of T4 Phage (Lytic, Lysogenic) and TMV, Viroids, Prions.
2. Plant diseases caused by viruses– Symptoms, transmission and control measures (Brief account only).
3. Study of Tobacco Mosaic, Bendi Vein clearing and Papaya leaf curl diseases.

UNIT III: BACTERIA

(12hrs)

1. Bacteria: Discovery, General characteristics, cell structure and nutrition.
2. Reproduction- Asexual and bacterial recombination (Conjugation, Transformation, Transduction).
3. Economic importance of Bacteria.

UNIT –IV Algae

(12hrs)

1. General account - thallus organization and reproduction in Algae.
2. Fritsch classification of Algae (up to classes only) and economic importance.
3. Structure, reproduction and life history of *Oedogonium*, *Ectocarpus* and *Polysiphonia*.

UNIT V: FUNGI

(12hrs)

1. General characteristics and outline classification (Ainsworth).
2. Structure, reproduction and life history of *Rhizopus* (Zygomycota), *Penicillium* (Ascomycota), and *Puccinia* (Basidiomycota).
3. Lichens-Structure and reproduction; ecological and economic importance.

I B. Sc - SEMESTER- II: BOTANY THEORY SYLLABUS

Paper –II : Diversity of Archaeogoniaties & Plant Anatomy

Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: BRYOPHYTES

(12hrs)

1. Bryophytes: General characters, Classification (up to classes)
2. Structure, reproduction and Life history of *Marchantia* and *Funaria*.
3. Evolution of Sporophyte in Bryophytes.

UNIT - II: PTERIDOPHYTES

(12hrs)

1. Pteridophytes: General characters, classification (up to Classes)
2. Structure, reproduction and life history of *Lycopodium*, and *Marsilea*.
3. Heterospory and seed habit.
4. Evolution of stele in Pteridophytes.

UNIT – III: GYMNOSPERMS

(12hrs)

1. Gymnosperms: General characters, classification (up to classes)
2. Morphology, anatomy, reproduction and life history of *Pinus* and *Gnetum*
3. Economic importance with reference to wood, essential oils and drugs

UNIT –IV: Tissues and Tissue systems

(12hrs)

1. Meristems - Root and Shoot apical meristems and their histological organization.
2. Tissues – Meristematic and permanent tissues (simple, complex, secretory)
3. Tissue systems–Epidermal, ground and vascular.

UNIT – V. Secondary growth

(12hrs)

1. Anomalous secondary growth in *Achyranthes*, *Boerhaavia* and *Dracaena*
2. Study of local timbers of economic importance-Teak, Rosewood, Red sanders and Arjun (*Tella maddi*).

Suggested activity: Collection of *Marsilea* sporocarp, *Pinus* needles, male and female cones, study pollen grains, collection of locally available economically useful timbers.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF BOTANY

SYLLABUS 2019-2020

III SEMESTER

10

II B. Sc - SEMESTER –III: BOTANY THEORY PAPER –III

Paper-III : Plant Taxonomy and Embryology)

Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: INTRODUCTION TO PLANT TAXONOMY (12hrs)

1. Fundamental components of taxonomy (identification, nomenclature, classification)
2. Taxonomic resources: Herbarium- functions& important herbaria, Botanical gardens, Flora.
3. Botanical Nomenclature- Principles and rules of ICBN (ranks and names; principle of priority, binomial system; type method, author citation, valid-publication).

UNIT – II: CLASSIFICATION

(12 hrs)

1. Types of classification- Artificial, Natural and Phylogenetic.
2. Bentham & Hooker's system of classification- merits and demerits.
3. Engler & Prantle's system of classification- merits and demerits
4. Phylogeny – origin and evolution of Angiosperms

UNIT –III: SYSTEMATIC TAXONOMY-I

(12hrs)

1. Systematic study and economic importance of the following families:
Annonaceae, Brassicaceae, Rutaceae, Curcubitaceae, and Apiaceae.

UNIT –IV: SYSTEMATIC TAXONOMY-II

(12hrs)

1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Ephorbiaceae, Arecaceae, and Poaceae.

UNIT – V: EMBRYOLOGY

(12hrs)

1. Anther structure, microsporogenesis and development of male gametophyte.
2. Ovule structure and types; Megasporogenesis, development of Monosporic, Bisporic and Tetrasporic types (*Peperomia*, *Drusa*, *Adoxa*) of embryo sacs.
3. Pollination and Fertilization (out lines) Endosperm development and types.
4. Development of Dicot and Monocot embryos, Polyembryony.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF BOTANY

SYLLABUS 2019-2020

IV SEMESTER

14

II B.Sc. BOTANY, SEMESTER- IV, Paper-IV: THEORY SYLLABUS
PAPER –IV: Plant Physiology and Metabolism
Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: Plant – Water relations (12 hrs)

1. Physical properties of water, Importance of water to plant life.
2. Diffusion, imbibition and osmosis; concept & components of Water potential.
3. Absorption and transport of water and ascent of sap.
4. Transpiration –Definition, types of transpiration, structure and opening and closing mechanism of stomata.

UNIT –II: Mineral nutrition & Enzymes (12hrs)

1. Mineral Nutrition: Essential elements (macro and micronutrients) and their role in plant metabolism, deficiency symptoms.
2. Mineral ion uptake (active and passive transport).
3. Nitrogen metabolism- biological nitrogen fixation in *Rhizobium*, outlines of protein synthesis (transcription and translation).
4. Enzymes: General characteristics, mechanism of enzyme action and factors regulating enzyme action.

UNIT –III: PHOTOSYNTHESIS (12 hrs)

1. Photosynthesis: Photosynthetic pigments, photosynthetic light reactions, photo-phosphorylation, carbon assimilation pathways: C₃, C₄, and CAM (brief account)
2. Photorespiration and its significance.
3. Translocation of organic solutes: mechanism of phloem transport, source-sink relationships.

UNIT – IV: PLANT METABOLISM (12 hrs)

1. Respiration: Glycolysis, anaerobic respiration, TCA cycle, electron transport system. Mechanism of oxidative phosphorylation.
2. Lipid Metabolism: Types of lipids, Beta-oxidation.

UNIT –V: GROWTH AND DEVELOPMENT (12hrs)

1. Growth and development: definition, phases and kinetics of growth.
2. Physiological effects of phytohormones - Auxins, Gibberellins, Cytokinins, ABA and Ethylene.
3. Physiology of flowering -photoperiodism, role of phytochrome in flowering: Vernalization

III B. Sc - SEMESTER- V: BOTANY SYLLABUS THEORY PAPER – V

Paper-V: Cell Biology, Genetics and Plant Breeding

Total hours of teaching 60 hrs @ 3 hrs per week

UNIT – I Cell Biology:

(12hrs)

1. Cell, the unit of life- Cell theory, Prokaryotic and eukaryotic cells; Eukaryotic cell components.
2. Ultra structure and functions of cell wall and cell membranes.
3. Chromosomes: morphology, organization of DNA in a chromosome (nucleosome model), Euchromatin and heterochromatin.

UNIT – II Genetic Material:

(12hrs)

1. DNA as the genetic material: Griffith's and Avery's transformation experiment, Hershey – Chase bacteriophage experiment.
2. DNA structure (Watson & Crick model) and replication of DNA (semi-conservative)
3. Types of RNA (mRNA, tRNA, rRNA), their structure and function.

UNIT – III Mendelian Inheritance:

(12 hrs)

1. Mendel's laws of Inheritance (Mono- and Di- hybrid crosses); backcross and test cross.
2. Chromosome theory of Inheritance.
3. Linkage: concept, complete and incomplete linkage, coupling and repulsion; linkage maps based on two and three factor crosses.
4. Crossing Over: concept & significance.

UNIT – IV Plant Breeding:

(12 hrs)

1. Introduction and Objectives of plant breeding.
2. Methods of crop improvement: Procedure, advantages and limitations of Introduction, Selection, and Hybridization (outlines only).

UNIT – V Breeding, Crop Improvement and Biotechnology:

(12 hrs)

1. Role of mutations in crop improvement.
2. Role of somaclonal variations in crop improvement.
3. Molecular breeding – use of DNA markers in plant breeding and crop improvement (RAPD, RFLP).

Suggested activity: Seminar, Debate, Quiz, observation of live cells and nucleus in Onion peels, observation of Meiotic nuclei in Maize pollen. Solving Genetics problems.

III B. Sc - SEMESTER- V: BOTANY THEORY SYLLABUS
PAPER-VI: PLANT ECOLOGY & PHYTOGEOGRAPHY
Total hours of teaching 60 hrs @ 3 hrs per week

UNIT – I. Elements of Ecology (12 hrs)

1. Ecology: definition, branches and significance of ecology.
2. Climatic Factors: Light, Temperature, precipitation.
3. Edaphic Factor: Origin, formation, composition and soil profile.
4. Biotic Factor: Interactions between plants and animals.

UNIT– II. Ecosystem Ecology (12 hrs)

1. Ecosystem: Concept and components, energy flow, Food chain, Food web, Ecological pyramids.
2. Productivity of ecosystem-Primary, Secondary and Net productivity.
3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.

UNIT – II Population & Community Ecology (12 hrs)

1. Population -definition, characteristics and importance, outlines –ecotypes.
2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, competition.
3. Interaction between plants growing in a community.

UNIT – IV Phytogeography (12 hrs)

1. Principles of Phytogeography, Distribution (wides, endemic, discontinuous species)
2. Phytogeographic regions of India.
3. Phytogeographic regions of World.
4. Endemism – types and causes

UNIT- V: Plant Biodiversity and its importance (12 hrs)

1. Definition, levels of biodiversity-genetic, species and ecosystem.
2. Biodiversity hotspots- Criteria, Biodiversity hotspots of India.
3. Loss of biodiversity – causes and conservation (*In-situ* and *ex-situ* methods).
4. Seed banks - conservation of genetic resources and their importance

Suggested activity :Collection of different soils, studying their texture, observing polluted water bodies, student study projects, debates on man's activity on ecosystem and biodiversity conservation methods, visiting a nearest natural vegetation area. Visit to NGO, working in the field of biodiversity and report writing; to study Honey Bees and plants yielding honey.

III B. Sc - BOTANY SYLLABUS SEMESTER- VI

Paper VII: Plant tissue culture and its biotechnological applications

Total hours of teaching 60hrs @ 3hrs per week

Unit I: PLANT TISSUE CULTURE – 1

(12hrs)

1. History of plant tissue culture research - basic principles of plant tissue callus culture, meristem culture, organ culture, Totipotency of cells, differentiation and dedifferentiation.
2. Methodology - sterilization (physical and chemical methods), culture media, Murashige and Skoog's (MS medium), phytohormones, medium for micro-propagation/clonal propagation of ornamental and horticulturally important plants.
3. Callus subculture maintenance, growth measurements, morphogenesis in callus culture – organogenesis, somatic embryogenesis.

UNIT-II: Plant Tissue culture -2

(12hrs)

1. Endosperm culture – Embryo culture -culture requirements – applications, embryo rescue technique.
2. Production of secondary metabolites.
3. Cryopreservation; Germ plasm conservation.

Unit III: Recombinant DNA technology

(12hrs)

1. Restriction Endonucleases (history, types I-IV, biological role and application); concepts of restriction mapping.
2. Cloning Vectors: Prokaryotic(pUC 18, pBR322, Ti plasmid and Lambda phage, Eukaryotic Vectors (YAC and briefly PAC)
3. Gene cloning (Bacterial Transformation and selection of recombinant clones, PCR mediated gene cloning)
4. Construction of genomic and cDNA libraries, screening DNA libraries to obtain gene of interest by complementation technique, colony hybridization.

Unit IV: Methods of gene transfer

(12hrs)

1. Methods of gene transfer- Agrobacterium-mediated, direct gene transfer by Electroporation, Microinjection, Micro projectile bombardment.
2. Selection of transgenics– selectable marker and reporter genes (Luciferase, GUS, GFP).

Unit V: Applications of Biotechnology

(12 hrs)

1. Applications of Plant Genetic Engineering – crop improvement, herbicide resistance, insect resistance, virus resistance.
2. Genetic modification – transgenic plants for pest resistant (Bt-cotton); herbicide resistance (Round Up Ready soybean); improved agronomic traits - flavr Savr tomato, Golden rice); Improved horticultural varieties(Moon dust carnations)

2

III B.Sc.: BOTANY SYLLABUS SEMESTER- VI
Cluster Electives, CLUSTER–A CLUSTER ELECTIVE, PAPER–VIII-A1

Paper VIII-A1: Biological instrumentation and Methodology

Total hours of teaching 60hrs @ 3hrs per week

Unit -I: Imaging and related techniques: (12hrs)

Principles of microscopy; Light microscopy; Fluorescence microscopy; Electron Microscopy
(a) Flow cytometry (b) Applications of fluorescence microscopy:

Unit- II: pH and Centrifugation: (12 hrs)

pH meter: Principles and instrumentation, Centrifugation: Principles, types of centrifuges, types of rotors, differential and density gradient centrifugation, application.

Unit- III: Spectrophotometry: (12hrs)

Principle involved in Spectrophotometer; Spectrophotometric techniques, Instrumentation: ultraviolet and visible spectrophotometry (single and double beam, double wavelength spectrophotometers), Infrared spectrometers.

Unit- IV: Chromatography: (12hrs)

Chromatographic techniques: Principle and applications – Column - thin layer –paper, affinity and gaschromatography - Gel filtration - Ion exchange and High performance liquid chromatography techniques– Examples of application for each chromatographic system - Basic principles of electrophoresis.

Unit-V:Preparation of molar, molal and normal solutions, buffers, the art of scientific writing (12hrs)

Understanding the details on the label of reagent bottles Molarity and normality of common acids and bases Preparation of solutions Dilutions Percentage solutions Molar, molal and normal solutions.

Technique of handling micropipettes; Knowledge about common toxic chemicals and safety measures in their handling. The art of scientific writing and presentation of scientific matter Scientific writing and ethics Writing references Powerpoint presentation Poster presentation. Introduction to copyright-academic misconduct/plagiarism in scientific writing.

III B.Sc.: BOTANY SYLLABUS SEMESTER- VI PAPER – VIII-A2

Paper VIII-A2: Mushroom Culture and Technology

Total hours of teaching 60hrs @ 3hrs per week

Unit I: Introduction, history: (12hrs)

Introduction - history - scope of edible mushroom cultivation, Types of edible mushrooms available in India – *Volvarellavolvacea*, *Pleurotuscitrinopileatus*, *Agaricusbisporus*. Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms.

UNIT II: Pure culture-spawn preparation: (12hrs)

Pure culture - preparation of medium (PDA and Oatmeal agar medium) sterilization - preparation of test tube slants to store mother culture – culturing of *Pleurotus* mycelium on Petriplates, preparation of mother spawn in saline bottle and polypropylene bag and their multiplication.

Unit III: Cultivation Technology: (12hrs)

Infrastructure: Substrates (locally available) Polythene bags, vessels, Inoculation hook, inoculation loop, low cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag.

Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation - Low cost technology, composting technology in mushroom production.

Unit IV: Storage and nutrition : (12hrs)

Short-term storage (Refrigeration - up to 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fibre content – Vitamins.

Unit V: Food Preparation: (12hrs)

Types of foods prepared from mushrooms; soup, cutlet, omlette, samosa, pickles and curry. Research Centres - National level and Regional level. Cost benefit ratio - Marketing in India and abroad, Export Value.

Suggested activities: Growing spawn on laboratory prepared medium in petriplates and maintaining, preparing compost and compost beds, packing of beds, spawning, maintaining moisture, picking, blanching and packing. Collecting naturally growing mushrooms and identifying



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF CHEMISTRY

SYLLABUS 2019-2020

I SEMESTER

SEMESTER – I

Paper I - Inorganic & Organic Chemistry 60hrs (4h/w)

INORGANIC CHEMISTRY 30 hrs (2h / w)

UNIT –I

p-block elements –I 15h

Group-13: Synthesis and structure of diborane and higher boranes (B_4H_{10} and B_5H_9), boron-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 -II 8h

Group - 16: Classifications of oxides based on (i) Chemical behaviour and (ii) Oxygen content.

Group-17: Inter halogen compounds and pseudo halogens.

2. Organometallic Chemistry 7h

Definition - classification of Organometallic compounds - nomenclature, preparation, properties and applications of alkyls of Li and Mg.

ORGANIC CHEMISTRY 30hrs (2h /w)

UNIT-III

Structural theory in Organic Chemistry

10 h

Types of bond fission type of organic reagents (Electrophilic, Nucleophilic, and free radical reagents including neutral molecules like H₂O, NH₃ & AlCl₃).

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 reactions. Elimination-Examples.

UNIT-IV

1. Acyclic Hydrocarbons

6 h

Alkenes - Addition of halogen. Addition of HX, Markonikov's rule (with mechanism), addition of H₂O, HOX, H₂SO₄ and addition of HBr in the presence of peroxide (anti - Markonikov's addition). 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 – Terminal and non terminal Alkynes. Properties; Acidity of acetylenic hydrogen (formation of Metal acetylides). Electrophilic addition of X₂, HX, H₂O (Tautomerism), Oxidation with KMnO₄, OsO₄, Metal Ammonia reduction and Polymerisation reaction of acetylene.

2. Alicyclic hydrocarbons (Cycloalkanes)

4 h

Nomenclature, Preparation by Freunds method, Wislicenus method. Properties - Stability of cycloalkanes - Baeyer's strain theory, Sachse and Mohr predictions and Pitzer's strain theory.

UNIT-V

Benzene and its reactivity

10h

Concept of aromaticity - aromaticity (definition), Huckel's rule - application to Benzenoid (Benzene, Naphthalene) and Non - Benzenoid compounds (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation), Molecular structure of Benzenebased on modern concepts (VBT and MOT).

Reactions - Mechanism of nitration, Friedel Craft's alkylation and acylation. Orientation of aromatic substitution - Definition of ortho, para and meta directing groups. Ring activating and deactivating groups with examples (i) Amino, methoxy and methyl groups (ii) Carboxy, nitro, nitrile, carbonyl and sulphonic acid groups (iii) Halogens



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF CHEMISTRY

SYLLABUS 2019-2020

II SEMESTER

SEMESTER - II

Paper II (Physical & General Chemistry) 60 hrs. (4h/w)

PHYSICAL CHEMISTRY 30 hrs (2h / w)

UNIT-I

Solidstate

10h

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. Defects in crystals.

UNIT-II

1. Gaseous state

6 h

Deviation of real gases from ideal behavior. Vander Waal's equation of state. P-V Isotherms of real gases, Andrew's isotherms of carbon dioxide, continuity of state. Critical phenomena. The vander Waal's equation and the critical state. Law of corresponding states Relationship between critical constants and vander Waal's constants. Joule Thomson effect.

2. Liquid state

4 h

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-III

Solutions

10h

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-H₂O, 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.

GENERAL CHEMISTRY

30 hrs (2h / w)

UNIT-IV

1. Surface chemistry

8 h

Definition of colloids. SOLS- properties - kinetic, optical, electrical. Stability of colloids, Hardy-Schulze law, protective colloid.

Liquids in liquids (emulsions)-properties and uses. Liquids in solids (gels) uses.

Adsorption: Physical adsorption, chemisorption. Freundlich, Langmuir adsorption isotherms. Applications of adsorption

2. Chemical Bonding

7h

Valence bond theory, hybridization, VB theory as applied to ClF_3 , $\text{Ni}(\text{CO})_4$,
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

15 h

Optical isomerism: Optical activity- wave nature of light, plane polarised light, optical rotation and specific rotation.

Chiral molecules- definition and criteria (Symmetry elements)- Definition of enantiomers and diastereomers – Explanation of optical isomerism with examples Glyceraldehyde, Lactic acid, Alanine, Tartaric acid, 2,3-dibromopentane.

D,L and R,S configuration methods and E,Z- configuration with examples.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF CHEMISTRY

SYLLABUS 2019-2020

III SEMESTER

SEMESTER - III

Paper III (INORGANIC & ORGANIC CHEMISTRY) 60 hrs (4 h / w)

INORGANIC CHEMISTRY

30 hrs (2h / w)

UNIT – I

1. Chemistry of d-block elements:

9h

Characteristics of d-block elements with special reference to electronic configuration, variable valence, magnetic properties, catalytic properties and ability to form complexes. Stability of various oxidation states

2. Theories of bonding in metals:

6h

Metallic properties and its limitations, Valence bond theory, Free electron theory, Explanation of thermal and electrical conductivity of metals, limitations, Band theory, formation of bands, explanation of conductors, semiconductors and insulators.

UNIT – II

3. Metal carbonyls :

7h

EAN rule, classification of metal carbonyls, structures and shapes of metal carbonyls of V, Cr, Mn, Fe, Co and Ni.

4. Chemistry of f-block elements:

8h

Chemistry of lanthanides - electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties. Chemistry of actinides - electronic configuration, oxidation states, comparison of lanthanides and actinides.

ORGANIC CHEMISTRY

30 h (2h/w)

UNIT – III

1. Halogen compounds

5 h

Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aryl alkyl, allyl, vinyl, benzyl halides.

S_N1 and S_N2 – reaction mechanism with optically active alkyl halide 2-bromobutane.

2. Hydroxy compounds

5 h

Nomenclature and classification of Alcohols: Preparation with hydroboration reaction and Grignard synthesis. Physical properties- Hydrogen bonding (intermolecular and intramolecular). Effect of hydrogen bonding on boiling point and solubility in water. Chemical properties:

a) Dehydration of alcohols.

b) Oxidation of alcohols by CrO_3 , $KMnO_4$.

Identification of alcohols by oxidation with $KMnO_4$, Ceric ammonium nitrate, Luca's reagent.

Phenols: Preparation i) from diazonium salt, ii) from cumene.

Chemical Properties: a) Bromination b) Kolbe-Schmidt reaction(with mechanism)

c) Riemer-Tiemann reaction, (with mechanism), d) azocoupling.

Identification of Phenol with neutral $FeCl_3$

UNIT-IV

Carbonyl compounds

10 h

Nomenclature of aliphatic and aromatic carbonyl compounds, Synthesis of aldehydes from acid chlorides, synthesis of ketones from nitriles. Physical properties: Reactivity of carbonyl group in aldehydes and ketones.

Nucleophilic addition reaction with a) $NaHSO_3$, b) HCN , c) $RMgX$, d) NH_2OH , e) $PhNHNH_2$, f) 2,4 DNPH, With mechanism a) Aldol, b) Cannizzaro's reaction, c)

Perkin reaction, d) Benzoin condensation, Reduction: Clemmensen reduction, Wolf-Kishner reduction, MPV reduction, reduction with $LiAlH_4$ and $NaBH_4$. Analysis of aldehydes and ketones with a) 2,4-DNPH test, b) Tollen's test, c) Fehling test, d) Schiff's test e) Haloform test (with equation)

UNIT-V

1. Carboxylic acids and derivatives

6 h

Nomenclature, classificatio of carboxylic acids. Methods of preparation by Hydrolysis of nitriles, amides and esters (by acids and bases), c) Carbonation of Grignard reagents. Special methods of preparation of aromatic acids by a) Oxidation of side chain. b) Hydrolysis by benzotrichlorides. c) Kolbe reaction. **Physical properties:** Hydrogen bonding, dimeric association, **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



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF CHEMISTRY

SYLLABUS 2019-2020

IV SEMESTER

SEMESTER IV

Paper IV (SPECTROSCOPY & PHYSICAL CHEMISTRY)

60 hrs (4 h / w)

SPECTROSCOPY

(2h / w)

30 hrs

UNIT-I

6h

Beer-Lambert's law and its limitations, transmittance, absorbance and molar absorptivity. 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 (1H -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.

