ప్రాచీన తెలుగు కవిత్వం

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విజయోస్తు

మమ్మీ అన్న మాటలో మమకారం కన్న
అమ్మ! అన్న మాటలో మాధుర్యం మిన్న
అమ్మ నుండి అలవడే అమృత భాష
ఆత్మీయతను పెంచే ఆంధ్ర భాష

మాధుర్యాన్ని పెంచే మాన్యభాష
రాగసుధలను రంగరించే రాష్ట్ర భాష
మమకారాన్ని పంచే మాతృభాష
తేనెలొలుకు భాష మన తెలుగు భాష

తెలుగు భాషను గౌరవిద్దాం
తెలుగు భాషలో మాట్లాడుదాం
తెలుగు జాతికి వన్నెతెద్దాం
ఇదే తెలుగుతల్లికి మనమిచ్చే నీరాజనాలు

– రచయితలు

జనరల్ తెలుగు / సెమిస్టర్ - 1

ప్రాచీన తెలుగు కవిత్వం

ఈ కోర్సు విజయవంతంగా ముగించాక, విద్యార్థులు క్రింది అభ్యసన ఫలితాలను పొందగలరు.

1. ప్రాచీన తెలుగుసాహిత్యం యొక్క ప్రాచీనతను, విశిష్టతను గుర్తిస్తారు. తెలుగు సాహిత్యంలో ఆదికవి నన్నయ కాలంనాటి భాషానంన్క ృతులను, ఇతిహాసకాలంనాటి రాజనీతి విషయాలపట్ల పరిజ్ఞానాన్ని సంపాదించగలరు.
2. శివకవుల కాలంనాటి మతపరిస్థితులను, భాషావిశేషాలను గ్రహిస్తారు. తెలుగు సుడికారం, సామెతలు, లోకోక్తులు మొదలైన భాషాంశాల పట్ల పరిజ్ఞానాన్ని పొందగలరు.
3. తిక్కన భారతంనాటి మత, ధార్మిక పరిస్థితులను, తిక్కన కవితాశిల్పాన్ని, నాటకీయతను అవగాహన చేసుకోగలరు.
4. ఎఱ్ఱన సూక్తివైచిత్రిని, ఇతిహాస కవిత్వంలోని విభిన్న రీతులపట్ల అభిరుచిని పొందగలరు. శ్రీనాథుని కాలం నాటి కవితావిశేషాలను, మొల్ల కవితా విశిష్టతను గుర్తించగలరు.
5. తెలుగు పద్యం స్వరూప-స్వభావాలను, సాహిత్యాభిరుచిని పెంపొందించుకుంటారు. ప్రాచీన కావ్యభాషలోని వ్యాకరణాంశాలను అధ్యయనం చేయడం ద్వారా భాషాసామర్థ్యాన్ని, రచనలో మెళకువలను గ్రహించగలరు.

పాఠ్య ప్రణాళిక

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మహాభారతం – సభాపర్వం – ప్రథమాశ్వాసం – (26–57 పద్యాలు)

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ధౌమ్య ధర్మోపదేశము – తిక్కన

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యూనిట్ - IV

పలనాటి బెబ్బులి – శ్రీనాథుడు (పలనాటి వీరచరిత్ర – ద్విపద కావ్యం పుట 108 – 112 'బాలచంద్రుడు భీమంబగు సంగ్రామం బొనర్చుట.. (108)...

వెఱగంది కుంది' (112) సం. అక్కిరాజు ఉమాకాంతం ముద్రణ. వి. కె. స్వామి, బెజవాడ 1911.

యూనిట్ - V

సీతారావణ సంవాదం – మొల్ల

రామాయణము – సుందరకాండము – (40 – 87 పద్యాలు)

వ్యాకరణం

సంధులు: ఉత్వ, త్రిక, ద్రుతప్రకృతిక, నుగాగమ, ద్విరుక్తటకారాదేశ, యణాదేశ, వృద్ధి, శ్చుత్వ, జశ్త్వ, అనునాసిక సంధులు.

సమాసాలు: అవ్వయిభావ, తత్పురుష, కర్మధారయ, ద్వంద్వ, ద్విగు, బహువ్రీహి.

అలంకారాలు:

అర్థాలంకారాలు: ఉపమ, ఉత్ప్రేక్ష, రూపక, స్వభావోక్తి, అర్థాంతరవ్యాస, అతిశయోక్తి.

శబ్దాలంకారాలు: అనుప్రాస (వృత్యనుప్రాస, ఛేకానుప్రాస లాటానుప్రాస, అంత్యానుప్రాస)

ఛందస్సు

వృత్తాలు: ఉత్పలమాల, చంపకమాల, శార్దూలము, మత్తేభము;

జాతులు: కందం, ద్విపద; ఉపజాతులు: ఆటవెలది, తేటగీతి, సీసం మరియు ముత్యాలసరాలు

విషయ సూచిక

ప్రాచీన తెలుగు కవిత్వం

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A Course in
Communication and Soft Skills

As per Choice Based Credit System (CBCS)
For Degree I-Year/I-sem
Common to all Branches

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A Course in Communication and Soft Skills

Learning Outcomes

By the end of the course the learner will be able to:

- Use grammar effectively in writing and speaking.
- Demonstrate the use of good vocabulary
- Demonstrate an understating of writing skills
- Acquire ability to use Soft Skills in professional and daily life.
- Confidently use the tools of communication skills

Unit-1: Listening Skills

i. Importance of Listening
ii. Types of Listening
iii. Barriers to Listening
iv. Effective Listening

Unit-2: Speaking Skills

a. Sounds of English: Vowels and Consonants
b. Word Accent
c. Intonation

Unit-3: Grammar

a. Concord
b. Modals
c. Tenses (Present/Past/Future)
d. Articles
e. Prepositions
f. Question Tags
g. Sentence Transformation (Voice, Reported Speech & Degrees of Comparison)
h. Error Correction

Unit-4: Writing

i. Punctuation
ii. Spelling
iii. Paragraph Writing

Unit-5: Soft Skills

a. SWOC
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A Course in Communication and Soft Skills

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Life Skill Course

Human Values and Professional Ethics

As per Choice Based Credit System (CBCS)
Common to all Branches

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Human Values and Professional Ethics

Learning Outcome

On completion of this course, the UG students will be able to:

- Understand the significance of value inputs in a classroom and start applying them in their life and profession
- Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.
- Understand the value of harmonious relationship based on trust and respect in their life and profession
- Understand the role of a human being in ensuring harmony in society and nature.
- Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.

Unit-1: Introduction - Definition, Importance, Process & Classifications of Value Education

- Understanding the need, basic guidelines, content and process for Value Education
- Understanding the thought provoking issues; need for Values in our daily life
- Choices making - Choosing, Cherishing & Acting
- Classification of Value Education: understanding Personal Values, Social Values, Moral Values & Spiritual Values.

Unit-2: Harmony in the Family - Understanding Values in Human Relationships

- Understanding harmony in the Family- the basic unit of human interaction
- Understanding the set of proposals to verify the Harmony in the Family;