PHYSICAL CHEMISTRY

30 hrs (2h / w)

UNIT-III

Dilute solutions

10h

Colligative properties. Raoult's law, relative lowering of vapour pressure, its relation to molecular weight of non-volatile solute. Elevation of boiling point and depression of freezing point. Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods of determination. Osmosis, osmotic pressure, experimental determination. Theory of dilute solutions. Determination of molecular weight of non-volatile solute from osmotic pressure. Abnormal Colligative properties- Van't Hoff factor.

UNIT-IV

Electrochemistry-I

10h

Specific conductance, equivalent conductance. Variation of equivalent conductance with dilution. Migration of ions, Kohlrausch's law. Arrhenius theory of electrolyte dissociation and its limitations. Ostwald's dilution law. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only). Definition of transport number, determination by Hittorfs method. Application of conductivity measurements- conductometric titrations.

UNIT-V

1. Electrochemistry-II

4h

Single electrode potential, sign convention, Reversible and irreversible cells Nernst Equation- Reference electrode, Standard Hydrogen electrode, calomel electrode, Indicator electrode, metal – metal ion electrode, Inert electrode, Determination of EMF of cell, Applications of EMF measurements - Potentiometric titrations.

2.Phase rule

6h

Concept of phase, components, degrees of freedom. Thermodynamic Derivation of Gibbs phase rule. Phase equilibrium of one component system - water system. Phase equilibrium of two- component system, solid-liquid equilibrium. Simple eutectic diagram of Pb-Ag system, simple eutectic diagram, desilverisation of lead., NaCl-Water system.

SEMESTER-V

Paper - V (INORGANIC, PHYSICAL & ORGANIC CHEMISTRY) 45 hrs (3 h / w)

INORGANIC CHEMISTRY

UNIT – I

Coordination Chemistry:

8h

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-orbitals in octahedral, tetrahedral and square-planar complexes - low spin and high spin complexes - merits of crystal-field theory. Isomerism in coordination compounds - structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.

UNIT-II

1. Magnetic properties of metal complexes:

4h

Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility-Gouymethod.

2. Stability of metal complexes:

3h

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.

ORGANIC CHEMISTRY

UNIT- III

Nitro hydrocarbons:

3h

Nomenclature and classification-nitro hydrocarbons, structure -Tautomerism of nitroalkanes leading to aci and keto form, Preparation of Nitroalkanes, reactivity -halogenation, reaction with HONO (Nitrous acid),Nef reaction and Mannich reaction leading to Micheal addition and reduction.

UNIT – IV

Nitrogen compounds:

12h

Amines (Aliphatic and Aromatic): Nomenclature, Classification into 1°, 2°, 3° Amines and Quarternary ammonium compounds. Preparative methods – 1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffman's bromamide reaction (mechanism).

Reduction of Amides and Schmidt reaction. Physical properties and basic character - Comparative basic strength of Ammonia, methyl amine, dimethyl amine, trimethyl amine and aniline - comparative basic strength of aniline, N-methylaniline and N,N-dimethyl aniline (in aqueous and non-aqueous medium), steric effects and substituent effects.

separation e) Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electrophilic substitution of Aromatic amines – Bromination and Nitration. Oxidation of aryl and Tertiary amines, Diazotization.

PHYSICAL CHEMISTRY

UNIT- V

Thermodynamics

15h

The first law of thermodynamics-statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule-Thomson effect- coefficient. Calculation of w , for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes. State function. Temperature dependence of enthalpy of formation-Kirchoff's equation. Second law of thermodynamics. Different Statements of the law. Carnot cycle and its efficiency. Carnot theorem. Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes. Entropy changes in spontaneous and equilibrium processes.

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by
5. Text book of physical chemistry by S Glasstone
6. Concise Inorganic Chemistry by J.D.Lee
7. Advanced Inorganic Chemistry Vol-I by Satyaprakash, Tuli, Basu and Madan
8. A Text Book of Organic Chemistry by Bahl and Arun bahl
9. A Text Book of Organic chemistry by I L Finar Vol I
10. Advanced physical chemistry by Gurudeep Raj

SEMESTER-V

Paper - VI (INORGANIC, ORGANIC & PHYSICAL CHEMISTRY)

45 hrs (3 h / w)

INORGANIC CHEMISTRY

UNIT-I

1. Reactivity of metal complexes: 4h

Labile and inert complexes, ligand substitution reactions - SN^1 and SN^2 , substitution reactions of square planar complexes - Trans effect and applications of trans effect.

2. Bioinorganic chemistry: 4h

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Zn .
Metalloporphyrins – Structure and functions of hemoglobin, and Chlorophyll.

PHYSICAL CHEMISTRY

UNIT-II

1. Chemical kinetics 8h

Rate of reaction - Definition of order and molecularity. Derivation of rate constants for first, second, third and zero order reactions and examples. Derivation for time half change. Methods to determine the order of reactions. Effect of temperature on rate of reaction, Arrhenius equation, concept of activation energy.

2. Photochemistry 5h

Difference between thermal and photochemical processes. Laws of photochemistry- Grothus-Draper's law and Stark-Einstein's law of photochemical equivalence. Quantum yield-Photochemical reaction mechanism- hydrogen- chlorine, hydrogen- bromine reaction. Qualitative description of fluorescence, phosphorescence, Photosensitized reactions- energy transfer processes (simple example)

ORGANIC CHEMISTRY

UNIT- III

Heterocyclic Compounds 7h

Introduction and definition: Simple five membered ring compounds with one hetero atom
Ex. Furan. Thiophene and pyrrole - Aromatic character – Preparation from 1,4-dicarbonyl compounds, Paul-Knorr synthesis.

Properties : Acidic character of pyrrole - electrophilic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions - Diels Alder reaction in furan.

Pyridine – Structure - Basicity - Aromaticity - Comparison with pyrrole - one method of preparation and properties - Reactivity towards Nucleophilic substitution reaction.

UNIT-IV

Carbohydrates

8h

Monosaccharides: (+) Glucose (aldo hexose) - Evidence for cyclic structure of glucose (some negative aldehydes tests and mutarotation) - Proof for the ring size (methylation, hydrolysis and oxidation reactions) - Pyranose structure (Haworth formula and chair conformational formula).

(-) Fructose (ketohehexose) - Evidence of 2 - ketohehexose structure (formation of pentaacetate, formation of cyanohydrin its hydrolysis and reduction by HI). Cyclic structure for fructose (Furanose structure and Haworth formula) - osazone formation from glucose and fructose – Definition of anomers with examples.

Interconversion of Monosaccharides: Aldopentose to Aldohexose (Arabinose to D- Glucose, D-Mannose) (Kiliani - Fischer method). Epimers, Epimerisation - Lobry de bruyn van Ekenstein rearrangement. Aldohexose to Aldopentose (D-Glucose to D- Arabinose) by Ruff degradation. Aldohexose to Ketohehexose [(+) Glucose to (-) Fructose] and Ketohehexose to Aldohexose (Fructose to Glucose)

UNIT- V

Amino acids and proteins

7h

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 acid b) Malonic ester synthesis c) strecker's synthesis.

Physical properties: 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). Structure and nomenclature of peptides and proteins.

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by Atkins
5. Text book of physical chemistry by S Glasstone

SEMESTER-VI
ELECTIVE PAPER – VII : ENVIRONMENTAL CHEMISTRY
45 hrs (3 h / w)

UNIT-I

Introduction **9h**
Concept of Environmental chemistry-Scope and importance of environment in now adays – Nomenclature of environmental chemistry – Segments of environment - Natural resources – Renewable Resources – Solar and biomass energy and Nonrenewable resources – Thermal power and atomic energy – Reactions of atmospheric oxygen and Hydological cycle.

UNIT-II

Air Pollution **9h**
Definition – Sources of air pollution – Classification of air pollution – Acid rain – Photochemical smog – Green house effect – Formation and depletion of ozone – Bhopal gas disaster – Controlling methods of air pollution.

UNIT-III

Water pollution **9h**
Unique physical and chemical properties of water – water quality and criteria for finding of water quality – Dissolved oxygen – BOD, COD, Suspended solids, total dissolved solids, alkalinity – Hardness of water – Methods to convert temporary hard water into soft water – Methods to convert permanent hard water into soft water – eutrophication and its effects – principal wastage treatment – Industrial waste water treatment.

UNIT-IV

Chemical Toxicology **9h**
Toxic chemicals in the environment – effects of toxic chemicals – cyanide and its toxic effects – pesticides and its biochemical effects – toxicity of lead, mercury, arsenic and cadmium.

UNIT-V

Ecosystem and biodiversity **9h**
Ecosystem
Concepts – structure – Functions and types of ecosystem – Abiotic and biotic components – Energy flow and Energy dynamics of ecosystem – Food chains – Food web – Tropic levels – Biogeochemical cycles (carbon, nitrogen and phosphorus)

Biodiversity

Definition – level and types of biodiversity – concept - significance – magnitude and distribution of biodiversity – trends - biogeographical classification of india – biodiversity at national, global and regional level.

List of Reference books

1. Fundamentals of ecology by M.C.Dash
2. A Text book of Environmental chemistry by W. Moore and F.A. Moore
3. Environmental Chemistry by Samir k. Banerji

LABORATORY COURSE – VII

1. Determination of carbonate and bicarbonate in water samples (acidity and alkalinity)
2. Determination of hardness of water using EDTA
 - a) Permanent hardness
 - b) Temporary hardness
3. Determination of Acidity
4. Determination of Alkalinity
5. Determination of chlorides in water samples

Cluster Elective –VIII
Fuels and Industrial Inorganic materials
PAPER – VIII-A-1 : FUEL CHEMISTRY AND BATTERIES

45 hrs (3 h / w)

- UNIT –I** **12h**
Review of energy sources (renewable and non-renewable) – classification of fuels and their calorific value. Coal: Uses of Coal (fuel and non fuel) in various industries , its composition , carbonization of coal - coal gas , producer gas and water gas – composition and uses – fractionation of coal tar – uses of coal tar based chemicals , requisites of a good metallurgical coke , coal gasification (Hydro gasification and catalytic gasification) coal liquefaction and solvent refining.
- UNIT-II** **6h**
Petroleum and petrol chemical industry:
Composition of crude petroleum , refining and different types of petroleum products and their applications.
- UNIT-III** **10h**
Fractional distillation (principle and process) , cracking (Thermal and catalytic cracking). Reforming petroleum and non petroleum fuels (LPG , CNG , LNG , biogas) ,fuels derived from biomass , fuel from waste , synthetic fuels (gaseous and liquids) , clear fuels , petro chemicals : vinyl acetate , propylene oxide , isoprene , butadiene , toluene and its derivative xylene.
- UNIT-IV** **10h**
Lubricants:
Classification of lubricants , lubricating oils(conducting and non conducting) , solid and semi solid lubricants , synthetic lubricants. Properties of lubricants (viscosity index , cloud point , pore point) and their determination.
- UNIT-V** **7h**
Batteries:
Primary and secondary batteries, battery components and their role, Characteristics of Battery. Working of following batteries: Pb acid, Li-Battery, Solid state electrolyte battery. Fuel cells, Solar cell and polymer cell.

Reference books:

1. E.Stochi : Industrial chemistry , Vol-1, Ellis Horwood Ltd.UK
2. P.C.Jain , M.Jain: Engineering chemistry, Dhanpat Rai &sons , Delhi.
3. B.K.Sharma: Industrial Chemistry , Goel Publishing house , Meerut.

SEMESTER-VI
PAPER – VIII-A-2: INORGANIC MATERIALS OF INDUSTRIAL
IMPORTANCE
45 hrs (3 h / w)

UNIT - I

Recapitulation of s- and p-Block Elements **8h**
Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Mulliken, and Alfred - Rochow scales). Allotropy in C, S, and P. Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group.

UNIT – II

Silicate Industries **15h**
Glass: Glassy state and its properties, classification (silicate and non-silicate glasses). Manufacture and processing of glass. Composition and properties of the following types of glasses: Soda lime glass, lead glass, armoured glass, safety glass, borosilicate glass, fluorosilicate, coloured glass, photosensitive glass.
Ceramics: Important clays and feldspar, ceramic, their types and manufacture. High technology ceramics and their applications, superconducting and semiconducting oxides, fullerenes carbon nanotubes and carbon fibre.
Cements: Classification of cement, ingredients and their role, Manufacture of cement and the setting process, quick setting cements.

UNIT – III

Fertilizers: **8h**
Different types of fertilizers. Manufacture of the following fertilizers: Urea, ammonium nitrate, calcium ammonium nitrate, ammonium phosphates; polyphosphate, superphosphate, compound and mixed fertilizers, potassium chloride, potassium sulphate.

UNIT – IV

Surface Coatings: **8h**
Objectives of coatings surfaces, preliminary treatment of surface, classification of surface coatings. Paints and pigments-formulation, composition and related properties. Oil paint, Vehicle, modified oils, Pigments, toners and lakes pigments, Fillers, Thinners, Enamels, emulsifying agents. Special paints (Heat retardant, Fire retardant, Eco-friendly paint, Plastic paint), Dyes, Wax polishing, Water and Oil paints, additives, Metallic coatings (electrolytic and electroless), metal spraying and anodizing.

UNIT – V

Alloys: **6h**
Classification of alloys, ferrous and non-ferrous alloys, Specific properties of elements in alloys. Manufacture of Steel (removal of silicon decarbonization, demanganization, desulphurization dephosphorisation) and surface treatment (argon treatment, heat treatment, nitriding, carburizing). Composition and properties of different types of steels.

Chemical explosives:

Origin of explosive properties in organic compounds, preparation and explosive properties of lead azide, PETN, cyclonite (RDX). Introduction to rocket propellants.

Reference Books:

1. E. Stocchi: *Industrial Chemistry*, Vol-I, Ellis Horwood Ltd. UK.
2. R. M. Felder, R. W. Rousseau: *Elementary Principles of Chemical Processes*, Wiley Publishers, New Delhi.
3. W. D. Kingery, H. K. Bowen, D. R. Uhlmann: *Introduction to Ceramics*, Wiley Publishers, New Delhi.
4. J. A. Kent: *Riegel's Handbook of Industrial Chemistry*, CBS Publishers, New Delhi.
5. P. C. Jain & M. Jain: *Engineering Chemistry*, Dhanpat Rai & Sons, Delhi.
6. R. Gopalan, D. Venkappayya, S. Nagarajan: *Engineering Chemistry*, Vikas Publications, New Delhi.
7. B. K. Sharma: *Engineering Chemistry*, Goel Publishing House, Meerut

SEMESTER-VI

PAPER – VIII-A-3 : ANALYSIS OF APPLIED INDUSTRIAL PRODUCTS

45 hrs (3 h / w)

UNIT-I

Analysis of soaps: moisture and volatile matter, combined alkali, total fatty matter, free alkali, total fatty acid, sodium silicate and chlorides.

Analysis of paints : Vehicle and pigments , Barium Sulphate , total lead, lead chromate, iron pigments, zinc chromate

UNIT- II

Analysis of oils: saponification value, iodine value, acid value, ester value, bromine value, acetyl value.

Analysis of industrial solvents like benzene, acetone, methanol and acetic acid.,
Determination of methoxyl and N-methyl groups.,

UNIT-III

Analysis of fertilizers: urea, NPK fertilizer, super phosphate,

Analysis of DDT, BHC, endrin, endosulfone, malathion, parathion.,

Analysis of starch, sugars, cellulose and paper,

UNIT -IV

Gas analysis: carbon dioxide, carbon monoxide, oxygen, hydrogen, saturated hydrocarbon, unsaturated hydrocarbons, nitrogen, octane number, cetane number

Analysis of Fuel gases like: water gas, producer gas, kerosene (oil) gas.

Ultimate analysis : carbon, hydrogen, nitrogen, oxygen, phosphorus and sulfur.,

UNIT - V

Analysis of Complex materials:

Analysis of cement- loss on ignition, insoluble residue, total silica, sesqui oxides, lime, magnesia, ferric oxide, sulphuric anhydride.

Analysis of glasses - Determination of silica, sulphur, barium, arsenic, antimony, total R_2O_3 , calcium, magnesium, total alkalies, aluminium, chloride, fluoride

SUGGESTED BOOKS:

- 1.F.J.W elcher-Standard methods of analysis,
- 1.F.J.X ogel-A text book of quantitative Inorganic analysis-ELBS,
- 3.H.H.Willard and H.Deal- Advanced quantitative analysis- Van Nostrand Co,
- 4.F.D.Snell & F.M.Biffen-Commercial methods of analysis-D.B.Taraporavala & sons,
- 5.J.J.Elving and I.M.Kolthoff- Chemical analysis - A series of monographs on analytical chemistry and its applications -- Inter Science- Vol I to VII.,
- 6.G.Z.Weig - Analytical methods for pesticides, plant growth regulators and food additives - Vols I to VII,
- 7.Analytical Agricultural Chemistry by S.L.Chopra & J.S.Kanwar -- Kalyani Publishers



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2019-2020

I SEMESTER

Structure of Computer Science/Information Technology (II) Syllabus

I YEAR II SEMESTER

Paper-II: PROGRAMMING IN C

Course Objectives

1. Learn how to solve common types of computing problems.
2. Learn data types and control structures of C
3. Learn to map problems to programming features of C.
4. Learn to write good portable C programs.

Course Outcomes

Upon successful completion of the course, a student will be able to:

1. Appreciate and understand the working of a digital computer
2. Analyze a given problem and develop an algorithm to solve the problem
3. Improve upon a solution to a problem
4. Use the 'C' language constructs in the right way
5. Design, develop and test programs written in 'C'

UNIT I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts.

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

UNIT III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array, Operations on Array: One dimensional array, Two dimensional Arrays, Multidimensional Arrays.

Strings: Introduction, Characters, String handling functions.

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions

UNIT IV

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables - - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function.

Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Arrays of Structures – Structures and Functions – Unions – Enumerated Data Types

Structure of Computer Science/Information Technology (IT) Syllabus

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.

REFERENCE BOOKS

1. Introduction to C programming by REEMA THAREJA from OXFORD UNIVERSITY PRESS
2. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ. 2002.
4. Henry Mullish & Huubert L.Cooper: The Spirit of C An Introduction to modern Programming, Jaico Pub. House,1996.

Student Activity:

1. Write a program for preparing the attendance particulars of students of your college at the end of semester according to following guidelines
 - a. Above 75 % promoted
 - b. Above 65% condoned
 - c. Below 65% detained
2. Write a program for creating timetable or your class taking work load of faculty into consideration.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2019-2020

II SEMESTER

I YEAR II SEMESTER

Paper-II: PROGRAMMING IN C

Course Objectives

1. Learn how to solve common types of computing problems.
2. Learn data types and control structures of C
3. Learn to map problems to programming features of C.
4. Learn to write good portable C programs.

Course Outcomes

Upon successful completion of the course, a student will be able to:

1. Appreciate and understand the working of a digital computer
2. Analyze a given problem and develop an algorithm to solve the problem
3. Improve upon a solution to a problem
4. Use the 'C' language constructs in the right way
5. Design, develop and test programs written in 'C'

UNIT I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts.

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

UNIT III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array, Operations on Array: One dimensional array, Two dimensional Arrays, Multidimensional Arrays.

Strings: Introduction, Characters, String handling functions.

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions.

UNIT IV

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables - - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function.

Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Arrays of Structures – Structures and Functions – Unions – 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.

REFERENCE BOOKS

1. Introduction to C programming by REEMA THAREJA from OXFORD UNIVERSITY PRESS
2. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ. 2002.
4. Henry M ullish & Huubert L Cooper: The Spirit of C An Introduction to modern Programming, Jaico Pub. House, 1996.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2019-2020

III SEMESTER

Structure of Computer Science/Information Technology (IT) Syllabus

II YEAR III SEMESTER

Paper-III: OBJECT ORIENTED PROGRAMMING USING JAVA

Course Objectives

As the business environment becomes more sophisticated, the software development (software engineering is about managing complexity) is becoming increasingly complex. As of the best programming paradigm which helps to eliminate complexity of large projects, Object Oriented Programming (OOP) has become the predominant technique for writing software in the past decade. Many other important software development techniques are based upon the fundamental ideas captured by object-oriented programming.

Course Outcomes

At the end of this course student will:

1. Understand the concept and underlying principles of Object-Oriented Programming
2. Understand how object-oriented concepts are incorporated into the Java programming language
3. Develop problem-solving and programming skills using OOP concept
4. Understand the benefits of a well structured program
5. Develop the ability to solve real-world problems through software development in high-level programming language like Java
6. Develop efficient Java applets and applications using OOP concept
7. Become familiar with the fundamentals and acquire programming skills in the Java language.

UNIT – I

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Object Oriented paradigm –Basic concepts of Object Oriented Programming – Benefits of OOP –Applications of OOP.

Overview of Java Language: Simple Java Program – Java Program Structure – Java Tokens- Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments.

Constants, Variables and Data types: Constants – Variables – Data types – Declaration of Variables-Giving Values to variables- Scope of Variables-Symbolic Constants-Type Casting.

UNIT – II

Operators and Expressions: Arithmetic Operators – Relational Operators- Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Operator Precedence and Associativity.

Decision Making and Branching: Decision Making with If statement – Simple If Statement-If else Statement-Nesting If Else Statement- the Else If Ladder-The switch Statement – The ?: operator.

Decision Making and Looping: The while statement – The do statement – The for statement – Jumps in Loops, labelled loops.

UNIT – III

Class, Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing class members – Constructors – Methods Overloading – Static Members – Nesting of Methods, Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Abstract Methods and Classes – Visibility Control.

Arrays, Strings and Vectors: One-dimensional Arrays-creating an Array – Two dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types.

UNIT – IV

Interfaces: Multiple Inheritance - Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables.

Packages: Java API packages – Using system Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package – Hiding Classes – Static Import.

Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread –Using Thread Methods –Thread Exceptions – Thread Priority – Synchronization.

UNIT - V

Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions – Using Exceptions for debugging.

Applet Programming: How Applets differ from Applications – Preparing to write Applets – Building Applet Code – Applet Life Cycle – Creating an executable Applet – Designing a WebPage – Applet Tag – Adding Applet to HTML file – Running the Applet – More about Applet Tag – Passing parameters to Applets – Aligning the display – More about HTML tags – Displaying Numerical Values – Getting Input from the user.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2019-2020

IV SEMESTER

II YEAR IV SEMESTER

Paper-IV: DATA STRUCTURES

Course Objectives

To introduce the fundamental concept of data structures and to emphasize the importance of data structures in developing and implementing efficient algorithms.

Course Outcomes

After completing this course satisfactorily, a student will be able to:

1. Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
2. Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
3. Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
4. Demonstrate different methods for traversing trees
5. Compare alternative implementations of data structures with respect to performance
6. Compare and contrast the benefits of dynamic and static data structures implementations
7. Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack.
8. Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.

UNIT I

Concept of Abstract Data Types (ADTs)- Data Types, Data Structures, Storage Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Data Structures.

Linear Lists – ADT, Array and Linked representations, Pointers.

Linked Lists: Single Linked List, Double Linked List, Circular Linked List, applications

UNIT II

Stacks: Definition, ADT, Array and Linked representations, Implementations and Applications

Queues: Definition, ADT, Array and Linked representations, Circular Queues, Dequeues, Priority Queues, Implementations and Applications.

UNIT III

Trees: Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) – Definition, ADT, Operations and Implementations, BST Applications. Introduction to Threaded Binary Trees, Heap trees.

UNIT IV

Graphs – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees

UNIT- V

Sorting and Searching: Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential and Binary Searching.

REFERENCE BOOKS

1. D S Malik, Data Structures Using C++, Thomson, India Edition 2006.
2. Sahni S, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2002.
3. SamantaD, Classic Data Structures, Prentice-Hall of India, 2001.
4. Heilman G L, Data Structures and Algorithms with Object-Oriented Programming, Tata McGraw-Hill, 2002. (Chapters I and 14).
5. Tremblay P, and Sorenson P G, Introduction to Data Structures with Applications, Tata McGraw-Hill,

Student activity:

1. Create a visible stack using C-graphics
2. Create a visible Queue using C-graphics

III YEAR V SEMESTER

Paper-V: Data Base Management System

Course Objective:

Design & develop database for large volumes & varieties of data with optimized data processing techniques.

Course Outcomes

On completing the subject, students will be able to:

1. Design and model of data in database.
2. Store, Retrieve data in database.

UNIT I

Overview of Database Management System: Introduction, Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management System, file-based system, Drawbacks of file-Based System, advantages of DBMS, Data models, Database Architecture.

UNIT II

Relational Model: Introduction, CODD's Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra.

UNIT III

Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, IS A relationship and attribute inheritance, multiple inheritance, advantages of ER modelling.

UNIT IV

Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operations, View, Sub Query, Embedded SQL,

UNIT V

PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Exceptions Handling.

III YEAR V SEMESTER

Paper VI : Software Engineering

Course Objectives

The Objective of the course is to assist the student in understanding the basic theory of software engineering, and to apply these basic theoretical principles to a group software development project.

Course outcomes

1. Ability to gather and specify requirements of the software projects.
2. Ability to analyze software requirements with existing tools
3. Able to differentiate different testing methodologies
4. Able to understand and apply the basic project management practices in real life projects
5. Ability to work in a team as well as independently on software projects

UNIT I

INTRODUCTION: Software Engineering Process paradigms - Project management - Process and Project Metrics – software estimation - Empirical estimation models - Planning - Risk analysis.

UNIT II

REQUIREMENTS ANALYSIS: Requirement Engineering Processes – Feasibility Study – Software Requirement Analysis – Analysis Concepts and Principles – Analysis Process – Analysis Model.

UNIT III

SOFTWARE DESIGN: Software design - Abstraction - Modularity - Software Architecture - Effective modular design - Cohesion and Coupling - Architectural design and Procedural design - Data flow oriented design.

UNIT IV

USER INTERFACE DESIGN AND REAL TIME SYSTEMS: User interface design - Human computer interaction - Human - Computer Interface design - Interface design - Interface standards.

UNIT V

SOFTWARE QUALITY AND TESTING: Software Quality Assurance - Software Reliability - Software testing - Path testing – Control Structures testing - Black Box testing - Integration, Validation and system testing.

III YEAR VI SEMESTER

Paper-VII : Web Technologies

Course Objective

- To provide knowledge on web architecture, web services, client side and server side scripting technologies to focus on the development of web-based information systems and web services.
- To provide skills to design interactive and dynamic web sites.

Course Outcome

1. To understand the web architecture and web services.
2. To practice latest web technologies and tools by conducting experiments.
3. To design interactive web pages using HTML and Style sheets.
4. To study the framework and building blocks of .NET Integrated Development Environment.
5. To provide solutions by identifying and formulating IT related problems.

Unit I

HTML: Basic HTML, Document body, Text, Hyper links, adding more formatting, Lists, Tables using images. **More HTML:** Multimedia objects, Frames, Forms towards interactive, HTML document heading detail.

Unit II

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit III

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions. **Objects in JavaScript:** Data and objects in JavaScript, regular expressions, exception handling.

Unit IV

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images.

Unit V

XML: defining data for web applications, basic XML, document type definition, presenting XML, document object model. Web Services.

III YEAR VI SEMESTER
Cluster Elective VIII A
Paper-VIII–A1 : Foundations of Data Science

Course Objectives

Modern scientific, engineering, and business applications are increasingly dependent on data, existing traditional data analysis technologies were not designed for the complexity of the modern world. Data Science has emerged as a new, exciting, and fast-paced discipline that explores novel statistical, algorithmic, and implementation challenges that emerge in processing, storing, and extracting knowledge from Big Data.

Course Outcomes

1. Able to apply fundamental algorithmic ideas to process data.
2. Learn to apply hypotheses and data into actionable predictions.
3. Document and transfer the results and effectively communicate the findings using visualization techniques.

UNIT I

INTRODUCTION TO DATA SCIENCE :Data science process – roles, stages in data science project – working with data from files – working with relational databases – exploring data – managing data – cleaning and sampling for modeling and validation – introduction to NoSQL.

UNIT II

MODELING METHODS :Choosing and evaluating models – mapping problems to machine learning, evaluating clustering models, validating models – cluster analysis – K-means algorithm.

UNIT III

INTRODUCTION TO R Language: Reading and getting data into R – ordered and unordered factors – arrays and matrices – lists and data frames.

UNIT IV

MAP REDUCE: Introduction – distributed file system – algorithms using map reduce, Matrix-Vector Multiplication by Map Reduce – Hadoop - Understanding the Map Reduce architecture.

UNIT V

DELIVERING RESULTS :Documentation and deployment – producing effective presentations– Introduction to graphical analysis – plot() function – displaying multivariate data.

Reference Books

- 1.Nina Zumel, John Mount, “Practical Data Science with R”, Manning Publications, 2014.
- 2.Jure Leskovec, Anand Rajaraman, Jeffrey D.Ullman, “Mining of Massive Datasets”, Cambridge University Press, 2014.
- 3.Mark Gardener, “Beginning R - The Statistical Programming Language”, John Wiley & Sons, Inc., 2012.
- 4.W. N. Venables, D. M. Smith and the R Core Team, “An Introduction to R”, 2013.
- 5.Tony Ojeda, Sean Patrick Murphy, Benjamin Bengfort, Abhijit Dasgupta, “Practical Data Science Cookbook”, Packt Publishing Ltd., 2014.
- 6.Nathan Yau, “Visualize This: The FlowingData Guide to Design, Visualization, and Statistics”, Wiley, 2011.
- 7.Boris lublinsky, Kevin t. Smith, Alexey Yakubovich, “Professional Hadoop Solutions”, Wiley, ISBN: 9788126551071, 2015.

Student Activity:

1. **Collect data from any real time system and create clusters using any clustering algorithm**
2. **Read the student exam data in R perform statistical analysis on data and print results.**

Paper-VIII-A2 : BIG DATA TECHNOLOGY

Course Objective

The Objective of this course is to provide practical foundation level training that enables immediate and effective participation in big data projects. The course provides grounding in basic and advanced methods to big data technology and tools, including MapReduce and Hadoop and its ecosystem.

Course Outcome

1. Learn tips and tricks for Big Data use cases and solutions.
2. Learn to build and maintain reliable, scalable, distributed systems with Apache Hadoop.
3. Able to apply Hadoop ecosystem components.

UNIT I

INTRODUCTION TO BIG DATA: Introduction – distributed file system – Big Data and its importance, Four V's in big data, Drivers for Big data, Big data analytics, Big data applications. Algorithms using map reduce, Matrix-Vector Multiplication by Map Reduce.

UNIT II

INTRODUCTION HADOOP : Big Data – Apache Hadoop & Hadoop Eco-System – Moving Data in and out of Hadoop – Understanding inputs and outputs of MapReduce - Data Serialization.

UNIT- III

HADOOP ARCHITECTURE: Hadoop Architecture, Hadoop Storage: HDFS, Common Hadoop Shell commands , Anatomy of File Write and Read., NameNode, Secondary NameNode, and DataNode.

UNIT-IV

Hadoop Map Reduce paradigm, Map and Reduce tasks, Job, Task trackers - Cluster Setup – SSH & Hadoop Configuration – HDFS Administering –Monitoring & Maintenance.

UNIT-V

HIVE AND HIVEQL, HBASE:-Hive Architecture and Installation, Comparison with Traditional Database, HiveQL - Querying Data - Sorting And Aggregating, Map Reduce Scripts, Joins & Subqueries.

Reference Books

1. Boris lublinsky, Kevin t. Smith, Alexey Yakubovich, “Professional Hadoop Solutions”, Wiley, ISBN: 9788126551071, 2015.
2. Chris Eaton, Dirk deroos et al. , “Understanding Big data ”, McGraw Hill, 2012.
3. Tom White, “HADOOP: The definitive Guide” , O Reilly 2012.
4. Vignesh Prajapati, “Big Data Analytics with R and Haoop”, Packet Publishing 2013.
5. Tom Plunkett, Brian Macdonald et al, “Oracle Big Data Handbook”, Oracle Press, 2014.
6. Jy Liebowitz, “Big Data and Business analytics”,CRC press, 2013.

Student Activity:

1. Collect real time data and justify how it has become Big Data
2. Reduce the dimensionality of a big data using your own map reducer

Paper-VIII-A3 : COMPUTING FOR DATA ANALYTICS

Course Objectives

The objective of this course is to teach fundamental concepts and tools needed to understand the emerging role of business analytics in Organizations.

Course Outcomes

1. Learn the Big Data in Technology Perspective.
2. Understanding of the statistical procedures most often used by practicing engineers
3. Understand Forecasting methods and apply for business applications.

UNIT – I

DATA ANALYTICS LIFE CYCLE: Introduction to Big data Business Analytics - State of the practice in analytics role of data scientists - Key roles for successful analytic project - Main phases of life cycle - Developing core deliverables for stakeholders.

UNIT – II

STATISTICS Sampling Techniques : Data classification, Tabulation, Frequency and Graphic representation - Measures of central value - Arithmetic mean, Geometric mean, Harmonic mean, Mode, Median, Quartiles, Deciles, Percentile.

UNIT – III

PROBABILITY AND HYPOTHESIS TESTING: Random variable, distributions, two dimensional R.V, joint probability function, marginal density function. Random vectors - Some special probability distribution - Binomial, Poison, Geometric, uniform, exponential, normal, gamma and Erlang. Multivariate normal distribution.

UNIT – IV

PREDICTIVE ANALYTICS: Predictive modeling and Analysis - Regression Analysis, Multicollinearity , Correlation analysis, Rank correlation coefficient, Multiple correlation, Least square, Curve fitting and good ness of fit.

UNIT – V

TIME SERIES FORECASTING AND DESIGN OF EXPERIMENTS :Forecasting Models for Time series : MA, SES, TS with trend, season - Design of Experiments, one way classification, two way classification, ANOVA, Latin square, Factorial Design.

Reference Books

1. Chris Eaton, Dirk Deroos, Tom Deutsch et al., “Understanding Big Data”, McGrawHill, 2012.
2. Alberto Cordoba , “Understanding the Predictive Analytics Lifecycle”, Wiley, 2014.
3. Eric Siegel, Thomas H. Davenport , “Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die”, Wiley, 2013.
4. James R Evans, “Business Analytics – Methods, Models and Decisions”, Pearson 2013.
5. R. N. Prasad, Seema Acharya, “Fundamentals of Business Analytics”, Wiley, 2015.
6. S M Ross, “Introduction to Probability and Statistics for Engineers and Scientists”, Academic Foundation, 2011.
7. David Hand, Heiki Mannila, Padhria Smyth, “Principles of Data Mining”, PHI 2013.
8. Spyros Makridakis, Steven C Wheelwright, Rob J Hyndman, “Forecasting methods and applications”, Wiley 2013(Reprint).

Student Activity:

1. Collect temperatures of previous months and prepare a logic to estimate the temperature of next one week
2. Collect real time data and apply statistical techniques to classify it.

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-1

Distributed Systems

Course Objectives

- To expose the fundamentals of distributed computer systems, assuming the availability of facilities for data transmission.
- To discuss multiple levels of distributed algorithms, distributed file systems, distributed databases, security and protection.

Course Outcomes

- Create models for distributed systems.
- Apply different techniques learned in the distributed system.

UNIT I

Introduction to Distributed Computing Systems, System Models, and Issues in Designing a Distributed Operating System, Examples of distributed systems.

UNIT II

Features of Message Passing System, Synchronization and Buffering, Introduction to RPC and its models, Transparency of RPC, Implementation Mechanism, Stub Generation and RPC Messages, Server Management.

UNIT III

Introduction, Design and implementation of DSM system, Granularity and Consistency Model, Advantages of DSM, Clock Synchronization, Event Ordering, Mutual exclusion, Deadlock.

UNIT IV

Task Assignment Approach, Load Balancing Approach, Load Sharing Approach, Process Migration and Threads.

UNIT V

File Models, File Accessing Models, File Sharing Semantics, File Caching Schemes, File Replication, Atomic Transactions, Access control.

Reference Books

1. Pradeep. K. Sinha: “ Distributed Operating Systems: Concepts and Design ”, PHI, 2007.
- 2 .George Coulouris, Jean Dollimore, Tim Kindberg: “ Distributed Systems” , Concept and Design, 3rd Edition, Pearson Education, 2005.

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-2

Cloud Computing

Course Objectives:

The student will learn about the cloud environment, building software systems and components that scale to millions of users in modern internet, cloud concepts capabilities across the various cloud service models including IaaS, PaaS, SaaS, and developing cloud based software applications on top of cloud platforms.

Course Outcomes

1. Compare the strengths and limitations of cloud computing
2. Identify the architecture, infrastructure and delivery models of cloud computing
3. Apply suitable virtualization concept.
4. Choose the appropriate cloud player , Programming Models and approach.
5. Address the core issues of cloud computing such as security, privacy and interoperability
6. Design Cloud Services and Set a private cloud

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, Map Reduce, 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.

UNIT III

Cloud Application Design: Introduction, Design Considerations for Cloud Applications, Reference Architecture for Cloud Applications, Cloud Application 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.

TEXT BOOK:

1. Cloud Computing A Hands On Approach By Arshdeep Bahga And Vijay Madiseti From University Press.

Reference Books

1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte Robert Elsenpeter TATA McGraw- Hill , New Delhi - 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
4. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madiseti, University Press
5. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christenvecctiola, S Tammarai selvi, TMH

Student Activity:

1. Prepare the list of companies providing cloud services category wise.
2. Create a private cloud using local server

Cloud Computing Lab

Outcomes: Learner will be able to...

1. Appreciate cloud architecture
2. Create and run virtual machines on open source OS
3. implement Infrastructure , storage as a Service.

Use Eucalyptus or Open Nebula or equivalent to set up the cloud and demonstrate.

1. Find procedure to run the virtual machine of different configuration. Check how many virtual machines can be utilized at particular time.
2. Find procedure to attach virtual block to the virtual machine and check whether it holds the data even after the release of the virtual machine.
3. Install a C compiler in the virtual machine and execute a sample program.

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-3

Cryptography and Network Security

Course Objectives:

The student will learn about the different security issues in different environments. This will also help us to learn different sciences in providing security like cryptography and steganography.

Course Outcomes

1. Compare the strengths and limitations of different security mechanisms
2. Address the core issues of security and transmission of information.
3. Develop simple and new algorithms.

UNIT 1:

Introduction: Attacks, services and mechanisms, security attacks, security services, a model for internet work security.

Classical techniques: Conventional encryption model, steganography, classical encryption techniques

Modern techniques: Simplified DES, block cipher principles, data encryption standard, strength of DES, differential and linear crypt analysis, block cipher design principles and modes of operations.

UNIT 2:

Conventional encryption: Placement of encryption function, traffic confidentiality, key distribution, random number generation.

Public key cryptography: Principles, RSA algorithm, key management, Diffie-Hellman key exchange, elliptic curve cryptography.

UNIT 3:

Message authentication and hash functions: Authentication requirements and functions, Message Authentication, Hash functions, security of hash functions and Macs.

UNIT 4:

Hash and MAC algorithms: MD file, message digest algorithm, secure hash algorithm

Digital signatures and authentication protocols: Digital signatures, authentication protocols, digital signature standards

UNIT 5:

Authentication applications: Kerberos, X.509 directory authentication service.

Electronic mail security: Pretty good privacy, S/MIME.

Text Books:

2. Cryptography and Network Security: Principles and Practice – William Stallings, Pearson Education.

3. Network Security Essentials (Applications and Standards) by William Stallings, Pearson Education.

Reference Books:

1. Fundamentals of Network Security by Eric Maiwald (Dreamtech Press)

2. Network Security – Private Communication in a Public World by Charlie kaufman, Radia Perlman and Mike Speciner, Pearson/PHI.

3. Introduction to Cryptography, Buchmann, Springer.

Cryptography and Network Security Lab

Use C/C++ language and execute the following concepts in security:

1. Develop a program for Hill cipher algorithm..
2. Develop a program for Simplified DES.
3. Develop a program for RSA algorithm.
4. Develop a program for Diffie-Hellmen key exchange.
5. Develop programs for message authenticators with different techniques.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ELECTRONICS

SYLLABUS 2019-2020

I SEMESTER

B.Sc. Electronics Syllabus under CBCS
w.e.f. 2015-16 (revised in April 2016)

SEMESTER-I

PAPER – I

BASIC CIRCUIT THEORY

UNIT- I: (12Hrs)

SINUSOIDAL ALTERNATING WAVEFORMS:

Definition of current and voltage. The sine wave, general format of sine wave for voltage or current, phase relations, average value, effective (R.M.S) values. Differences between A.C and D.C. **Basic elements and phasors:** Basic Response of R, L & C elements, frequency response of basic elements. **(problems)**

UNIT-II: (12hrs)

PASSIVE NETWORKS: (D.C)

Kirchhoff's current and Voltage Law's, Resistor, Capacitor, and Inductor, series and parallel networks R-L and R-L-C Circuits with DC inputs. Branch current method, Mesh Analysis, Nodal Analysis, star to delta & delta to star conversions.

UNIT-III: (14hrs)

NETWORKS THEOREMS: (D.C)

Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power, Milliman and Reciprocity theorems **(problems)**.

UNIT-IV: (12hrs)

RC AND RL CIRCUITS:

Transient response of RL and RL circuits with step input, Time constants, Frequency response of RC and RL circuits, their action as low pass, high pass and Band pass filters. Passive differentiating and integrating circuits. **(problems)**

UNIT-V: (10hrs)

SERIES AND PARALLEL RESONANCE CIRCUITS:

Series resonance and parallel resonance circuits, Q - Factor, Selectivity and band width, Comparison of series and parallel resonance, Tank circuit-LC oscillations.

TEXT BOOKS-



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF ELECTRONICS

SYLLABUS 2019-2020

II SEMESTER

B.Sc. Electronics Syllabus under CBCS
w.e.f. 2015-16 (revised in April 2016)

Semester-2

PAPER – 2

Electronic Devices and Circuits

UNIT 1: (12Hrs)

PN JUNCTION DIODES:

P-N junction Diode, Depletion region, Barrier Potential, Working in Forward and Reverse bias condition – Junction capacitance, Diode current equation– Effect of temperature on reverse saturation current – construction, working, V-I characteristics and simple applications of varactor diode, Zener diode and Tunnel diode.

UNIT –II:(12hrs)

BIPOLAR JUNCTION TRANSISTOR AND ITS BIASING: (D.C)

Introduction, Transistor Construction, Operation, and characteristics of CB, CE, and CC – Configurations. Complete hybrid equivalent model, Transistor as a switch

BJT Biasing: Fixed-Bias Circuit, Emitter-Stabilized Bias Circuit, Voltage-Divider Bias, Bias Stabilization.

UNIT-III:(16hrs)

FIELD EFFECT TRANSISTORS, UJT & SCR:

Introduction, Construction, Operation and Characteristics of FET/JFET, Drain and Transfer characteristics, Depletion-type, and Enhancement-Type MOSFETs.

FET Biasing: Fixed-Bias Configuration, Self-Bias Configuration, Voltage-Divider Biasing, UJT construction-working, V-I characteristics, UJT as a Relaxation oscillator.

UNIT IV: (08hrs)

PHOTO ELECTRIC DEVICES:

Light-Emitting Diodes (LEDs), IR Emitters, Photo diode, Photo transistors,
Structure and operation of LDR, and Opto-Isolators.

UNIT-V:(12hrs)

POWER SUPPLIES:

Rectifiers:-Half wave ,full wave and bridge rectifiers-Efficiency-ripple factor-
Regulation, Types of filter-choke input(inductor) filter shunt L-section& π -section
filters.Three terminal fixed voltage I.C.regulators(78XX and &79XX)-Principle

and

working of SMPS(switch mode power supplies)

TEXT BOOKS:

1. Electronic Devices and Circuit Theory --- **Robert L. Boylestad & Louis Nashelsky.**
2. Electronic Devices and Circuits I – **T.L.Floyd- PHI Fifth Edition**



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ELECTRONICS

SYLLABUS 2019-2020

III SEMESTER

B.Sc. Electronics Syllabus under CBCS
w.e.f. 2015-16 (revised in April 2016)

SEMESTER – III

PAPER – 3

Digital Electronics

Unit – I (9hrs)

NUMBER SYSTEM AND CODES: Decimal, Binary, Hexadecimal, Octal, BCD, Conversions, Complements (1^2 's, 2^2 's, 9^2 's and 10^2 's), Addition, Subtraction, Gray, Excess-3 Code conversion from one to another.

Unit- II (12hrs)

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: 4,5 variables), don't care condition.

Unit-III (15hrs)

COMBINATIONAL DIGITAL CIRCUITS:

Adders-Half & full adder, Subtractor-Half and full subtractors, Parallel binary adder, Magnitude Comparator, Multiplexers (2:1,4:1) and Demultiplexers (1:2,4:1), Encoder

(8-line-to-3-line) and Decoder (3-line-to-8-line). IC-LOGIC FAMILIES: TTL logic, DTL logic, RTL Logic, CMOS Logic families (NAND&NOR Gates), Bi-CMOS inverter

UNIT-IV (14hrs)

SEQUENTIAL DIGITAL CIRCUITS:

Flip Flops: S-R FF, J-K FF, T and D type FFs, Master-Slave FFs, Excitation tables, Registers:-shift left register, shift right register, Counters - Asynchronous-Mod16, Mod-10, Mod-8, Down counter, Synchronous-4-bit & Ring counter.

UNIT-V (10hrs)

MEMORY DEVICES:

General Memory Operations, ROM, RAM (Static and Dynamic), PROM, EPROM, EEPROM, EAROM, PLA(Programmable logic Array), PAL(Programmable Array Logic)

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.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ELECTRONICS

SYLLABUS 2019-2020

IV SEMESTER

B.Sc. Electronics Syllabus under CBCS

SEMESTER – IV

PAPER – 4

Analog and Digital ic - applicitions

(Operational – Amplifiers)

Unit – I (10hrs)

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 (15 hrs)

OP-AMP CIRCUITS: voltage regulator, comparator, zerocross detecting circuit, instrumentational amplifier, multivibrators-astable, monostable, Bi-stable, Schmitt trigger. sine wave generator, square wave generator, triangular wave generator, Active filters(Basics)-low pass, high pass, band pass filters
IC-555 –functional block diagram and mention it's applications

Unit-III (15hrs):

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 (10hrs)

DATA CONVERTERS:

A/D converter:- Successive Approximation ADC, -Single slope and dual slope converter, Sigma-delta ADC, D/A converter: R-2R Ladder network, Binary Weighted .

UNIT-V (10hrs)

DIGITAL SYSTEM INTERFACING AND APPLICATIONS: interfacing of LED's

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

B.Sc. Electronics CBCS Syllabus

3RD YEAR

Semester - V

Paper- V

TITLE: ANALOG AND DIGITAL COMMUNICATIONS

OBJECTIVES:

- This course provides a thorough introduction to the basic principles and techniques used in analog and digital communications.
- The course will introduce analog and digital modulation techniques.
- Communication receiver and transmitter design, baseband and band pass communication techniques, line coding techniques, noise analysis, and multiplexing techniques.
- The course also introduces analytical techniques to evaluate the performance of communication systems.

UNIT –I (10Hrs) AMPLITUDE MODULATION:

Need for modulation, amplitude modulation-frequency spectrum of AM wave, representation of AM, power relations in the AM wave. Generation of AM- Transistor modulators.

Suppression of carrier, balanced modulator, suppression of one side band- the filter method, phase shift method.

UNIT –II (10Hrs) FREQUENCY MODULATION:

Theory of FM, mathematical representation of FM, frequency spectrum of FM wave, narrow band FM, wide band FM, power contents of the carrier and sidebands, Generation of FM signals – Reactance modulator.

UNIT –III (10Hrs) BASIC RECEIVER CIRCUITS:

Noise – Thermal, Shot, Noise figure, Super heterodyne Receiver block diagram, FM receiver, discriminators- slope, balanced slope, phase discriminator & Ratio detector

UNIT –IV (12Hrs) RADIO WAVE PROPAGATION:

Communication bands, Electromagnetic waves, propagation of waves - ground waves, Ionosphere & Space waves. ***PULSE MODULATION:*** Introduction, Sampling Theorem, TDM, FDM, PAM- Generation & Detection PWM- Generation & Detection, PPM- Generation & Detection

UNIT –V (18Hrs) DIGITAL COMMUNICATIONS:

PCM – PCM encoders, Quantization noise, S/N ratio of PCM system, relation between S/N ratio & BW, Companding. Advantages of digital over analog communications. Advantages of shift keying over digital communication, Types of shift keying, ASK – Generation & Detection, FSK – Generation & Detection, PSK – Generation & Detection.

TEXT BOOKS:

1. Electronic Communications - George Kennedy
2. Antennas and Wave Propagation – G.S.N.Raju – PHI
3. Principles of communication system –Herbert Taub & D.I. Schilling

REFERENCES:

1. Electronic Communications – Roody & Colen
2. Communication Systems – Hayken --- 4th Edition
3. Advance Electronic communication system --- Tomasi wayne
4. Modern digital and analog communication system –B.P.lathi

OUTCOMES:

On successful completion of the course students will be able to:

I

TITLE: MICROPROCESSOR SYSTEMS

OBJECTIVES:

- To understand basic architecture of 16 bit and 32 bit microprocessors.
- To understand interfacing of 16 bit microprocessor with memory and peripheral chips involving system design.
- To understand techniques for faster execution of instructions and improve speed of operation and performance of microprocessors
- To understand RISC based microprocessors.
- To understand concept of multi core processors.

UNIT -I: (15Hrs)

CPU ARCHITECTURE

Introduction to Microprocessor, INTEL -8085(p) Architecture, CPU, ALU unit, Register organization, Address, data and control Buses. Pin configuration of 8085, 8086 Architecture, Evaluation of Microprocessor, Internal operation, Pin description. Instruction format, Machine language instructions, Instruction Execution timing, Addressing modes

UNIT -II: (10 Hrs)

INSTRUCTION SET:

Data transfer Instruction, Logical Instructions, Arithmetic Instructions, Branch Instructions, Flag Manipulation, Shift and rotate Instruction, Loop Instruction

UNIT -III: (15Hrs)

Assembly Language Programming. Programmes for Addition, Subtraction, Multiplication, Find the largest and smallest number in an array. **Modular programming**:-Linking and Relocation, Stacks, Procedures, Interrupts And Interrupt Routines.

UNIT -IV: (10Hrs)

Basic 8086 Configurations – Minimum mode and Maximum Mode, Interrupt Priority Management I/O Interfaces: Serial Communication interfaces, Parallel Communication, Programmable Timers, Keyboard and display, DMA controller

UNIT -V: (10Hrs)

ARM PROCESSOR

Introduction to 16/32 bit processors, Arm architecture & organization, Arm based MCUs, Programming model, Instruction

TEXT BOOKS:

1. Microcomputer Systems the 8086/8088 family – YU-Cheng Liu and Glenn SA Gibson
2. Microcontrollers Architecture Programming, Interfacing and System Design
– **Raj Kamal Chapter: 15.1, 15.2, 15.3, 15.4.1**
3. 8086 and 8088 Microprocessor by Tribel and avatar singh

REFERENCES:

1. Microprocessors and Interfacing – Douglas V.Hall
2. Microprocessor and Digital Systems – Douglas V. Hall
3. Advanced Microprocessors & Microcontrollers - B.P.Singh & Renu Singh – New Age
4. The Intel Microprocessors – Architecture, Programming and Interfacing – Bary B. Brey.
5. Arm Architecture reference manual –Arm ltd.

OUTCOMES:

- The student can gain good knowledge on microprocessor and implement in practical applications
- Design system using memory chips and peripheral chips for 16 bit 8086 microprocessor.
- Understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
- Understand multi core processor and its advantages

**ELECTRONICS LAB-V
MICROPROCESSOR LAB**

LAB LIST:

1. Program Toadd To Decimal Numbers
 2. Subtraction Of Two Decimal Numbers
 3. Add Two Words In Memory Location And Store The Result In Subsequent Memory Location
-

B.Sc. Electronics CBCS Syllabus

3RD YEAR

VI SEMESTER

PAPER-VII: MICRO CONTROLLER AND INTERFACING

OBJECTIVES:

- To understand the concepts of microcontroller based system.
- To enable design and programming of microcontroller based system.
- To know about the interfacing Circuits.

UNIT-I: (10Hrs) Introduction, comparison of Microprocessor and micro controller, Evolution of microcontrollers from 4-bit to 32 bit, Development tools for micro controllers, Assembler-Compiler-Simulator/Debugger.

UNIT -II: (10Hrs)

Microcontroller Architecture: Overview and block diagram of 8051, Architecture of 8051, program counter and memory organization, Data types and directives, PSW register, Register banks and stack, pin diagram of 8051, Port organization, Interrupts and timers.

UNIT-III:(10Hrs)

Addressing modes, instruction set of 8051: Addressing modes and accessing memory using various addressing modes, instruction set: Arithmetic, Logical, Simple bit, jump, loop and call instructions and their usage. Time delay generation and calculation, Timer/Counter Programming,

Unit -IV: (15Hrs)

Assemble language programming Examples: Addition, Multiplication, Subtraction, division, arranging a given set of numbers in largest/smallest order.

UNIT-V: (15Hrs)

Interfacing and Application of Microcontroller: Interfacing of – PPI 8255, DAC (0804), Temperature measurement (LM35), interfacing seven segment displays, displaying information on a LCD, control of a stepper Motor (Uni-Polar), Interfacing a 4*3 matrix keypad. Generation of different types of waveforms using DAC.

**3RD YEAR
VI SEMESTER**

Cluster-1

PAPER- VIII (A1): EMBEDDED SYSTEMS DESIGN

TITLE: Embedded Systems Design

OBJECTIVES:

design embedded computer system hardware
design, implement, and debug multi-threaded application software that operates under real-time constraints on embedded computer systems
use and describe the implementation of a real-time operating system on an embedded computer system
formulate an embedded computer system design problem including multiple constraints, create a design that satisfies the constraints, implement the design in hardware and software, and measure performance against the design constraints
create computer software and hardware implementations that operate according to well-known standards
organize and write design documents and project reports
organize and make technical presentations that describe a design.

UNIT 1: (10Hrs)

Introduction to Embedded Systems:

Embedded systems overview, Design Challenge, Processor Technology, IC Technology, and Design Technology.

UNIT 2: (15Hrs)

Custom Single Purpose Processor – Hardware Development:

Introduction, Combinational logic, Sequential logic, Custom Single Purpose Processor Design, RT-Level Custom Single-Purpose Processor.

UNIT 3: (15Hrs)

General Purpose Processor – Software Development:

Introduction, Basic Architecture, Operation, Programmer's View, ASIPs, and Development Environment: Host and Target Machines, Linker / Locators for Embedded Software, Getting Embedded Software into the target system. Debugging Techniques: Testing on your Host Machine, and Instruction Set Simulators.

UNIT 4: (10Hrs)

RTWA for Embedded Systems:

Introduction, Timers, Counters and Watchdog Timers, UART, Pulse Width Modulators, LCD Controllers, Keypad Controllers, Stepper Motor Controllers, Analog – to – Digital Converters, and Real Time Clocks.

UNIT 5: (10Hrs)

Advanced Communication Principles:

UNIT 5: (10Hrs)

Advanced Communication Principles:

Parallel Communication, Serial Communication, Wireless Communication, Serial Protocols: I²C, CAN, FireWire, and USB. Parallel Protocols: PCI BUS and ARM BUS. Wireless Protocols: IrDA, Bluetooth, and IEEE 802.11.

TEXT BOOKS:

1. Embedded System Design – A Unified Hardware / Software Introduction By Frank Vahid / Tony Givargis – WILEY EDITION.
2. Embedded Systems Architecture, Programming and Design – 2nd Edition By Raj Kamal – Tata McGraw-Hill Education.

REFERENCES:

An Embedded Software Premier - David E- Siman, PEARSON Education
Embedded / real - time systems - DR. K.V.K.K. Prasad, dreamtech
The art of programming Embedded systems, Jack G. Ganssle, academic press
Intelligent Embedded systems, Louis L. Odette, Adison Wesly, 1991

OUTCOMES:

The student can gain good knowledge on Embedded Systems and implement in practical applications.
An ability effectively as a member or leader on a technical team
A commitment to quality, timeliness and continuous improvement

PROJECT WORK-VIIIA1

STUDENTS HAS TO DO A GROUP PROJECT WORK DURING THIRD YEAR

B.Sc. Electronics CBCS SYLLABUS

3rd YEAR

VI SEMESTER

PAPER- VIII (A2)

ELECTRONIC INSTRUMENTATION

Sub: ELECTRONICS		Year:2017-18	Group: <u>B.Sc</u>	Credits -3
---------------------	--	--------------	--------------------	---------------

TITLE: ELECTRONIC INSTRUMENTATION

OBJECTIVES:

The student will be introduced to
To introduce students to monitor, analyze and control any physical system
To understand students how different types of meters work and their construction

- To Study of absolute is merely confirmed within laboratories

To Study integrating instruments like ammeter, voltmeter
To Measurement of impedance using bridges
To Study of PLL, ph-meter, PLC

UNIT-I (10hrs)

Measurements:

Basic block diagram of measurement system, Accuracy and precision, resolution, sensitivity, linearity, Errors, systematic and random errors, standards & calibrations of an instrument.
Applications of instrument

UNIT –II (10hrs)

Basic Measurement Instruments: DC measurement-ammeter, voltmeter, ohm meter, AC measurement, Digital voltmeter systems (integrating and non-integrating). Digital Multimeter; Block diagram principle of measurement of I, V, C. Accuracy and resolution of measurement.

Measurement of Impedance- A.C. bridges, Measurement of Self Inductance (Anderson's bridge), Measurement of Capacitance (De Sauty bridge), Measurement of frequency (Wien's bridge).

UNIT-III (15hrs)

Lock-in-amplifier: Basic Principles of phase locked loop (PLL), Phase detector (XOR & edge triggered), Voltage Controlled Oscillator (Basics, varactor), lock and capture. Basic idea of PLL IC (565 or 4046). Lock-in-amplifier. Idea of techniques for sum and averaging of signals.

Signal Generators: Function generator, Pulse Generator, (Qualitative only).

UNIT-IV (15hrs)

Analytical instruments

Spectrophotometer, working with block diagram, features of spectrophotometer,

PH meter - principle working with block diagram, features of **PH** meter.

TEMPERATURE TRANSDUCERS

Standards and calibration, Fluid expansion and metal expansion type transducers, like bimetallic strip, Thermometer, RTD, Thermo couple and their characteristics.

UNIT-V; (10hrs)

Direct digital control (DDC), Distributed control system (DCS),

PLC'S: Block diagram, hardware, PLC operation, basic logic program (ladder logic), Applications of PLC'S

TEXT BOOKS

1. Introduction to instrumentation and control By A K Ghosh

2. Sensors and transducers PHI 2Ed By D Patranabis.

B.Sc. Electronics CBCS syllabus

3rd YEAR
VI SEMESTER

Cluster-I

PAPER- VIII (A3)

CONSUMER ELECTRONICS

Unit – I(12hrs)

MICROWAVE OVENS – Microwaves (Range used in Microwave ovens) – Microwave oven block diagram – LCD timer with alarm – Single-Chip Controllers – types of Microwave oven – Wiring and Safety instructions – care and Cleaning.

Unit – II(12hrs)

WASHING MACHINES – Electronic controller for washing machines – Washing machine hardware and software – Types of washing machines – Fuzzy logic washing machines Features of washing machines.

Unit – III(12hrs)

AIR CONDITIONERS AND REFRIGERATORS - Air Conditioning – Components of air conditioning systems – All water air conditioning systems – All air conditioning systems – Unitary and central air conditioning systems – Split air conditioners.

Unit – IV(12hrs)

HOME/OFFICE DIGITAL DEVICES – Fascimile machine – Xerographic copier – calculators – Structure of a calculator – Internal organization of a calculator – Servicing electronic calculators – Digital clocks – Block diagram of a digital clock.

Unit – V(12hrs)

DIGITAL ACCESS DEVICES – Digital computer – Internet access – online ticket reservation – functions and networks – barcode scanner and decoder – Electronic Fund Transfer – Automated Teller Machines(ATMs) – Set-Top boxes – Digital cable TV – Video on demand.

TEXTBOOKS:

1. S.P. Bali, Consumer Electronics – Pearson Education, New Delhi, 2005.
2. R.G. Gupta Audio and Video systems Tata McGraw Hill (2004)

ELECTRONICS LAB

CONSUMER ELECTRONICS LAB

(At least two Activities should be done)

1. Study of PA systems for various situations – Public gathering, closed theatre/ Auditorium, Conference room, Prepare Bill of Material(Costing)
 2. Installation of Audio/Video systems – site preparation, electrical requirements
-



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF MATHEMATICS

SYLLABUS 2019-2020

I SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – I
PAPER – I : DIFFERENTIAL EQUATIONS

60 Hrs

UNIT – I (12 Hours), Differential Equations of first order and first degree :

Linear Differential Equations; Differential Equations Reducible to Linear Form; Exact Differential Equations; Integrating Factors; Change of Variables.

UNIT – II (12 Hours), Orthogonal Trajectories.

Differential Equations of first order but not of the first degree :

Equations solvable for p ; Equations solvable for y ; Equations solvable for x ; Equations that do not contain x (or y); Equations of the first degree in x and y – Clairaut's Equation.

UNIT – III (12 Hours), Higher order linear differential equations-I:

Solution of homogeneous linear differential equations of order n with constant coefficients; Solution of the non-homogeneous linear differential equations with constant coefficients by means of polynomial operators.

General Solution of $f(D)y=0$

General Solution of $f(D)y=Q$ when Q is a function of x .

$\frac{1}{f(D)}$ is Expressed as partial fractions.

P.I. of $f(D)y = Q$ when $Q = be^{ax}$

P.I. of $f(D)y = Q$ when Q is $b \sin ax$ or $b \cos ax$.

UNIT – IV (12 Hours), Higher order linear differential equations-II:

Solution of the non-homogeneous linear differential equations with constant coefficients.

P.I. of $f(D)y = Q$ when $Q = bx^k$

P.I. of $f(D)y = Q$ when $Q = e^{ax}V$

P.I. of $f(D)y = Q$ when $Q = xV$

P.I. of $f(D)y = Q$ when $Q = x^mV$

UNIT – V (12 Hours), Higher order linear differential equations-III:

Method of variation of parameters; Linear differential Equations with non-constant coefficients; The Cauchy-Euler Equation.

Reference Books :

1. Differential Equations and Their Applications by Zafar Ahsan, published by Prentice-Hall of India Learning Pvt. Ltd. New Delhi-Second edition.
2. A text book of mathematics for BA/BSc Vol 1 by N. Krishna Murthy & others, published by S. Chand & Company, New Delhi.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF MATHEMATICS

SYLLABUS 2019-2020

II SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – II
PAPER – II : SOLID GEOMETRY

60 Hrs

UNIT – I (12 hrs) : The Plane :

Equation of plane in terms of its intercepts on the axis, Equations of the plane through the given points, Length of the perpendicular from a given point to a given plane, Bisectors of angles between two planes, Combined equation of two planes, Orthogonal projection on a plane.

UNIT – II (12 hrs) : The Line :

Equation of a line; Angle between a line and a plane; The condition that a given line may lie in a given plane; The condition that two given lines are coplanar; Number of arbitrary constants in the equations of straight line; Sets of conditions which determine a line; The shortest distance between two lines; The length and equations of the line of shortest distance between two straight lines; Length of the perpendicular from a given point to a given line;

UNIT – III (12 hrs) : Sphere :

Definition and equation of the sphere; Equation of the sphere through four given points; Plane sections of a sphere; Intersection of two spheres; Equation of a circle; Sphere through a given circle; Intersection of a sphere and a line; Power of a point; Tangent plane; Plane of contact; Polar plane; Pole of a Plane; Conjugate points; Conjugate planes;

UNIT – IV (12 hrs) : Sphere & Cones :

Angle of intersection of two spheres; Conditions for two spheres to be orthogonal; Radical plane; Coaxial system of spheres; Simplified form of the equation of two spheres.

Definitions of a cone; vertex; guiding curve; generators; Equation of the cone with a given vertex and guiding curve; Enveloping cone of a sphere; Equations of cones with vertex at origin are homogenous; Condition that the general equation of the second degree should represent a cone; Condition that a cone may have three mutually perpendicular generators;

UNIT – V (12 hrs) Cones & Cylinders :

Intersection of a line and a quadric cone; Tangent lines and tangent plane at a point; Condition that a plane may touch a cone; Reciprocal cones; Intersection of two cones with a common vertex; Right circular cone; Equation of the right circular cone with a given vertex; axis and semi-vertical angle.

Definition of a cylinder; Equation to the cylinder whose generators intersect a given conic and are parallel to a given line; Enveloping cylinder of a sphere; The right circular cylinder; Equation of the right circular cylinder with a given axis and radius.

Reference Books :

1. Analytical Solid Geometry by Shanti Narayan and P.K. Mittal, Published by S. Chand & Company Ltd. 7th Edition.
2. A text book of Mathematics for BA/B.Sc Vol 1, by V Krishna Murthy & Others, Published by



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF MATHEMATICS

SYLLABUS 2019-2020

III SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – III
PAPER – III : ABSTRACT ALGEBRA

60 Hrs

UNIT – 1: (10 Hrs) 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.

UNIT – 2: (14 Hrs) SUBGROUPS :-

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.

Co-sets and Lagrange's Theorem :-

Cosets Definition – properties of Cosets-Index of a subgroups of a finite groups-Lagrange's Theorem.

UNIT – 3: (12 Hrs) 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.

UNIT – 4: (10 Hrs) HOMOMORPHISM :-

Definition of homomorphism – Image of homomorphism elementary properties of homomorphism – Isomorphism – automorphism definitions and elementary properties-kernel of a homomorphism – fundamental theorem on Homomorphism and applications.

UNIT – 5: (14 Hrs) PERMUTATIONS AND CYCLIC GROUPS :-

Definition of permutation – permutation multiplication – Inverse of a permutation – cyclic permutations – transposition – even and odd permutations – Cayley's theorem.

Cyclic Groups :-

Definition of cyclic group – elementary properties – classification of cyclic groups.

Reference Books :-

1. Abstract Algebra, by J.B. Fraleigh, Published by Narosa Publishing house.
2. A text book of Mathematics for B.A. / B.Sc. by B.V.S.S. SARMA and others, Published by S.Chand & Company, New Delhi.
3. Modern Algebra by M.L. Khanna.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF MATHEMATICS

SYLLABUS 2019-2020

IV SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – IV
PAPER- IV : REAL ANALYSIS

UNIT – I (12 hrs) : REAL NUMBERS & INFINITE SERIES :

The algebraic and order properties of \mathbb{R} , Absolute value and Real line, Completeness property of \mathbb{R} , Applications of supremum property; intervals. Sequences and their limits, Range and Boundedness of Sequences, Limit of a sequence and Convergent sequence. (No. Question is to be set from this portion.)

Introduction to series, convergence of series. Cauchy's general principle of convergence for series, tests for convergence of series, Series of Non-Negative Terms.

1. Comparison test
2. Cauchy's n^{th} root test or Root Test.
3. D'Alembert's Test or Ratio Test.
4. Alternating Series – Leibnitz Test.

UNIT – II (12 hrs) : CONTINUITY

Limits : Limits of functions. Limits at infinity.

Continuous functions : Continuous functions, Combinations of continuous functions, Continuous Functions on intervals, uniform continuity.

UNIT – III (12 hrs) : DIFFERENTIATION AND MEAN VALUE THEOREMS :

The derivability of a function, on an interval, at a point, Derivability and continuity of a function, Graphical meaning of the Derivative, Mean value Theorems; Rolle's Theorem, Lagrange's Theorem, Cauchy's Mean value Theorem

UNIT – IV (12 hrs) : RIEMANN INTEGRATION-I:

Riemann Integral, Riemann integral functions, Darboux theorem. Necessary and sufficient condition for \mathbb{R} – integrability. Another definition of Riemann integral. Some classes of bounded integrable functions.

UNIT – V (12 hrs) : RIEMANN INTEGRATION-II:

Properties of integrable functions, Fundamental theorem of integral calculus, integral as the limit of a sum, Mean value Theorems.

Reference Books :

1. Real Analysis by Rubert & Bartely and D.R. Sherbart. Published by John Wiley.
2. A Text Book of B.Sc Mathematics by B.V.S.S. Sarma and others, Published by S. Chand & Company Pvt. Ltd., New Delhi.
3. Elements of Real Analysis as per UGC Syllabus by Shanthi Narayan and Dr. M.D. Raisinghan Published by S. Chand & Company Pvt. Ltd., New Delhi.

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – V
PAPER – V: RING THEORY & VECTOR CALCULUS

60 Hrs

UNIT – 1 (12 hrs) RINGS-I

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.

UNIT – 2 (12 hrs) RINGS-II

Sub Rings, Ideals, Quotient Rings.

Definition of Homomorphism – Homomorphic Image – Elementary Properties of Homomorphism – Kernel of a Homomorphism – Fundamental theorem of Homomorphism.

UNIT – 3 (12 hrs) VECTOR DIFFERENTIATION

Vector Differentiation, Ordinary derivatives of vectors, Differentiability, Gradient, Divergence, Curl operators, Formulae Involving these operators.

UNIT – 4 (12 hrs) VECTOR INTEGRATION

Line Integral, Surface Integral, Volume integral with examples.

UNIT – 5 (12 hrs) VECTOR INTEGRATION APPLICATIONS

Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems.

Reference Books :-

1. Abstract Algebra by J. Fraleigh, Published by Narosa Publishing house.
2. Vector Calculus by Santhi Narayana, Published by S. Chand & Company Pvt. Ltd., New Delhi.
3. A text Book of B.Sc., Mathematics by B.V.S.S.Sarma and others, published by S. Chand & Company Pvt. Ltd., New Delhi.
4. Vector Calculus by R. Gupta, Published by Laxmi Publications.
5. Vector Calculus by P.C. Matthews, Published by Springer Verlag publications.
6. Rings and Linear Algebra by Pundir & Pundir, Published by Pragathi Prakashan.

Suggested Activities:

Seminar/ Quiz/ Assignments/ Project on Ring theory and its applications

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – V
PAPER – VI: LAPLACE TRANSFORMS

60 Hrs

UNIT – 1 (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 – 2 (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 – 3 (12 hrs) Laplace Transform - III

Laplace Transform of Integrals – Multiplication by t , Multiplication by t^n – Division by t . Laplace transform of Bessel Function, Laplace Transform of Error Function, Laplace Transform of Sine and cosine integrals.

UNIT – 4 (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 – 5 (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.

Reference Books :-

1. Laplace Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.
2. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Co., Pvt. Ltd., New Delhi.
3. Laplace 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 Co., Pvt.Ltd., New Delhi.

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – VI
PAPER – VII : LINEAR ALGEBRA - I

60 Hrs

UNIT – I (12 hrs) : Vector Spaces - I

Vector Spaces, General properties of vector spaces, n-dimensional Vectors, addition and scalar multiplication of Vectors, internal and external composition, Null space, Vector subspaces, Algebra of subspaces, Linear Sum of two subspaces, linear combination of Vectors, Linear span Linear independence and Linear dependence of Vectors.

UNIT –II (12 hrs) : Vector Spaces - II

Basis of Vector space, Finite dimensional Vector spaces, basis extension, co-ordinates, Dimension of a Vector space, Dimension of a subspace, Quotient space and Dimension of Quotient space.

UNIT –III (12 hrs) : Linear Transformations

Linear transformations, linear operators, Properties of L.T., Determination of L.T, sum and product of L.T's Algebra of Linear Operators, Range and null space of linear transformation, Rank and Nullity of linear transformations – Rank -Nullity Theorem.

UNIT –IV (12 hrs) : Vector Space Isomorphism

Fundamental theorem of homomorphism, Singular and non –singular transformations, inverse function, Uniqueness of inverse.

UNIT –V (12 hrs) : Matrix of a Linear Transformation

Definition of Matrix of a Linear Transformation, Problems on finding the matrix of a Linear Transformation, Transition matrix and problems on transition matrix.

Reference Books :

1. Linear Algebra by J.N. Sharma and A.R. Vasista, published by Krishna Prakashan Mandir, Meerut-250002.
2. Linear Algebra by Kenneth Hoffman and Ray Kunze, published by Pearson Education (low priced edition), New Delhi.
3. Linear Algebra by Stephen H. Friedberg et al published by Prentice Hall of India Pvt. Ltd. 4th Edition 2007.

Suggested Activities:

Seminar/ Quiz/ Assignments/ Project on “Applications of Linear algebra Through Computer Sciences”

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – VI
Cluster Elective – Paper VIII - A1: INTEGRAL TRANSFORMS

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 :-

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:-

Definition of Fourier Transform – Fourier sine Transform – Fourier cosine Transform – Relationship between Fourier and Laplace transforms – Linear Property – Change of Scale Property – Modulation theorem – Derivative theorem – Shifting property – Convolution Theorem for Fourier transform – Problems related to Integral Equations – Parseval's Identity.

UNIT – V (12 hrs) Fourier Series:-

Fourier series, Fourier series in the interval $[-\pi, \pi]$, Fourier series in the interval $[0, 2\pi]$. Half range series, Fourier sine series in $[0, \pi]$, Fourier cosine series in $[0, \pi]$, Fourier series in the interval $[-l, l]$, Fourier series in the interval $[0, 2l]$, Fourier half range series in $[0, l]$.

Reference Books :-

1. Integral Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.
2. A Course of Mathematical Analysis by Shanthi Narayana and P.K. Mittal, Published by S. Chand and Company pvt Ltd., New Delhi.
3. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Company Pvt. Ltd., New Delhi.
4. Lapalce and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan Meerut.
5. Integral Transforms by M.D. Raising hania - H.C. Saxsena and H.K. Dass Published by S.Chand and Company pvt Ltd., New Delhi.

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – VI

Cluster Elective – Paper VIII – A2 : NUMERICAL ANALYSIS

60 Hrs

UNIT- I: (12 hours)

Errors in Numerical computations and Solution of Algebraic and Transcendental Equations: Errors and their Accuracy, Mathematical Preliminaries, Errors and their Analysis, Absolute, Relative and Percentage Errors, A general error formula, Error in a series approximation. The bisection method, The iteration method, The method of false position, Newton Raphson method, Generalized Newton Raphson method.

UNIT – II: (12 hours)

Interpolation–I: Errors in polynomial interpolation, Finite Differences, Forward differences, Backward differences, Central Differences, Symbolic relations, Detection of errors by use of Differences Tables, Differences of a polynomial, Newton’s formulae for interpolation.

UNIT – III: (12 hours)

Interpolation – II: Central Difference Interpolation Formulae, Gauss’s central difference formulae, Stirling’s central difference formula.

UNIT – IV: (12 hours)

Interpolation – III: Interpolation with unevenly spaced points, Lagrange’s formula, Error in Lagrange’s formula, Divided differences and their properties, Relation between divided differences and forward differences, Relation between divided differences and backward differences Relation between divided differences and central differences, Newton’s general interpolation Formula.

UNIT – V: (12 hours)

Numerical Differentiation and Integration: Numerical differentiation, The Cubic Spline method, Numerical integration, Trapezoidal Rule, Simpson’s 1/3 Rule, Simpson’s 3/8 Rule.

Reference Books :

1. Numerical Analysis by S.S.Sastry published by Prentice Hall of India Pvt. Ltd., New Delhi. (Latest Edition)
 2. Numerical Analysis by G. Sankar Rao published by New Age International Publishers, New – Hyderabad.
 3. Finite Differences and Numerical Analysis by H.C Saxena published by S. Chand and Company, Pvt. Ltd., New Delhi.
 4. Numerical methods for scientific and engineering computation by M.K.Jain, S.R.K.Iyengar, R.K. Jain.
-

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – VI

Cluster Elective – Paper VIII -A3 : LINEAR ALGEBRA - II

UNIT- I: (12 hours)

Rank of a Matrix : Sub-matrix and Minors of a Matrix, Rank of a Matrix, Elementary transformations, Reduction to Normal Form, Inverse of a Matrix using elementary transformations, Echelon form.

UNIT – II: (12 hours)

Linear Equations: Consistency, System of Homogeneous Linear equations, System of Non-homogeneous Linear equations.

UNIT – III: (12 hours)

Characteristic roots and Vectors of a Square Matrix: Characteristic roots, characteristic vectors, Properties of characteristic vectors, Cayley - Hamilton Theorem, Inverse of a matrix by using Cayley - Hamilton Theorem.

UNIT –IV (12 hrs) : Inner product space - I

Inner product spaces, Euclidean and unitary spaces, Norm or length of a Vector, Schwartz inequality, Triangle Inequality, Parallelogram law.

UNIT –V (12 hrs) : Inner product space - II

Orthogonality. Ortho normal set, complete ortho-normal set, Gram – Schmidt orthogonalisation process. Bessel's inequality and Parseval's Identity.

Reference Books :

1. Linear Algebra by J.N. Sharma and A.R. Vasista, published by Krishna Prakashan Mandir, Meerut-250002.
 2. Linear Algebra by Kenneth Hoffman and Ray Kunze, published by Pearson Education (low price edition), New Delhi.
 3. Linear Algebra by Stephen H. Friedberg et al published by Prentice Hall of India Pvt. Ltd. 4th Edition 2007.
 4. A Text Book on Matrices by P.K.Mittal, S.Chand Co.
 5. A Text Book on Matrices by A.R. Vasistha, A.K.Vasistha, Krishna Prashan Media.
 6. A Text Book on Matrices by Santhi Narayan, S.Chand Co.
-



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2019-2020

I SEMESTER

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
FIRST YEAR – SEMESTER- I

PAPER-I : INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY

TOTAL HOURS: 48

CREDITS: 4

UNIT-I No. of hours: 12

History and mile stones in microbiology. Contributions of Anton von Leeuwenhoek, Edward Jenner, Louis Pasteur, Robert Koch, Ivanowsky. Importance and 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 No. of hours: 10

General characteristics of Bacteria, Archaea, Mycoplasmas and Cyanobacteria. Ultra structure of Prokaryotic cell- Variant components and invariant components. General characteristics of viruses. Morphology, Structure and replication of TMV and HIV.

UNIT-III No. of hours: 10

General characteristics and outline classification of Fungi, Algae and Protozoa. Principles of microscopy - Bright field and Electron microscopy (SEM and TEM).

UNIT-IV No. of hours: 8

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 No. of hours: 8

Isolation of Microorganisms from natural habitats. Pure culture techniques – dilution-plating, Streak-plate, Spread-plate, Pour-Plate and micromanipulator. Enrichment culturing. Preservation of microbial cultures – subculturing, overlaying cultures with mineral oils, lyophilization, sand cultures, storage at low temperature.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2019-2020

III SEMESTER

**B.Sc MICROBIOLOGY (CBCS) SYLLABUS
SECOND YEAR – SEMESTER- III
PAPER-III : MICROBIAL GENETICS AND MOLECULAR BIOLOGY**

TOTAL HOURS:48

CREDITS: 4

UNIT-I No. of hours: 10

DNA and RNA as genetic material. Structure and organization of prokaryotic DNA. Extrachromosomal genetic elements – Plasmids and transposons. Replication of DNA – Semi conservative mechanism, Enzymes involved in replication.

UNIT-II No. of hours: 10

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 No. of hours: 10

Concept of gene – Muton, Recon and Cistron. One gene one enzyme and one gene one polypeptide hypotheses. Types of RNA and their functions. Genetic code. Structure of ribosomes.

UNIT-IV No. of hours: 8

Types of genes – structural, constitutive, regulatory Protein synthesis – Transcription and translation. Regulation of gene expression in bacteria – *lac* operon.

UNIT-V No. of hours: 10

Basic principles of genetic engineering. Restriction endonucleases, DNA polymerases and ligases. Vectors. Outlines of gene cloning methods. Polymerase chain reaction. Genomic and cDNA libraries. General account on application of genetic engineering in industry, agriculture and medicine.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2019-2020

IV SEMESTER

**B.Sc MICROBIOLOGY (CBCS) SYLLABUS
SECOND YEAR – SEMESTER- IV**

PAPER- IV: IMMUNOLOGY AND MEDICAL MICROBIOLOGY

TOTAL HOURS: 48

CREDITS: 4

UNIT-I No. of hours: 10

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. Identification and function of B and T lymphocytes, null cells, monocytes, macrophages, neutrophils, basophils and eosinophils.

UNIT-II No. of hours: 10

Antigens – types, chemical nature, antigenic determinants, haptens. Factors affecting antigenicity. Antibodies – basic structure, types, properties and functions of immunoglobulins. Types of antigen-antibody reactions - Agglutinations, Precipitation, Neutralization, complement fixation, blood groups. Labeled antibody based techniques – ELISA, RIA and Immunofluorescence. Polyclonal and monoclonal antibodies – production and applications. Concept of hypersensitivity and Autoimmunity.

UNIT-III No. of hours: 10

Normal flora of human body. Host pathogen interactions: infection, invasion, pathogen, pathogenicity, virulence and opportunistic infection. General account on nosocomial infection. General principles of diagnostic microbiology- collection, transport and processing of clinical samples. General methods of laboratory diagnosis - cultural, biochemical, serological and molecular methods.

UNIT-IV No. of hours: 8

Antibacterial Agents- Penicillin, Streptomycin and Tetracycline. Antifungal agents – Amphotericin B, Griseofulvin Antiviral substances - Amantadine and Acyclovir Tests for antimicrobial susceptibility. Brief account on antibiotic resistance in bacteria - Methicillin-resistant Staphylococcus aureus (MRSA). Vaccines – Natural and recombinant.

UNIT-V No. of hours: 10

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

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

THIRD YEAR – SEMESTER- V

PAPER-V : ENVIRONMENTAL & AGRICULTURAL MICROBIOLOGY

TOTAL HOURS: 36

CREDITS: 3

UNIT - I No. of hours: 8

Terrestrial Environment: Soil profile and soil microflora Aquatic Environment: Microflora of fresh water and marine habitats Atmosphere: Aeromicroflora and dispersal of microbes Extreme Habitats: Extremophiles: Microbes thriving at high & low temperatures, pH, high hydrostatic & osmotic pressures, salinity, & low nutrient levels.

UNIT – II No. of hours: 8

Role of microorganisms in nutrient cycling (Carbon, nitrogen, phosphorus). Treatment and safety of drinking (potable) water, methods to detect potability of water samples: (a) standard qualitative procedure: presumptive test/MPN test, confirmed and completed tests for faecal coliforms (b) Membrane filter technique. Microbial interactions – mutualism, commensalism, antagonism, competition, parasitism, predation.

UNIT – III No. of hours: 6

Outlines of Solid Waste management: Sources and types of solid waste, Methods of solid waste disposal (composting and sanitary landfill). Liquid waste management: Composition and strength of sewage (BOD and COD), Primary, secondary (oxidation ponds, trickling filter, activated sludge process and septic tank) and tertiary sewage treatment.

UNIT – IV No. of hours: 7

Plant Growth Promoting Microorganisms - Mycorrhizae, Rhizobia, *Azospirillum*, *Azotobacter*, *Frankia*, phosphate-solubilizers and Cyanobacteria. Outlines of biological nitrogen fixation (symbiotic, non-symbiotic). Biofertilizers - *Rhizobium*.

UNIT – V No. of hours: 7

Concept of disease in plants. Symptoms of plant diseases caused by fungi, bacteria, and viruses. Plant diseases - groundnut rust, Citrus canker and tomato leaf curl. Principles of plant disease control.

PRACTICAL-V : ENVIRONMENTAL & AGRICULTURAL MICROBIOLOGY

TOTAL HOURS: 36

CREDITS: 2

1. Analysis of soil – pH, Moisture content and water holding capacity.

2. Isolation of microbes (bacteria and fungi) from soil.
3. Study of air flora by petriplate exposure method.
4. Analysis of potable water: SPC, Presumptive, confirmed and completed test, determination of

Coliform count in water by MPN.

5. Determination of Biological Oxygen Demand (BOD) of waste water samples.
6. Isolation of *Rhizobium* from root nodules.
7. Staining and observation of Vesicular Arbuscular Mycorrhizal (VAM) fungi.
8. Observation of plant diseases of local importance - Citrus canker, Tikka disease of Groundnut, Bhenidi yellow vein mosaic, Rusts, Smuts, Powdery mildews, Tomato leaf curl.

SUGGESTED READINGS

- Atlas RM and Bartha R. (2000). **Microbial Ecology: Fundamentals & Applications**. 4th edition. Benjamin/Cummings Science Publishing, USA
- Barton LL & Northup DE (2011). **Microbial Ecology**. 1st edition, Wiley Blackwell, USA
- Campbell RE. (1983). **Microbial Ecology**. Blackwell Scientific Publication, Oxford, England.
- Coyne MS. (2001). **Soil Microbiology: An Exploratory Approach**. Delmar Thomson Learning.
- Lynch JM & Hobbie JE. (1988). **Microorganisms in Action: Concepts & Application in Microbial Ecology**. Blackwell Scientific Publication, U.K.
- Madigan MT, Martinko JM and Parker J. (2014). **Brock Biology of Microorganisms**. 14th edition. Pearson/Benjamin Cummings
- Maier RM, Pepper IL and Gerba CP. (2009). **Environmental Microbiology**. 2nd edition, Academic Press
- Martin A. (1977). **An Introduction to Soil Microbiology**. 2nd edition. John Wiley & Sons Inc. New York & London.
- Okafor, N (2011). **Environmental Microbiology of Aquatic & Waste systems**. 1st edition, Springer, New York.
- Singh A, Kuhad, RC & Ward OP (2009). **Advances in Applied Bioremediation**. Volume 17, Springer-Verlag, Berlin Hedeilberg
- Stolp H. (1988). **Microbial Ecology: Organisms Habitats Activities**. Cambridge University Press,

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

THIRD YEAR – SEMESTER -V

PAPER-VI A: MICROBIAL DIAGNOSIS IN HEALTH CLINICS (ELECTIVE)

TOTAL HOURS: 36

CREDITS: 3

UNIT- I No. of hours: 8

Bacterial, Viral, Fungal and Protozoan Diseases of various human body systems, Disease associated clinical samples for diagnosis.

UNIT- II No. of hours: 8

Collection of 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 No. of hours: 8

Examination of sample by staining - Gram stain, Ziehl-Neelson staining for tuberculosis, Giemsa-stained thin blood film for malaria Preparation and use of culture media - Blood agar, Chocolate agar, Lowenstein-Jensen medium, MacConkey agar, Distinct colony properties of various bacterial pathogens.

UNIT- IV No. of hours: 6

Serological Methods - Agglutination, ELISA, immunofluorescence, Nucleic acid based methods - PCR, Nucleic acid probes. Typhoid, Dengue and HIV, Swine flu.

UNIT- V No. of hours: 6

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

PRACTICAL-VI A: MICROBIAL DIAGNOSIS IN HEALTH CLINICS

TOTAL HOURS: 36

CREDITS: 2

1. Collection transport and processing of clinical specimens (Blood, Urine, Stool and Sputum).
Receipts, Labeling, recording and dispatching clinical specimens.
2. Isolation of bacteria in pure culture and Antibiotic sensitivity.

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

THIRD YEAR – SEMESTER- V

PAPER-VI B : MICROBIAL BIOTECHNOLOGY (ELECTIVE)

TOTAL HOURS: 36

CREDITS: 3

UNIT- I No. of Hours: 8

Microbial biotechnology: Scope and its applications in human therapeutics, agriculture (Biofertilizers, PGPR, Mycorrhizae), environmental, and food technology. Genetically engineered microbes for industrial application: Bacteria and yeast

UNIT- II No. of Hours: 7

Recombinant microbial production processes in pharmaceutical industries - Streptokinase, recombinant vaccines (Hepatitis B vaccine). Microbial polysaccharides, polyesters and bioplastics. Microbial production of bio-pesticides Microbial biosensors

UNIT- III No. of Hours: 10

Microbial based transformation of steroids and sterols. Bio-catalytic processes and their industrial applications: Production of high fructose syrup and production of cocoa butter substitute. Immobilization methods and their application: Whole cell immobilization

UNIT- IV No. of Hours: 7

Bio-ethanol and bio-diesel production: commercial production from lignocellulosic waste and algal biomass. Biogas production: Methane and hydrogen production using microbial culture. Microorganisms in bioremediation: Degradation of xenobiotics. Mineral recovery, removal of heavy metals from aqueous effluents.

UNIT- V No. of Hours: 4

Outlines of Intellectual Property Rights: Patents, Copyrights, Trademarks

PRACTICAL-VI B: MICROBIAL BIOTECHNOLOGY

TOTAL HOURS: 36

CREDITS: 2

1. Yeast cell immobilization in calcium alginate gels

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – SEMESTER- VI
PAPER-VII : FOOD AND INDUSTRIAL MICROBIOLOGY
TOTAL HOURS: 36 **CREDITS: 3**

UNIT- I No. of hours: 8

Intrinsic and extrinsic parameters that affect microbial growth in food Microbial spoilage of food - fruits, vegetables, milk, meat, egg, bread and canned foods Food intoxication (botulism). Food-borne diseases (salmonellosis) and their detection.

UNIT – II No. of hours: 7

Principles of food preservation - Physical and chemical methods. Fermented Dairy foods – cheese and yogurt. Microorganisms as food – SCP, edible mushrooms (white button, oyster and paddy straw). Probiotics and their benefits.

UNIT – III No. of hours: 6

Microorganisms of industrial importance – yeasts, moulds, bacteria, actinomycetes. Isolation and Screening of industrially-important microorganisms. Outlines of strain improvement.

UNIT – IV No. of hours: 8

Types of fermentation processes – solid state, liquid state, batch, fed-batch, continuous. Design of fermenter. Ingredients of Fermentation media Downstream processing - filtration, centrifugation, cell disruption, solvent extraction.

UNIT – V No. of hours: 7

Microbial production of Industrial products - Citric acid, Ethanol, amylases, penicillin, glutamic acid and vitamin B12.

PRACTICAL-VII: FOOD AND INDUSTRIAL MICROBIOLOGY

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – SEMESTER-VI
CLUSTER ELECTIVE
PAPER-VIII-A1 : COMPUTATIONAL METHODS AND BIOINFORMATICS

UNIT-1

A) Definition of statics, population and universe, the sample and population, statistical inference. Parameters and statistics. Internal data: Construction of histograms & interpretation. The normal distribution of mean, mode, median and standard deviation representing the normal curve, comparisons of means and variance.

B) Proportion data: examples of proportion data (MPN, sterility testing of medicines, animal toxicity, therapeutic, infection and immunization studies), Chi - square test, goodness of fit.

C) Count data: Examples of count data (bacteria cell count, radioactivity count, colony and plaque count) statistical treatment to count data:- Poisson distribution, standard error confidence limits of counts. (20hrs)

UNIT-II

A). Analysis of variance: Analysis of co-variance: introduction, procedure, t-Test and F-Test for multiple comparisons.

B) Correlation and regression and line fitting through graph points, standard curves, correlation, linear regression, MLR, multi-collinearity, standard curves and interpolation of unknown Y - values (15hrs)

UNIT-III

A) Computer fundamentals - organization and working of computers Basic definitions - hard ware and soft ware film ware, Program flowchart computer architecture fundamentals-internals, externals net work peripherals.

B) Introduction to windows 2000: Desktop files and folders: simple operations like creation deletion, moving, copying files or folders using window explorer. Searching files and folders and other simple operations.

UNIT-IV

- A) Word processing: opening, creating and saving documents, Typing, navigating, selecting, editing and sorting, checking spelling and grammar formatting - changing appearance of page - importing graphics, working with tables, documents printing. Basis of power point
- B) Use of internet and working systems.
- C) Microbiology applications of special software.

UNIT-V

- A) Bioinformatics: Definition concept scope and relevance of bioinformatics Applications nbr genomics, proteomics, os databases.molecular modeling,drug designing, gene therapy, structure and functional relationship of biomolecules and other application of bioinformatics .
- B) Sequence analysis: Concepts, importance and alignment methods, comparative, multiple sequence alignments and scoring methods.
- C) Phylogenetic Analysis - concept evolution of p. trees gene predictions -methods , tools(GRAIL ,Genlang, gene tindu, procrutes, Gene panges, Prot.pred:- methods for knowing & unknowing folds modelling and drug designing.

PRACTICAL- VIII-A1 : COMPUTATIONAL METHODS AND BIOINFORMATICS

TOTAL HOURS: 36

CREDITS: 2

1. Introduction to Bioinformatics data bases: NCBI
2. Sequence retrieval using BLAST
3. Sequence alignment and Phylogenetic analysis using CLUSTAL W and Phylip
4. Pick out a given gene from genomes using Gene Scan or other softwares (Promotor region identification, repeat in genome ORF prediction). Gene finding tools (Glimmer, GENE SCAN), Primer designing, GENE SCAN/GENE TOOL
5. Protein structure: Primary structure analysis, Secondary structure prediction using PSI-PRED, Homology modeling using Swiss model

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

THIRD YEAR – SEMISTER-VI

PAPER-VIII-A2 : BIOFERTILIZERS AND BIOPESTICIDES

TOTAL HOURS: 36

CREDITS: 3

UNIT – I No of Hours: 10

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, inoculum 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 No of Hours: 6

Free living *Azospirillum*, *Azotobacter* - isolation, characteristics, mass inoculum production and field application.

UNIT – III No of Hours: 6

Phosphate solubilizing microbes - Isolation, characterization, mass inoculum production, field application

UNIT – IV No of Hours: 7

Importance of mycorrhizal inoculum, types of mycorrhizae and associated plants, Mass inoculum production of VAM, field applications of Ectomycorrhizae and VAM.

UNIT – V No of Hours: 7

General account of microbes used as bioinsecticides and their advantages over synthetic pesticides. *Bacillus thuringiensis* - production, Field applications. Viruses – NPV cultivation and field applications.

PRACTICAL-VIII-A2: BIOFERTILIZERS AND BIOPESTICIDES

TOTAL HOURS: 36

CREDITS: 2

1. Isolation of *Rhizobium* from root nodules.
3. Isolation of phosphate solubilizers from soil
4. Staining and observation of VAM
3. A visit to biofertilizer production unit.

SUGGESTED READINGS

Agarwal SK (2005) **Advanced Environmental Biotechnology**, APH publication.

Kannaiyan, S. (2003). **Bioethnology of Biofertilizers**, CHIPS, Texas.

Mahendra K. Rai (2005). **Hand book of Microbial biofertilizers**, The Haworth Press, Inc. New York.

Reddy, S.M. et. al. (2002). **Bioinoculants for sustainable agriculture and forestry**, Scientific Publishers.

Saleem F and Shakoori AR (2012) **Development of Bioinsecticide**, Lap Lambert Academic Publishing GmbH KG

Subba Rao N.S (1995) **Soil microorganisms and plant growth** Oxford and IBH publishing co. Pvt. Ltd. New Delhi

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

THIRD YEAR – SEMESTER- VI

PAPER-VIII-A3: MICROBIAL QUALITY CONTROL IN FOOD AND PHARMACEUTICAL INDUSTRIES

TOTAL HOURS: 36

CREDITS: 3

UNIT – I No. of Hours: 8

Good laboratory practices - Good microbiological practices. Biosafety cabinets – Working of biosafety cabinets, using protective clothing, specification for BSL-1, BSL-2, BSL-3. Discarding biohazardous waste – Methodology of Disinfection, Autoclaving & Incineration

UNIT – II No. of Hours: 8

Culture and microscopic methods - Standard plate count, Most probable numbers, Direct microscopic counts, Biochemical and immunological methods: Limulus lysate test for endotoxin, gel diffusion, sterility testing for pharmaceutical products

UNIT – III No. of Hours: 8

Molecular methods - Nucleic acid probes, PCR based detection, biosensors.

UNIT – IV No. of Hours: 8

Enrichment culture technique, Detection of specific microorganisms - on XLD agar, *Salmonella Shigella* Agar, Manitol salt agar, EMB agar, McConkey Agar, Saboraud Agar Ascertaining microbial quality of milk by MBRT, Rapid detection methods of microbiological quality of milk at milk collection centres (COB, 10 min Resazurin assay).

UNIT – V No. of Hours: 4

Hazard analysis of critical control point (HACCP) - Principles, flow diagrams, limitations
Microbial Standards for Different Foods and Water – BIS standards for common foods and drinking water.

PRACTICAL-VIII-A3: MICROBIAL QUALITY CONTROL IN FOOD AND PHARMACEUTICAL INDUSTRIES

TOTAL HOURS: 36

CREDITS: 2

1. Microbiological laboratory safety- General rules & Regulations.
2. Sterility tests for Instruments – Autoclave & Hot Air Oven
3. Disinfection of selected instruments & Equipments
4. Sterility of Air and its relationship to Laboratory & Hospital sepsis.
5. Sterility testing of Microbiological media
6. Sterility testing of Pharmaceutical products –Antibiotics, Vaccines & fluids
7. Standard qualitative analysis of water.
8. Quantitative analysis of water – Membrane filter method
9. Analysis of food samples for Mycotoxins

SUGGESTED READING

Baird RM, Hodges NA and Denyer SP (2005) Handbook of Microbiological Quality control in Pharmaceutical and Medical Devices, Taylor and Francis Inc.
Garg N, Garg KL and Mukerji KG (2010) Laboratory Manual of Food Microbiology I K International Publishing House Pvt. Ltd.
Harrigan WF (1998) Laboratory Methods in Food Microbiology, 3rd ed. Academic Press
Jay JM, Loessner MJ, Golden DA (2005) Modern Food Microbiology, 7th edition. Springer
Laboratory Exercises in Microbiology, George.A.Wistreich & Max.D.Lechtman, 3 rd Ed, Glencoe press, London.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF PHYSICS

SYLLABUS 2019-2020

I SEMESTER

B.Sc. 1st Semester Physics
Paper I: Mechanics & Properties of Matter

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (10 hrs)

1. Vector Analysis

Scalar and vector fields, gradient of a scalar field and its physical significance. Divergence and curl of a vector field with derivations and physical interpretation. Vector integration (line, surface and volume), Statement and proof of Gauss and Stokes theorems.

UNIT-II (10 hrs)

2. Mechanics of particles

Laws of motion, motion of variable mass system, Equation of motion of a rocket. Conservation of energy and momentum, Collisions in two and three dimensions, Concept of impact parameter, scattering cross-section, Rutherford scattering-derivation.

UNIT-III (16 hrs)

3. Mechanics of Rigid bodies

Definition of rigid body, rotational kinematic relations, equation of motion for a rotating body, angular momentum, Euler equations and its applications, precession of a top, Gyroscope, precession of the equinoxes.

4. Mechanics of continuous media

Elastic constants of isotropic solids and their relations, Poisson's ratio and expression for Poisson's ratio in terms of ν , n and k . Classification of beams, types of bending, point load, distributed load.

UNIT-IV (12hrs)

5. Central forces

Central forces, definition and examples, characteristics of central forces, conservative nature of central forces, conservative force as a negative gradient of potential energy, equation of motion under a central force, Derivation of Kepler's laws. Motion of satellites.

UNIT-V (12 hrs)

6. Special theory of relativity

Galilean relativity, absolute frames. Michelson-Morley experiment, negative result. Postulates of special theory of relativity. Lorentz transformation, time dilation, length contraction, addition of velocities, mass-energy relation.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF PHYSICS

SYLLABUS 2019-2020

II SEMESTER

**Paper II: Waves & Oscillations
(For Maths Combinations)
II SEMESTER**

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

1. Simple Harmonic oscillations

Simple harmonic oscillator and solution of the differential equation-Physical characteristics of SHM, torsion pendulum-measurements of rigidity modulus, compound pendulum- measurement of 'g', combination of two mutually perpendicular simple harmonic vibrations of same frequency and different frequencies. Lissajous figures.

UNIT-II (12 hrs)

2. Damped and forced oscillations

Damped harmonic oscillator, solution of the differential equation of motion of damped oscillator, logarithmic decrement, relaxation time and quality factor, differential equation of motion of forced oscillator and its solution, amplitude resonance and velocity resonance.

UNIT-III (10 hrs)

3. Complex vibrations

Fourier theorem and evaluation of the Fourier coefficients, analysis of periodic wave functions-square wave, triangular wave, saw tooth wave, simple problems on evolution of Fourier coefficients.

UNIT-IV (17hrs)

4. Vibrating strings: 8 hrs

Transverse wave propagation along a stretched string, general solution of wave equation and its significance, modes of vibration of stretched string clamped at ends, overtones and harmonics.

5. Vibrations of bars: 9 hrs

Longitudinal vibrations in bars-wave equation and its general solution. Special cases (i) bar fixed at both ends (ii) bar fixed at the midpoint (iii) bar fixed at one end. Tuning fork.

UNIT-V (9 hrs)

6. Ultrasonics:

Ultrasonics, properties of ultrasonic waves, production of ultrasonics by piezoelectric and magnetostriction methods, detection of ultrasonics, determination of wavelength of ultrasonic waves.Applications of ultrasonic waves.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF PHYSICS

SYLLABUS 2019-2020

III SEMESTER

**Paper III: Wave Optics
(For Maths Combinations)
III SEMESTER**

Work load:60 hrs per semester

4 hrs/week

UNIT-I (8 hrs)

1. Aberrations:

Introduction – monochromatic aberrations - spherical aberration, coma, astigmatism, curvature of field and distortion- explanation and methods of elimination, Chromatic aberration - the achromatic doublet. Achromatism for two lenses (i)in contact and (ii) separated by a distance.

UNIT-II (14hrs)

2. Interference

Principle of superposition, coherence, conditions for interference of light. Fresnel's biprism-determination of wavelength of light, change of phase on reflection. Oblique incidence of a plane wave on a thin film due to reflected light (cosine law), colors of thin films, Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film) - Determination of diameter of wire, Newton's rings in reflected light. Michelson interferometer - Determination of wavelength of monochromatic light using Newton's rings and Michelson Interferometer.

UNIT-III (14hrs)

3. Diffraction

Introduction,distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction –Diffraction due to (i) single slit, (ii) double slit and (iii) N slits (diffraction grating), Resolving power of grating, Determination of wavelength of light in normal incidence and minimum deviation methods using diffraction grating, Fresnel's half period zones - area of the half period zones, zone plate – construction and theory, comparison of zone plate with convex lens - difference between interference and diffraction.

UNIT-IV(10 hrs)

4.Polarisation:

Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light, Brewster's law, Malus law, Nicol prism - polarizer and analyzer, Quarter wave plate, Half wave plate, optical activity- determination of specific rotation by Laurent's half shade polarimeter, Babinet's compensator.

UNIT-V (14hrs)

5. Lasers :

Lasers: introduction, spontaneous emission, stimulated emission. Population inversion, Laser principle, Einstein coefficients, Types of lasers - He-Ne laser and Ruby laser, Applications of lasers.

6. Fiber Optics

Introduction- different types of fibers, rays and modes in an optical fiber, fiber material, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF PHYSICS

SYLLABUS 2019-2020

IV SEMESTER

**Paper IV: Thermodynamics & Radiation Physics
(For Maths Combinations)
IV SEMESTER**

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (10 hrs)

1. Kinetic theory of gases

Introduction, Deduction of Maxwell's law of distribution of molecular speeds, experimental verification. Transport phenomena - Viscosity of gases - thermal conductivity and diffusion of gases.

UNIT-II(12 hrs)

2. Thermodynamics

Introduction, Isothermal and adiabatic processes, Reversible and irreversible processes, Carnot's engine and its efficiency, Carnot's theorem, Second law of thermodynamics - Kelvin's and Clausius statements, Entropy - physical significance - Change in entropy in reversible and irreversible processes, Entropy of Universe, Temperature-Entropy (T-S) diagram and its uses - Change of entropy of a perfect gas.

UNIT-III(12 hrs)

3. Thermodynamic potentials and Maxwell's equations

Thermodynamic potentials, Derivation of Maxwell's thermodynamic relations, Clausius-Clayperon's equation, Derivation for ratio of specific heats, Derivation for difference of two specific heats for perfect gas, Joule Kelvin effect - expression for Joule Kelvin coefficient for perfect and Vander waal's gas.

UNIT-IV(12 hrs)

4. Low temperature Physics

Introduction, Joule Kelvin effect - Porous plug experiment, Joule expansion, Distinction between adiabatic and Joule Thomson expansion, Expression for Joule Thomson cooling, Liquefaction of helium, Kapitza's method, Adiabatic demagnetization- Production of low temperatures, applications of substances at low temperature.

UNIT-V(14 hrs)

5. Quantum theory of radiation

Blackbody-Ferry's black body, distribution of energy in the spectrum of black body, Wein's law, Rayleigh-Jean's law, Quantum theory of radiation- Planck's law, Types of pyrometers- Disappearing filament optical pyrometer - experimental determination, Angstrom pyroheliometer - determination of solar constant, Temperature of Sun.

REFERENCE BOOKS:

1. BSc Physics, Vol.2, Telugu Akademy, Hyderabad
2. Thermodynamics, R.C.Srivastava, S.K.Saha & Abhay K.Jain, Eastern Economy Edition.
3. Unified Physics Vol.2, Optics & Thermodynamics, Jai Prakash Nath & Co.Ltd., Meerut
4. Fundamentals of Physics. Halliday/Resnick/Walker.C. Wiley India Edition 2007
5. Heat, Thermodynamics and Statistical Physics-N Brij Lal, P Subrahmanyam, PS Hemne, S.Chand & Co.,2012
6. Heat and Thermodynamics- MS Yadav, Anmol Publications Pvt. Ltd, 2000

Paper V: Electricity, Magnetism & Electronics
(For Maths Combinations)
V Semester

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

1. Electric field intensity and potential:

Gauss's law statement and its proof- Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electrical potential – potential due to i) a point charge, ii) charged spherical shell, Equipotential surfaces.

2. Dielectrics:

Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E and P- Dielectric constant and susceptibility.

UNIT-II (12 hrs)

3. Electric and magnetic fields

Biot-Savart's law, explanation and calculation of B due to long straight wire and solenoid, Hall effect – determination of Hall coefficient and applications.

4. Electromagnetic induction

Faraday's laws, Lenz's law, Self and mutual inductances, coefficient of coupling, calculation of self inductance of a long solenoid, Energy Stored in magnetic field, Transformer - energy losses - efficiency.

UNIT-III (12 hrs)

5. Alternating currents and electromagnetic waves

Alternating current - Relation between current and voltage in LR and CR circuits - vector diagrams, LCR series and parallel resonant circuits, Q -factor.

6. Maxwell's equations

Idea of displacement current - Maxwell's equations (integral and differential forms) (no derivation), Maxwell's wave equation (with derivation), Transverse nature of electromagnetic waves, production of electromagnetic waves (Hertz experiment).

UNIT-IV (12 hrs)

7. Basic electronics:

PN junction diode and Zener diode - I-V characteristics, PNP and NPN transistors, CB, CE and CC configurations, transistor (CE) characteristics, Determination of hybrid parameters, Transistor as an amplifier.

UNIT-V: (12 hrs)

8. Digital electronics :

Number systems - Conversion of binary to decimal system and vice versa, Laws of Boolean algebra, De Morgan's laws - statement and proof, Basic logic gates, NAND and NOR as universal gates, exclusive-OR gate, Half and full adders.

REFERENCE BOOKS

1. BSc Physics, Vol.3, Telugu Akademy, Hyderabad.
2. Electricity and Magnetism, D.N. Vasudeva. S. Chand & Co.
3. Electricity, Magnetism with Electronics, K.K. Tewari. R.Chand & Co.,
4. Principles of Electronics, V.K. Mehta, S.Chand & Co.,
5. Digital Principles and Applications, A.P. Malvino and D.P. Leach. Mc GrawHill Edition.

Practical Paper V: Electricity, Magnetism & Electronics

Work load: 30 hrs

2 hrs/week

Minimum of 6 experiments to be done and recorded

1. Figure of merit of a moving coil galvanometer.
2. LCR circuit series/parallel resonance, Q factor.
3. Determination of ac-frequency –sonometer.
4. Verification of Kirchoff's laws and maximum power transfer theorem.
5. Field along the axis of a circular coil carrying current.
6. PN Junction Diode Characteristics
7. Zener Diode Characteristics
8. Transistor CE Characteristics- Determination of hybrid parameters
9. Logic Gates- OR, AND, NOT and NAND gates. Verification of Truth Tables.
10. Verification of De Morgan's Theorems.

Suggested student activities

Student seminars, group discussions, assignments, field trips, study project and experimentation using virtual lab

Examples

Seminars - A topic from any of the Units is given to the student and asked to give a brief seminar presentation.

Group discussion - A topic from one of the units is given to a group of students and asked to discuss and debate on it.

Assignment - Few problems may be given to the students from the different units and asked them to solve.

Field trip - Visit to Satish Dhawan Space Centre, Sriharikota / Thermal and hydroelectric power stations / Science Centres, any other such visit etc.

Study project - Web based study of different satellites and applications.

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis,

Paper VI: Modern Physics
(For Maths Combinations)
V Semester

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

1. Atomic and molecular physics

Introduction, Drawbacks of Bohr's atomic model, Sommerfeld's elliptical orbits - relativistic correction (no derivation). Vector atom model- quantum numbers associated with it, Stern-Gerlach experiment, Zeeman effect and its experimental arrangement. Raman effect - hypothesis, Stokes and Anti Stokes lines, Quantum theory of Raman effect, Experimental arrangement, Applications of Raman effect.

UNIT-II (12 hrs)

2. Matter waves & Uncertainty Principle

Matter waves, de Broglie's hypothesis - wavelength of matter waves, Properties of matter waves, Davisson and Germer experiment. Heisenberg's uncertainty principle for position and momentum (x and p), energy and time (E and t). Experimental verification.

UNIT-III (12 hrs)

3. Quantum (wave) mechanics

Basic postulates of quantum mechanics, Schrodinger time independent and time dependent wave equations - derivations. Physical interpretation of wave function, Application of Schrodinger wave equation to particle in one dimensional potential infinite box.

UNIT-IV(12 hrs)

4. General Properties of Nuclei

Basic ideas of nucleus - size, mass, charge, density, angular momentum, magnetic moment, electric quadrupole moments, binding energy of nucleus, Liquid drop model and Shell model (qualitative aspects only).

5. Radioactivity decay:

Alpha decay: α -decay - Gamow's theory, Geiger Nuttal law, β -decay- electron emission, positron emission, electron capture and neutrino hypothesis of β -decay.

UNIT-V (12 hrs)

6. Crystal Structure

Amorphous and crystalline materials, unit cell, Miller indices, Bragg's law, diffraction of X-rays by crystals- experimental techniques of Laue's method and powder diffraction method.

7. Superconductivity:

Introduction, experimental facts, critical temperature, critical field, Meissner effect, Isotope effect, Type I and type II superconductors, applications of superconductors.

Semester –VI

Elective Paper –VII-(A): Analog and Digital Electronics

No. of Hours per week: 04

Total Lectures:60

Unit-I (14 Hours)

1. **FET**-Advantages of FET over BJT, FET-Construction, Working, characteristics and uses; MOSFET-enhancement MOSFET, depletion MOSFET, construction and working , drain and transfer characteristics of MOSFET, applications of MOSFET.

Unit-II (12Hours)

2. **Operational Amplifiers**: Characteristics of ideal and practical Op-Amp (IC 741), Basic differential amplifiers, Op-Amp supply voltage, IC identification, Internal blocks of Op-Amp, its parameter -off set voltages and currents, CMRR, slew rate.

Unit-III (12 Hours)

3. **Applications of Op-Amp**: Op-Amp as voltage amplifier, Inverting amplifier, Non-inverting amplifier, voltage follower, summing amplifier, difference amplifier, comparator, integrator, differentiator.

Unit-IV(10 Hours)

4. **IC 555 Timer** -Its pin diagram internal architecture, Application as astable-multivibrator and mono stable multivibrator. Applications of mono stable multivibrator-a) frequency divider b) pulse stretcher, Applications of astable multivibrator-a) square wave oscillator b)Free-running ramp generator .

Unit-V (12 Hours)

5. **Sequential digital circuits**: Flip-flops, RS, Clocked SR, JK, D, T, Master-Slave Flip-flops, Conversion of Flip flops.

Reference Books

1. Digital Electronics by G.K.Kharate Oxford University Press
2. Unified Electronics by Agarwal and Agarwal. Vol II&III
3. Op- Amp and Linear ICs by Ramakanth A Gavekwad. 4th edition PHI
4. Digital Principles and Applications by Malvino and Leach, TMH, 1996, 4th edition.
5. Digital Circuit design by Morris Mano PHI
6. Switching Theory and Logic design by A AnandKumar ,PHI
7. operations amplifier by SV Subramanyam.

Elective Paper-VII Practical: Analog and Digital Electronics

2hrs/Week

Minimum of 6 experiments to be done and recorded

- 1) Characteristics of FET
- 2) Characteristics of MOSFET
- 3) Characteristics of Op-amp.(IC741)
- 4) Op-Amp as amplifier/inverting amplifier



Cluster Electives VIII-A
Paper – VIII-A-1: Electronic devices and circuits

No. of Hours per week: 04

Total Lectures : 60

UNIT-I: (10hrs)

1.Networks Theorems:

Statement and proofs of Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power transfer theorem, Milliman's theorem and Reciprocity theorem.

UNIT-II: (12 hrs)

2.UJT & SCR:

UJT construction-working, V-I characteristics, Experimental determination of UJT parameters, UJT as a Relaxation oscillator.

Silicon Controlled Rectifier (SCR), Structure and working of SCR. Two transistor representation, Characteristics of SCR. Experimental set up to study the SCR characteristics, Application of SCR for power control.

UNIT-III: (12 hrs)

3.Rectifiers and Power Supplies :

Half wave, full wave and bridge rectifiers-Efficiency-ripple factor- Regulation, Types of filter-choke input(inductor) filter, L-section & π -section filters. Three terminal fixed voltage I.C(78 XX). regulators - Principle and working of SMPS(switch mode power supplies).

UNIT-IV: (12hrs)

4.Photo electric devices: Structure and operation, characteristics, spectral response and application of photo diode, multiple junction photo diode, LDR and LED, Photovoltaic cell.

Unit- V (14 Hours)

5. CRO : Block diagram of basic CRO, construction of CRT, electron gun, electrostatic focusing and acceleration(only explanation) , time base operation, synchronization, front panel controls.

6. Applications CRO: Measurements of dc and ac voltages, ac frequency, time period, special features of dual trace.

REFERENCE BOOKS:

1. Electric Circuit Analysis- S.R. Paranjothi- New Age International.
2. Networks and Systems – D.Roy Chowdary.
3. Unified Electronics (Circuit Analysis and Electronic Devices) by Agarwal-Arora. Vol- I
4. A text book in electrical technology by B.L. Thereja (S.Chand&Co).Vol- IV
5. Electronic devices and circuits by Milman and Halkias.

Semester –VI
Cluster Elective Paper VIII-A-2: Computational Methods and Programming

No. of Hours per week: 04

Total Lectures:60

UNIT-I (12hrs)

1. **Fundamentals of C language:** C character set-Identifiers and Keywords-Constants - Variables-Data types-Declarations of variables-Declaration of storage class-Defining symbolic constants- Assignment statement.
2. **Operators:** Arithmetic operators-Relational operators-Logic operators-Assignment operators- Increment and decrement operators-Conditional operators.

UNIT-II (12hrs)

3. **Expressions and I/O Statements:** Arithmetic expressions-Precedence of arithmetic operators-Type converters in expressions-Mathematical (Library) functions - Data input and output-The getchar and putchar functions-scanf-printf simple programs.

UNIT-III (12hrs)

4. **Arrays:** One dimensional and two dimensional arrays - Initialization - Type declaration - Inputting and outputting of data for arrays - Programs of matrices addition, subtraction and multiplication

UNIT-IV (12hrs)

5. **Linear and Non - Linear equations:** Solution of Algebra and transcendental equations-Bisection, Falsi position and Newton-Rhapson methods-Basic principles-Formulae-algorithms

UNIT-V (12hrs)

- 6.**Numerical differentiation and integration:** Numerical differentiation-algorithm for evaluation of first order derivatives using formulae based on Taylor's series-Numerical integration-Trapezoidal and Simpson's 1/3 rule- Formulae-Algorithms.

Semester –VI
Cluster Elective Paper –VIII-A-3: Electronic Instrumentation

No. of Hours per week: 04

Total Lectures:60

Unit – I (12Hours)

1. **Basics of measurements:** Instrument, accuracy, precision, sensitivity, resolution, range, errors in measurement, Multi meter - principle- measurement of dc voltage and dc current, ac voltage and resistance, Operating instructions of multi meter.

Unit -II (10 Hours)

2. **Electronic Voltmeter:** Advantages over conventional multi meter, considerations in selecting voltmeter, Basic volt meter (TVM), Differential voltmeter, Solid state voltmeter AC voltmeter using rectifiers and their significances.

Unit– III (14 Hours)

3. **Digital Multi meter:** Block diagram, working and specifications of digital multi meter, Universal counter and Frequency counter- Block diagram, frequency and time period measurement & accuracy and resolution.

Unit – IV (12 Hours)

4. **Digital instruments:** Comparison of analog and digital instruments, Principle and working of digital instruments - Tacho meter, P^H meter, Capacitance meter and phase meter. Digital voltmeter- advantages, Performance parameters, Block diagram and working.

Unit – V (12 Hours)

5. **Signal generators:** Block diagram explanation, specifications of low frequency signal generators (AF Sine and square wave generator, RF Signal Generator), pulse generator, function generator-working, Brief idea for testing, specifications. Distortion factor meter, wave analysis.

Reference Books

1. A text book in electrical technology by B.L. Thereja (S. Chand & Co)-Vol IV
2. Digital circuits and systems by Venugopal 2011 (Tata McGraw Hill)
3. Digital Electronics by Subratha Ghoshal 2012 (Cengage Learning)
4. Electronic measurements and instrumentation by U.A. Bakshi, A.V. Bakshi, K.A. Bakshi
5. Electronic instrumentation by H. S. Kalsi.

Elective Paper-VIII-A-3: Practical: Electronic Instrumentation

2hrs/Week

Minimum of 6 experiments to be done and recorded

1. Study the loading effect of a multimeter by measuring voltage across a low and high resistance.
2. Study the limitations of a multimeter for measuring high frequency voltage and currents.
3. Measurement of time period and frequency using universal counter.
4. Sensitivity of electronic Voltmeter.
5. Measurement of distortion of a RF signal generator using distortion factor meter.
6. Multimeter – Measurements of DC voltage, DC current, AC current and resistance.
7. Time period and frequency measurements using frequency counter.
8. Digital P^H meter-measurement of P^H Value.
9. Conversion of basic meter into a multi range Ammeter.
10. conversion of basic meter into a multi range Volt meter.
11. Calibration of Shunt type Ohmmeter/Series type ohmmeter



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF STATISTICS

SYLLABUS 2019-2020

I SEMESTER

STATISTICS CBCS SYLLABUS

Semester – I (CBCS With Maths Combination Common to BA/BSc)
Paper - I: Descriptive Statistics and Probability

No. of Hours/week : 04

credits 3

UNIT-I

Introduction to Statistics: Concepts of Primary and Secondary data. Methods of collection and editing of primary data, Secondary data. Designing a questionnaire and a schedule. Diagrammatic and graphical representation of data. 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 correction for moments. Skewness and kurtosis.

UNIT-III

Introduction to Probability: Basic Concepts of Probability, random experiments, trial, outcome, sample space, event, mutually exclusive and exhaustive events, equally likely and favourable outcomes. Mathematical, Statistical, axiomatic definitions of probability. Conditional Probability and independence of events,

UNIT-IV

Probability theorems: Addition and multiplication theorems of probability for 2 and for n events. Boole's inequality and Baye's theorem and problems.

UNIT-V

Random variable: Definition of random variable, discrete and continuous random variables, functions of random variable. Probability mass function. Probability density function, Distribution function and its properties. Bivariate random variable - meaning, joint, marginal and 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 BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr.M.Jaganmohan Rao,Dr.N.Srinivasa Rao, Dr.P.Tirunathi Rao, Smt.D.Vijayalakshmi



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF STATISTICS

SYLLABUS 2019-2020

II SEMESTER

STATISTICS SYLLABUS

Semester – II (CBCS With Maths Combination Common to BA/BSc)

Paper - II :Mathematical Expectation and Probability Distributions
(Scientific calculators are allowed)

No. of Hours/week : 04

credits 3

UNIT-I

Mathematical expectation : Mathematical expectation of a random variable and function of a random variable. Moments and covariance using mathematical expectation with examples. Addition and Multiplication theorems on expectation. Definitions of M.G.F, C.G.F, P.G.F, C.F and their properties. Chebyshev and Cauchy - Schwartz inequalities.

UNIT-II

Discrete Distributions : Binomial and Poisson distributions, their definitions, first four central moments, β_1 and β_2 . M.G.F, C.F, C.G.F, P.G.F, mean, variance, additive property if exists. Poisson approximation to Binomial distribution.

UNIT-III

Negative Binomial, Geometric, Hyper-geometric distributions - Definitions, means, variances, M.G.F, C.F, C.G.F, P.G.F, reproductive property if exists. Binomial approximation to Hyper Geometric Distribution, Poisson approximation to Negative binomial distribution.

UNIT-IV

Continuous Distributions : Rectangular, Exponential, Gamma, Beta Distributions of first and second kind. Other properties such as mean, variance, M.G.F, C.G.F, C.F, and reproductive property if exist.

UNIT - V

Normal Distribution: Definition, Importance, Properties, M.G.F, CF, additive property, Normal distribution as a limiting case of Binomial and Poisson distribution. Cauchy Distribution definition, CF and reproductive property.

Text Books:

1. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, NewDelhi.
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.Vijavalakshmi
3. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF STATISTICS

SYLLABUS 2019-2020

III SEMESTER

STATISTICS SYLLABUS

Semester – III (CBCS With Maths Combination Common to BA/BSc)

Paper - III : Statistical Methods and Sampling Distributions

No. of Hours/week : 04

credits 3

UNIT – I

Curve fitting: Bi- variate data, Principle of least squares, fitting of degree polynomial. Fitting of straight line (), Fitting of Second degree polynomial or parabola (), Fitting of power curve () and exponential curves of type i) and ii) with problems.

UNIT – II

Correlation : Meaning, Types of Correlation, Measures of Correlation : Scatter diagram, Karl Pearson's Coefficient of Correlation, Rank Correlation Coefficient (with and without ties), Bi-variate frequency distribution, correlation coefficient for bi-variate data and simple problems. Correlation ratio, concept of multiple and partial correlation coefficients (three variables only) and properties

UNIT – III

Regression : Concept of Regression, Linear Regression: Regression lines, Regression coefficients and its properties, Regressions lines for bi-variate data and simple problems. Correlation vs regression. concept of multiple linear regression and partial regression.

UNIT – IV

Attributes : Notations, Class, Order of class frequencies, Ultimate class frequencies, Consistency of data. Conditions for consistency of data for 2 and 3 attributes only , Independence of attributes , Association of attributes and its measures, Relationship between association and colligation of attributes, Contingency table: Square contingency(), Mean square contingency(2), Coefficient of mean square contingency (C), Tschuprow's coefficient of contingency (

UNIT – V

Exact Sampling distributions: Population, Sample, Parameter, statistic, Sampling distribution, Standard error. Definition and properties of Student's t- distribution, F – Distribution, - Distribution and their applications, the relationship between t and F – distribution and the relationship between F and distribution.

Text books

1. BA/BSc II year statistics - statistical methods and inference - Telugu Academy by A. Mohanrao, N.Srinivasa Rao, Dr R.Sudhakar Reddy, Dr T.C. Ravichandra Kum.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.
3. Fundamentals of Mathematics statistics: VK Kapoor and SC Gupta.

Reference Books:

4. Outlines of statistics, Vol II: Goon Gupta, M.K.Gupta, Das Gupta B.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)



Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

DEPARTMENT OF STATISTICS

SYLLABUS 2019-2020

IV SEMESTER

STATISTICS SYLLABUS

Semester – IV (CBCS With Maths Combination Common to BA/BSc)

Paper - IV: Statistical Inference

(Scientific calculators are allowed)

No. of Hours/week : 04

credits 3

UNIT-I

Theory of estimation: Estimation of a parameter, criteria of a good estimator – unbiasedness, consistency, efficiency, & sufficiency and. Statement of Neyman's factorization theorem. Estimation of parameters by the method of moments and maximum likelihood (ML), properties of MLE's. Binomial, Poisson & Normal Population parameters estimate by MLE method. Confidence intervals of the parameters of normal population.

UNIT-II

Testing of Hypothesis: Concepts of statistical hypotheses, null and alternative hypothesis, critical region, two types of errors, level of significance and power of a test. One and two tailed tests. Neyman-Pearson's lemma. Examples in case of Binomial, Poisson, Exponential and Normal distributions.

UNIT – III

Large sample Tests: large sample test for single mean and difference of two means, confidence intervals for mean(s). Large sample test for single proportion, difference of proportions. standard deviation(s) and correlation coefficient(s).

UNIT – IV

Small Sample tests: t-test for single mean, difference of means and paired t-test. χ^2 -test for goodness of fit and independence of attributes. F-test for equality of variances.

UNIT – V

Non-parametric tests- their 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 BOOKS

1. BA/BSc II year statistics - statistical methods and inference - Telugu Academy by A Mohanrao, N Srinivasa Rao, Dr R. Sudhakar Reddy, Dr T.C. Ravichandra Kumar.

STATISTICS SYLLABUS

Semester – V (CBCS With Maths Combination Common to BA/BSc)

Paper – V: SAMPLING THEORY and DESIGN OF EXPERIMENTS

No. of Hours/week : 04

credits 3

UNIT – I

Sampling Theory: Principal steps in sample surveys - census versus sample survey, sampling and non- sampling errors, advantages of sampling over census and limitations of sampling. Types of sampling: Subjective, probability and mixed sampling methods.

UNIT – II

Simple Random Sampling: Simple random sampling, selection procedure of simple random sampling, Advantages and Disadvantages of simple random sampling. Estimation of population mean, population total and variance of these estimates by Simple random sampling with and without replacement. Comparison between SRSWR and SRSWOR.

UNIT – III

Stratified random sampling: Stratified random sampling, Advantages and Disadvantages of Stratified Random sampling, Estimation of population mean, and its variance. Stratified random sampling with proportional and optimum allocations. Comparison between proportional and optimum allocations with SRSWOR.

Systematic sampling : Systematic sampling definition when $N = nk$ and merits and demerits of systematic sampling - estimate of mean and its variance. Comparison of systematic sampling with Stratified and SRSWOR.

UNIT – IV

Analysis of variance : Analysis of variance(ANOVA) –Definition and assumptions. One-way with equal and unequal classification, Two way classification.

Design of Experiments: Definition, Principles of design of experiments, CRD: Layout, advantages and disadvantage and Statistical analysis of Completely Randomized Design (C.R.D).

UNIT – V

Randomized Block Design (R.B.D) and Latin Square Design (L.S.D) with their layouts and Analysis, Missing plot technique in RBD and LSD. Efficiency RBD over CRD, Efficiency of LSD over RBD and CRD. Factorial experiments – Main effects and interaction effects of 2^2 and 2^3 factorial experiments and their Statistical analysis. Yates procedure to find factorial effect totals.

Text Books:

1. Telugu Academy BA/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.

STATISTICS SYLLABUS

Semester – V (CBCS With Maths Combination Common to BA/BSc)

Paper – VI : Statistical Quality Control and Reliability

No. of Hours/week :04

credits 3

UNIT – I

Statistical Quality Control : Definition, Importance of SQC in industry. Causes of variation-chance and assignable causes, Process and Product control, Importance of Normal distribution and 3σ control limits, specification limits and Natural tolerance limits.

UNIT– II

Shewart control charts – Variable Control Charts- and R-chart, and S- chart. Attribute type of charts - np- chart(No. of defectives), p- chart(Proportion of defectives) with fixed and variable sample size and C-Chart(No. of defects per unit), its applications.

UNIT – III

Acceptance sampling plans: Definition, Types of Accepting sampling plans, Merits and demerits of Acceptance sampling plans, applications, Concept of, AQL and LTPD, Producers risk and Consumer's risk. AOQ and AOQL curves, OC, ASN, and ATI curves.

UNIT – IV

Single and Double sampling plans for attributes and derivation of their OC and ASN functions. Design of single and double sampling plans for attributes.

UNIT – V

Reliability: Meaning and concept of reliability, Reliability measures –Failure Density, Failure Rate or Hazard function, Probability of Failure, Mean Time to Failure(MITF), Mean Time Between Failures(MTBF), Exponential distribution as life model, its memory- less property.

List of reference books :

1. Fundamentals of Applied Statistics. By V.K Kapoor and S.C.Gupta , Sultan Chand.
2. Reliability and life testing by S.K.Sinha. Wiley Eastern
3. Statistical Quality Control by R.C.Gupta:
4. B.A/B.Sc III Year Paper-IV Statistics- applied Statistics- Telugu Academic by Prof.K.Srinivasa Rao. Dr.D. Giri. Dr.A.Anand. Dr. V.Papaiah Sastry
5. B.A/B.Sc Statistics Paper-IV Statistics, Quality, Reliability and OR by DVLN Jogiraju. C.Srikala. Palnati Sudarsan.

STATISTICS MODEL QUESTION PAPER

Semester – VI (CBCS With Maths Combination Common to BA/BSc)

Paper – VII: ECONOMIC STATISTICS

No. of Hours/week : 04

credits 3

UNIT-I

Time Series: Time Series and its components with illustrations, additive, multiplicative models. Determination of trend by least squares (Linear trend, parabolic trend only), moving averages method. Determination of seasonal indices by simple averages method, ratio to moving average, Ratio to trend and Link relative methods.

UNIT-II

Growth curves: Modified exponential curve, Logistic curve and Gompertz curve, fitting of growth curves by the method of three selected points and partial sums.

UNIT-III

Index numbers: Concept, construction, problems involved in the construction of index numbers, uses and limitations. Simple and weighted index numbers. Laspeyres's, Paasche's and Fisher's index numbers, Criterion of a good index number, Fisher's ideal index numbers. Fixed and chain base index

numbers. Cost of living index number and wholesale price index number. Base shifting, splicing and deflation of index numbers.

UNIT-IV

Official Statistics: Functions and organization of CSO and NSSO. Agricultural Statistics, area and yield statistics. National income and computation, utility and difficulties in estimation of national income.

UNIT-V

Vital Statistics: Introduction, definition and uses of vital statistics, sources of vital statistics. Mortality rates: Crude death rate(CDR), Specific death rate(SDR), standardized death rate(STDR). Fertility rates: crude birth rate(CBR), age specific fertility rate(ASFR), general fertility rate(GFR), total fertility rate(TFR). Measurement of population growth: crude rate of natural increase and pearl's vital index, Gross reproduction rate(GRR) and net reproduction rate(NRR). Life tables: construction and uses of life tables and abridged life tables.

Text Books:

1. Fundamentals of applied statistics : VK Kapoor and SC Gupta.
2. BA/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.

Reference Books:

3. Indian Official statistics - MR Saluja.
4. Anuvarthita Sankvaka Sastram - Telugu Academy.

STATISTICS SYLLABUS

Semester – VI (CBCS With Maths Combination Common to BA/BSc)
Paper – VIII(A1): OR and Applications of Linear Programming Problem

No. of Hours/week : 04

Credits: 3

UNIT-I

Basics of OR and Linear Programming Problem: Introduction of OR, Definition, characteristics, scope, applications and limitations of OR. Formulation of linear programming of problems (LPP), Convex sets, Basic feasible solutions, Graphical solution of linear programming problems. Alternative solutions, Unbounded solutions, Non existing feasible solutions by Graphical method.

UNIT-II

Simplex Method : General formulation of LP Problems and Matrix form of LP problems, Slack variable, Surplus variable, unrestricted Variable, Standard form of LPP, Canonical form of LPP. Introduction to simplex method, Definitions and notations, Computational procedure of simplex algorithm. Artificial variable technique, Big-M method and Two-phase simplex method, Degeneracy in LPP and method to resolve degeneracy. Alternative solutions, Unbounded solutions, Non existing feasible solutions and Solution of simultaneous equations by Simplex method.

UNIT-III

Duality in Linear Programming and Dual Simplex Method : Introduction, Definition of Dual Problems, General rules for converting any primal into its Dual, Economic interpretation of duality, Relation between the solution of Primal and Dual problem, Using duality to solve primal problem. Dual Simplex Method.

UNIT-IV

Transportation problem : Introduction, Mathematical formulation of Transportation problem, Tabular representation, Definitions, Initial Basic feasible solution of Transportation problem- North-west corner rule, Lowest cost entry method, Vogel's approximation method. Method of finding optimal solution-Modi method(U-V method). Degeneracy in transportation problems, Resolution of degeneracy, Unbalanced transportation problem.

Assignment problem: Introduction, Mathematical formulation of Assignment problem, Reduction theorem(statement only), Hungarian Method for solving Assignment problem, Unbalanced Assignment problem. The Traveling salesman problem, Formulation of Traveling salesman problem as an Assignment problem and Solution procedure.

UNIT-V

Sequencing problem: Introduction, assumptions of sequencing problem, Johnson's algorithm for n jobs on two machines problem- problems with n-jobs on two machines, algorithm for n jobs on three machines problem- problems with n- jobs on three machines, algorithm for n jobs on k machines problem, problems with n-jobs on k-machines. Graphical method for two jobs on k- machines.

Reference Books:

1. S.D. Sharma, Operations Research, Kedar Nath Ram Nath & Co, Meerut.
2. Kanti Swarup, P.K. Gupta, Manmohn, Operations Research, Sultan Chand and sons, New Delhi.
3. J.K. Sharma, Operations Research and Application, Mc Millan and Company, New Delhi.
4. Gass: Linear Programming. Mc Graw Hill.
5. Hadly: Linrar programming. Addison-Wesley.
6. Taha: Operations Research: An Introduction : Mac Millan.
7. Parikriva Parishodhana - Telugu Academy.

STATISTICS SYLLABUS
Semester – VI (CBCS With Maths Combination Common to BA/BSc)
Paper – VIII(A2) : Numerical Methods

No. of Hours/week : 04

Credits 3

UNIT-I

Definitions of Forward difference operator(Δ), Backward difference operator(∇), Shift or Extension(displacement) operator (E), Central Differences operator(μ), Differentiation operator(D), Mean value operator (Symbolic relations between operators, properties of difference and shift operators, fundamental theorem on finite differences and simple problems.

UNIT-II

Interpolation with equal intervals: Concept of interpolation and extrapolation, assumptions and uses of interpolation, difference tables, methods of interpolation with equal intervals - Newton's formula for forward and backward interpolation, Central differences, Gauss forward and backward, Sterling, Bessel's and Lalace-Everett's Formulae,

UNIT-III

Interpolation with unequal intervals: Divided differences and their properties. Methods of interpolation with unequal intervals – Newton's Divided difference formula and Lagrange's formula. Inverse interpolation- Lagrange's formula.

UNIT-IV

Numerical Differentiation: Introduction to Numerical differentiation. Determination of First and Second order derivatives for the given data using Newton's forward and backward, Gauss forward and backward, Sterling, Bessel's and Newton's Divided difference formula.

UNIT-V

Numerical Integration: Introduction to numerical integration, General Quadrature formula for equidistant ordinates, Trapezoidal rule, Simpson's 1/3 rd, Simpson's 3/8 th rule and Weddle's rule.

Books Recommended:

1. H.C. Saxena, Finite Differences and Numerical Analysis, S. Chand and Company, NewDelhi.
2. P.P.Gupta, G.S.Malik and Sanjay Gupta, Calculus of Finite Differences and Numerical Analysis, Krishna Prakashan Media(P) Ltd., Meerut(UP), India.
3. S.Ranganatham, M.V.S.S.N Prasad, V.Ramesh Babu, S.Chand& Company Ltd.
4. S. S. Sastry, Introductory Methods Numerical Analysis, Prentice- Hall of India.
5. C.F. Gerald and P. O. Wheatley, Applied Numerical Analysis, Addison- Wesley, 1998.

STATISTICS SYLLABUS
Semester – VI (CBCS With Maths Combination Common to BA/BSc)
Paper – VIII(A3): Econometric Methods

No. of Hours/week : 04

Credits :3

UNIT-I

Basic Econometrics: Nature of econometrics and economic data, concept of econometrics, steps in empirical economic analysis, econometric model, importance of measurement in economics, the structure of econometric data, cross section, pooled cross section, time series and paired data, simple regression models, two variable linear regression model, assumptions estimations of parameters.

UNIT-II

Models and Estimations: Gauss marcoff theorem, OLS estimations, partial and multiple correlations coefficients. The general linear model assumptions, estimation and properties of estimators, BLUEs, and tests of significance of estimators, R square and ANOVA.

UNIT-III

Problems in OLS Estimators: Nature, test, consequences and remedial steps of problems of heteroscedasticity; Multicollinearity and Auto-correlation; Problems of specification error; Errors of measurement.

UNIT-IV

Regressions with Qualitative Independent Variables: Dummy variable technique — Testing structural stability of regression models comparing two regressions, interaction effects, seasonal analysis.

UNIT-V

Regressions with Qualitative Independent Variables: Piecewise linear regression, use of dummy variables, regression with dummy dependent variables; The LPM, Logit, Probit and Tobit models — Applications.

BASIC READING LIST

1. Amemiya, T. (1985), Advanced Econometrics, Harvard University Press, Cambridge, Mass.
2. Baltagi, B.H. (1998), Econometrics, Springer, New York.
3. Dongherty, C. (1992), Introduction to Econometrics, Oxford University Press, New York.
4. Goldberger, A.S. (1998), Introductory Econometrics, Harvard University Press, Cambridge, Mass.
5. Gujarati, D.N. (1995), Basic Econometrics (6th Edition), McGraw Hill, New Delhi.
6. Hill R. C., E.G. William and G.G. Judge (1997), Undergraduate Econometrics, Wiley, New York.
7. Kennedy, P. (1998), A Guide to Econometrics (4th Edition), MIT Press, New York.
8. Kmenta, J. (1997), Elements of Econometrics (Reprint Edition), University of Michigan Press, New York.
9. Koutsoyiannis, A. (1977), Theory of Econometrics (2nd ed.), The Macmillan Press Ltd., London.
10. Krishna, K.L. (Ed.) (1997), Econometric Applications in India, Oxford University Press, New Delhi.



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



DEPARTMENT OF ZOOLOGY

SYLLABUS 2019-2020

I SEMESTER

ZOOLOGY SYLLABUS FOR I SEMESTER

ZOOLOGY - PAPER - I

ANIMAL DIVERSITY - NONCHORDATES

Periods:60

Max. Marks:100

Brief history, Significance of Diversity of Non Chordates

Protozoa

General characters

Classification of Protozoa up to classes with examples

Elohidium (type study)

Porifera

General characters

Classification of Porifera up to classes with examples

Sycon – External Characters, Types of cells,

Skelton in Sponges

Canal system in sponges

Unit - II

Coelenterata

General characters

Classification of Coelenterata up to classes with examples

Obelia - External Characters, Structure of Polyp and Medusa

Polymorphism in coelenterates

Corals and coral reef formation

Platyhelminthes

General characters

Classification of Platyhelminthes upto classes with examples

Fasciola hepatica, Reproductive System, Life History and pathogenicity

Unit - III

Nemathelminthes

General characters

Classification of Nemathelminthes up to classes with examples

Annelida

General characters

Classification of Annelida up to classes with examples

Unit - III

Nemathelminthes

General characters

Classification of Nemathelminthes up to classes with examples

Annelida

General characters

Classification of Annelida up to classes with examples

Hirudinaria granulosa, Digestive System, Reproductive System

Coelomoducts

Vermiculture - Scope, significance, earthworm species, processing, Vermicompost, economic importance of vermicompost

Unit - IV

Arthropoda

General characters

Classification of Arthropoda up to classes with examples

Prawn, Appendages, Respiratory system

Peripatus - Structure and affinities

Mollusca

General characters

Classification of Mollusca up to classes with examples

Pearl formation in Pelecypoda

Torsion in gastropods

Unit - V

Echinodermata

General characters

Classification of Echinodermata up to classes with examples

Water vascular system in star fish

Hemichordata

General characters

Classification of Hemichordata up to classes with examples

Balanoglossus - Structure and affinities

Non-Chordata larval forms

Amphiblastula

Nauplius

Bipinnaria

Tornaria



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ZOOLOGY

SYLLABUS 2019-2020

II SEMESTER

ZOOLOGY SYLLABUS FOR II SEMESTER

ZOOLOGY - PAPER - II

ANIMAL DIVERSITY - CHORDATES

Periods:60

Max. Marks: 100

Unit - I

General characters of Chordata

Prochordata

Salient features of Cephalochordata

Affinities of Cephalochordata

Salient features of Urochordata

Structure and life history of Herdmania

Significance of Retrogressive metamorphosis

Unit - II

Cyclostomata

General characters of Cyclostomata

Comparison of the Petromyzon and Myxine

Pisces

General characters of Fishes

Classification of fishes up to sub - class level with examples

Scoliodon Digestive system, Heart, Brain

Migration in Fishes

Types of Scales

Dipnoi

Unit - III

3.1 Amphibia

General characters of Amphibian

Classification of Amphibia upto orders with examples.

Rana hexadactyla Digestive system, Respiratory system, Heart

Reptilia

General characters of Reptilia

Classification of Reptilia upto orders with examples

Identification of Poisonous snakes and Skull in reptiles

Unit - IV

Aves

General characters of Aves

Classification of Aves upto subclasses with examples.

Columba livia. Digestive system, Respiratory system, Heart.

Migration in Birds

Flight adaptation in birds

Unit - V

Mammalia

General characters of Mammalia

Classification of Mammalia upto sub - classes with examples

Comparison of Prototherians, Metatherians and Eutherians

Dentition in mammals

□□□□



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ZOOLOGY

SYLLABUS 2019-2020

III SEMESTER

ZOOLOGY SYLLABUS FOR III SEMESTER

ZOOLOGY - PAPER - III

CYTOLOGY, GENETICS AND EVOLUTION

Periods:60

Max. Marks:100

Unit - I

1. Cytology - I

Definition, history, prokaryotic and eukaryotic cells, virus

Electron microscopic structure of eukaryotic cell.

Plasma membrane –Different models of plasma membrane.

Unit – II

2. Cell organelles

Structure and functions of Endoplasmic Reticulum

Structure and functions of Golgi apparatus

Structure and functions of Lysosomes

Structure and functions of Ribosomes

Structure and functions of Mitochondria

2.7. Chromatin, Chromosomes - Structure, types, functions

Unit - III

Genetics - I

Mendel's work on transmission on traits

Principles of inheritance

Incomplete dominance and codominance

Lethal alleles, Epistasis, Pleiotropy

Unit - IV

Genetics - II

Sex determination

Sex linked inheritance

Linkage and crossing over

Extra chromosomal inheritance

Human karyotyping

Unit - V

Evolution

Lamarckism, Darwinism, Hardy-Weinberg Equilibrium.
Variations, isolating mechanisms, natural selection
Speciation (Allopatric and Sympatric)
Macro evolutionary principles (Example: Darwin's finches)



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



DEPARTMENT OF ZOOLOGY

SYLLABUS 2019-2020

IV SEMESTER

ZOOLOGY SYLLABUS FOR IV SEMESTER

ZOOLOGY - PAPER - IV

EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY

Periods:60

Max. Marks: 100

Unit - I

Developmental Biology and Embryology

Gametogenesis

Types of eggs

Formation and functions of Foetal membrane in chick embryo

Development, types and functions of Placenta in mammals

Unit - II

Physiology - I]

Elementary study of process of digestion

Absorption of digested food

Respiration - Pulmonary ventilation, transport of oxygen and carbondioxide

Circulation - Structure and functioning of heart, Cardiac cycle

Excretion - Structure of nephron, urine formation, counter current mechanism

Unit - III

Physiology - II

Nerve impulse transmission, origin and propagation of action potentials

Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle contraction

Endocrine glands - Structure, secretions and the functions (of hormones) of pituitary, thyroid, parathyroid, adrenal glands and pancreas

Hormonal control of reproduction in a mammal

Unit - IV

Ecology - I

Meaning and scope of Ecology

Nutrient cycles - Nitrogen, carbon and phosphorus

Components of Ecosystem (Example:lake), food chains and food web, energy flow in ecosystem

energy flow in ecosystem

Unit - V

Ecology - II

Habitat and ecological niche

Community interactions - Mutualism, commensalism, parasitism, competition,
predation

ZOOLOGY SYLLABUS FOR V SEMESTER
ZOOLOGY - PAPER - V
ANIMAL BIOTECHNOLOGY

Periods:60

Max. Marks:100

Unit 1: Tools of Recombinant DNA technology - Enzymes and Vectors

Restriction modification systems: Types I, II and III. Mode of action, nomenclature, applications of Type II restriction enzymes in genetic engineering

Cloning Vectors: Plasmid vectors:pBR and pUC series, Bacteriophage, Cosmids.

Unit 2 Techniques of Recombinant DNA technology

Cloning: Use of linkers and adaptors

PCR: Basics of PCR.

Hybridization techniques: Southern, Northern and Western blotting,

Genomic and cDNA libraries: Preparation and uses

UNIT 3 Animal Cell Technology

Cell cultures: primary culture, secondary culture, Organ culture; Cryopreservation of cultures.

Hybridoma Technology: Production of Monoclonal antibodies (mAb), Applications of mAb

Stem cells: Types of stem cells, applications of stem cell technology in cell based therapy.

Unit 4 Reproductive Technologies & Transgenic Animals

Manipulation of reproduction in animals: Artificial Insemination, In vitro fertilization , super ovulation, Embryo transfer

Transgenic Animals: Transgenic - sheep, - fish; applications

Unit 5 Applied Biotechnology

Industry: Fermentation: Different types of Fermentation: Short notes on - Submerged & Solid state; batch, Fed batch & Continuous;

Agriculture: fisheries – monoculture in fishes, polyploidy in fishes; DNA fingerprinting

□□□□□

ZOOLOGY SYLLABUS FOR V SEMESTER

ZOOLOGY - PAPER - VI

ANIMAL HUSBANDRY

Periods:60	Max. Marks: 100
UNIT – I	10 Hours
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:	10 Hours
Poultry feed management – Principles of feeding. Methods of feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.	
UNIT – III:	10 Hours
Selection, care and handling of hatching eggs. Egg testing. Methods of hatching. Brooding and rearing. Sexing of chicks.	
UNIT- IV:	20 Hours
Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds. (Three each category). 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. Weaning of calf. Castration and dehorning. Deworming.	
UNIT - V:	10 Hours
Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks.	

ZOOLOGY SYLLABUS FOR VI SEMESTER

ZOOLOGY –ELECTIVE PAPER:VII

IMMUNOLOGY

Periods:60

Max. Marks:100

Unit - I

Overview of Immune system
Introduction to basic concepts in Immunology
Innate and adaptive immunity
Cells and organs of Immune system
Cells of immune system
Organs of immune system

Unit - II

Antigens
Basic properties of antigens
B and T cell epitopes, haptens
Factors influencing immunogenicity

Unit - III

Antibodies
Structure of antibody
Classes and functions of antibodies
3.1.3 Monoclonal antibodies

Unit - IV

Working of Immune system
Structure and functions of major histocompatibility complexes
Exogenous and Endogenous 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

□□□□□

VI SEMESTER
ZOOLOGY SYLLABUS FOR CLUSTER ELECTIVE –VIII-A:
AQUACULTURE

Cluster Elective Paper: VIII-A-1

PRINCIPLES OF AQUACULTURE

Periods:60

Max.Marks:100

Unit – I

Introduction / Basics of Aquaculture

Definition, Significance and History of Aquaculture

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 practices

Traditional, extensive, modified extensive, semi-intensive and intensive cultures of fish.

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

Nutrition and feeds

Natural food and Artificial feeds and their importance in fish and shrimp culture

Unit – IV

Management of carp culture ponds

4.1.1 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 of ponds

Unit – V

- Culture of shrimp (*Penaeus monodon* or *Litopenaeus vannamei*)
- Culture of pearl oysters
- Culture of ornamental fishes – Setting up and maintenance of aquarium.

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.
11. Mcvey JP. 1983. Handbook of Mariculture. CRC Press.
12. MPEDA: Handbooks on culture of carp, shrimp, etc.
13. New MB. 2000. Freshwater Prawn Farming. CRC Publ.
14. Pillay TVR. 1990. Aquaculture- Principles and Practices, Fishing News Books Ltd., London.
15. Pillay TVR & Kutty MN. 2005. Aquaculture- Principles and Practices. 2nd Ed. Blackwell
16. Rath RK. 2000. Freshwater Aquaculture. Scientific Publ.
14. Stickney RR. 1979. Principles of Warmwater Fish Culture, John Wiley & Sons
15. Wheaton FW. 1977. Aquacultural Engineering. John Wiley & Sons.

Cluster Elective Paper: VIII-A-2
AQUACULTURE MANAGEMENT

Periods : 60

Max.Marks : 100

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*

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
Liming materials, Organic manures and Inorganic fertilizers commonly used and their
 implications in fish ponds

Unit – III

Feed Management
 Live Foods and their role in shrimp larval nutrition.
 Supplementary feeds: Principal foods in artificial diets; Types of feeds; Feed additives
 and Preservatives; role of probiotics.
 Feed formulation and manufacturing; Feed storage

Unit – IV

Disease Management
Principles of disease diagnosis and health management;
 Prophylaxis, Hygiene and Therapy of fish diseases
 Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds

Unit – V

Economics and Marketing
 5.1.1 Principles of aquaculture economics – Capital costs, variable costs, cost-benefit analysis
 5.1.2 Fish marketing methods in India; Basic concepts in demand and price analysis
Fish Genetics
 Genetic improvement of fish stocks – Hybridization of 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.

Cluster Elective Paper: VIII-A-3

POST HARVEST TECHNOLOGY

Periods : 60

Max.Marks : 100

Unit – I

Handling and Principles of fish Preservation

Handling of fresh fish, storage and transport of fresh fish, post mortem changes (rigor mortis and spoilage).

Principles of preservation– cleaning, lowering of temperature, rising of temperature, denudation, use of salt, use of fish preservatives, exposure to low radiation of gamma rays.

Unit – II

Methods of fish Preservation

Traditional methods - sun drying, salt curing, pickling and smoking.

Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, Irradiation and Accelerated Freeze drying (AFD).

Unit – III

Processing and preservation of fish and fish by-products

Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fish protein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, pet

food from trash fish, fish manure.

Fish by-products – fish glue, ising glass, chitosan, pearl essence, shark fins, fish leather and fish maws.

Unit – IV

Sanitation and Quality control

Sanitation in processing plants - Environmental hygiene and Personal hygiene in processing plants.

Quality Control of fish and fishery products – pre-processing control, control during processing and control after processing.

Unit – V

Quality Assurance, Management and Certification

Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); Good Laboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept of Hazard Analysis and Critical Control Points (HACCP) in seafood safety.



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



AUTONOMOUS SYLLABUS

PG

2019-2020



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

FIRST SEMESTER

With effect from 2017 - 18 (Under CBCS Pattern)

SUB : POETRY-I

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

- | | | |
|-----------------------------|---|----------------------------|
| 1) 1. Chaucer
Crucifying | : | Good Friday, Nativity, |
| 2) 2. John Donne | : | The flee, The Canonization |

UNIT – 3

- | | | |
|-------------------|---|---|
| 1) John Milton | : | Paradise Lost, Book IV |
| 2) Alexander Pope | : | The Rape of the Lock (canto I and II),” The
Happy Man” |
| 3) Thomas Gray | : | Elegy Written in a Country Church
Yard |
| 4) Tennyson | : | Wheezes |

UNIT – 4

- | | | |
|-----------------------|---|--|
| 1) William Wordsworth | : | The Tables turned, Tintern Abbey. |
| 2) John Keats | : | Bright Star, Endymion, Ode to
Nightingale |
| 3) P.B. Shelley | : | To a Skylark, Ozymandias. |



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

FIRST SEMESTER

SUB : DRAMA-I:

UNIT – 1 Background Study

- 1) **Literary History – Genres – Movements – Ideas – Trends – Concepts**

UNIT – 2

- 1) **Christopher Marlowe : Dr Faustus**
- 2) **Ben Jonson : Volpone**

UNIT – 3

- 1) **William Shakespeare : Julius Caesar, Romeo and Juliet, Macbeth**

UNIT – 4

- 1) **Sheridan : The Rivals**
- 2) **Oscar Wilde : The picture of Dorian Gray**



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

FIRST SEMESTER

SUB : FICTION-I

UNIT – I Background Study

- 1) **Literary History – Genres – Movements – Ideas – Trends – Concepts**

UNIT – 2

- 1) **Daniel Defoe : Moll Flanders**
- 2) **Henry Fielding : Joseph Andrews**

UNIT – 3

- 1) **Jane Austen : Emma**
- 2) **George Eliot : The Mill on the Floss**

UNIT – 4

- 1) **Charles Dickens : A Tale of Two Cities**
- 2) **Thomas Hardy : Tess of the D Urbarvillas**



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

FIRST SEMESTER

SUB : PROSE-I:

UNIT – 1 Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT – 2

- 1) Francis Bacon : Of Truth, Of Death
- 2) Joseph Addison : The Coverley Papers (Selected Essays)
 1. Mischief's of party spirit
 2. Laboure and Exercise
 3. Rural Manners

UNIT – 3

- 1) Charles Lamb : Dream Children, The South-Sea House

UNIT – 4

- 1) John Milton : Of Education
- 2) Bertrand Russell : Man's Peril



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

FIRST SEMESTER

Paper V

SUB : ENGLISH LANGUAGE

UNIT – 1

Language – Definition – features – Human Language vs. Animal

Language - Definition and Scope of Linguistics - Dimensions of Study

UNIT – 2

Origin and Growth of English Language – Influences (Latin, French, and

Indian) – Standard English – British and American English

UNIT – 3

Sounds – Speech Mechanism – Stress/ Rhythm – Intonation – Phones – Phonemes – Allophones.

UNIT – 4

Morphology – Morphs – Allomorphs – Word formation processes – Simple,

Complex and Compound Words.



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

Department of English

Non-Core Syllabus

CBSC-1: Introduction to Computers and MS-Office

Unit -1

Exploring Computers and their Uses

Types of Storage Devices

Operating System Basics

Unit -2

Word Basics

Header and Footer

Tables

Graphics

Macros

Mail Merge

Unit- 3

Excel Basics

Formatting

Introduction to Functions

Excel Charts

Unit - 4

Power Point Basics



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 201: POETRY – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Robert Browning : My Last Duchess, The Last Ride Together

2. G.M. Hopkins : Wind Hover, Pied Beauty

UNIT – 3

**3. W.B. Yeats : The Second Coming, Byzantium,
A Prayer for my daughter**

4. T.S. Eliot : The Waste Land

UNIT – 4

**5. W.H. Auden : The Unknown Citizen,
The Shield of Achilles**

6. Ted Hughes : God's Granduer



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 202: DRAMA – II

UNIT – I Background Study

Literary History – Genres – Movements – Idea – Trends – Concepts

UNIT – 2

1. G.B. Shaw : St. Joan
2. T S Eliot : The Murder in the Cathedral

UNIT – 3

3. John Osborne : Look Back in Anger
4. Harold Pinter : The Birthday Party

UNIT – 4

5. Samuel Beckett : Waiting for Godot
6. J.M. Synge : Riders to the Sea



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 203: FICTION – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT – 2

- 1. Virginia Woolf : Mrs. Dalloway**
- 2. James Joyce : The Portrait of the Artist as a Youngman**

UNIT – 3

- 3. D.H. Lawrence : The Rainbow**
- 4. William Golding : Lord of the Flies**

UNIT – 4

- 5. Graham Greene : The Power and the Glory**
- 6. Kingsley Amis : Lucky Jim**



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 204: PROSE – II

UNIT – I Background Study

**Literary History – Genres – Movements – Ideas – Trends –
Concepts**

UNIT – 2

- 1. Bertrand Russell : Knowledge and wisdom**
- 2. John Ruskin : Sesame and Lilies**

UNIT – 3

- 3. Virginia Woolf : A Room of One's own**
- 4. George Orwell : Politics and English Language**

UNIT – 4

- 5. Winston Churchill: Blood, Toil, Tears and Sweat**
- 6. G.K. Chesterton: The worship of Wealthy.**



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 205: ENGLISH LANGUAGE TEACHING

UNIT – 1

- 1. Language Acquisition and Language Learning**
- 2. Problems of Teaching / Learning English as a Second Language in the Indian Context**
- 3. Current Trends of Teaching English in India.**

UNIT – 2

Teaching of English Language – Theories, - Concepts- Methods – Direct, Grammar Translation – Bilingual – Audio lingual – Desuggestopedia.

UNIT – 3

Teaching poetry & Prose from Language Perspective

Teaching LSRW Skills

UNIT – 4

Materials and tools – Development of Sources for Teaching – News Papers- Advertisements – Magazines – Utility of Language lab for teaching English.



**SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)**

Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 301: INDIAN ENGLISH LITERATURE – I

UNIT – 1

Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

1. Rajmohan's Wife : Bunkum Chandra Chatterjee
2. The Vendor of Sweets : R. K. Narayan

UNIT – 3

3. Toru Dutta : Sita, Our Casuarina Tree, the
Lotus

4. Sarojini Naidu : Coromandel Fishers,
Palanquin Bearers

UNIT – 4

5. Mahesh Dattani : Tara
6. Ananda Coomaraswamy : The Dance of Siva



SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

Reaccredited with 'B' Grade by NAAC

Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.

Affiliated to Yogi Vemana University



2019-2020

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 302: AMERICAN LITERATURE-1

UNIT – 1

Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

1. Emerson : The American Scholar

2. H.D. Thoreau : Walden

UNIT – 3

3. Walt Whitman : Song of Myself,

When Lilacs last in the Dooryard Bloomed

**4. Emily Dickinson : Because I Could not Stop for
Death,**

Success is Counted Sweetest

UNIT – 4

5. Mark Twain : The Adventures of Huckleberry Finn

6. Nathaniel Hawthorne : The Scarlet Letter

DEPARTMENT OF ENGLISH

THIRD SEMESTER

303: NEW LITERATURES IN ENGLISH-I (Excluding Indian English Literature)

UNIT – 1 Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT - 2

- 1. A.D. Hope : Australia, The Death of the Bird**
- 2. Judith Wright : Fire at the Murdering Hut, Bullocky**

UNIT -3

- 3. Gabriel Okara : The Mystic Drum**
- 4. Wole Soyinka : The Lion and the Jewel**

UNIT – 4

- 5. Chinua Achebe : Things Fall Apart**

- 6. V.S. Naipaul : A House for Mr. Biswas**

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 304: LITERARY CRITICISM-I

UNIT – I Background Study:

Literary History – Genres – Movements – Idea – Trends – Concepts

UNIT – 2

1. Aristotle : Poetics

2. Dr. Johnson : A Preface to Shakespeare

UNIT -3

3. Coleridge : Biographia Literaria, Chapter XIV

4. Matthew Arnold : A Study of Poetry

UNIT – 4

5. T.S. Eliot : Tradition and Individual Talent

6. Calanthe Brooks : Irony as a Principle of Structure

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 305: WORLD CLASSICS IN ENGLISH TRANSLATION

UNIT – I Background Study:

Literary History – Genres – Movements – Idea – Trends – Concepts

UNIT – 2

1. Sophocles : Oedipus Rex

2. Kalidasa : Shakuntala

UNIT – 3

1. Kafka : The Castle

2. Homer : The Iliad (Canto I)

3. Dante : The Inferno (From the Divine Comedy)

UNIT – 4

4. Dostoevsky : Poor Folk (novella)

DEPARTMENT OF ENGLISH
FOURTH SEMESTER
ENGLISH 401: INDIAN ENGLISH LITERATURE – II

UNIT – I Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

1. Mulk Raj Anand : Untouchable

2. Amitav Ghosh : The Shadow Lines

UNIT – 3

**3. Nissim Ezekiel : (From Ten Twentieth Century Poets,
OUP)**

**4. A.K. Ramanujam : (From Ten Twentieth Century
Poets, OUP)**

- 1. Night of the Scorpion**
- 2. Poet, Lover, Birdwatcher.**
- 3. The Visitor**
- 1. Looking for a cousin on a Swing.**
- 2. A River**
- 3. Of Mothers, Among Other Things.**

UNIT – 4

5. Sri Aurobindo : The Soul of Poetic Delight and Beauty

6. Jawaharlal Nehru : Discovery of India (some extracts)

DEPARTMENT OF ENGLISH
FOURTH SEMESTER
ENGLISH 402: AMERICAN LITERATURE – II

UNIT – I Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

- 1. Robert Frost : Mending Wall, Home Burial**
- 2. Wallace Stevens : Sunday Morning, Anecdote of a Jar**

UNIT – 3

- 3. Eugene O’Neill : The Hairy Ape**
- 4. Tennessee William’s: A Streetcar Named Desire**

UNIT – 4

- 5. Saul Bellow : Seize the Day**

- 6. Alice Walker : The Color purple**

DEPARTMENT OF ENGLISH
FOURTH SEMESTER
ENGLISH 403: NEW LITERATURES IN ENGLISH – II
(EXCLUDING INDIAN ENGLISH LITERATURE)

UNIT – I Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

- 1. Derek Walcott : Far Cry Africa, Ruins of Great House**
- 2. Katherine Mansfield: Bliss and other stories**

UNIT – 3

- 3. Margaret Laurence : The Stone Angle**
- 4. Margaret Atwood : Surfacing**

UNIT – 4

- 5. Cyprian Ekwensi : People of the City**
- 6. Ngugi WaThiong'o : A Grain of Wheat**

DEPARTMENT OF ENGLISH
FOURTH SEMESTER
ENGLISH 404: LITERARY CRITICISM – II

UNIT – I Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

- 1. Edmund Wilson : Marxism and Literature**
- 2. Lionel Trilling : Freud and Literature**

UNIT – 3

- 3. Northrop Frye : The Archetypes of Literature**
- 4. Jacques Derrida : Sign, Structure and Play**

UNIT – 4

- 5. Elaine Showalter : Towards Feminist Poetics**

- 6. Ananda Vardhan : Dhvanyaloka (Essay: The First Flash)**
Translated by K. Krishna Moorthy

DEPARTMENT OF ENGLISH

FOURTH SEMESTER

ENGLISH 405: INDIAN LITERATURE IN ENGLISH TRANSLATION – II

UNIT – I Background Study

**Literary History – Genres – Movements – Ideas – Trends -
Concepts**

UNIT – 2

1. Rabindranath Tagore : Geetanjali (Selections)
2. B. Tilak (Tr. S.S. Prabhakar) : As Ambrosia Dripped,
Modernism &

Poesy, Song Immorta

UNIT – 3

3. GurajadaAppa Rao : Kanyasulkam (Macmillan)
4. Vijay Tendulkar : Silence! The Court is in
Session

UNIT – 4

5. Chandu Menon : Indulekha
6. U.R. Ananta Murrthy : Samskara

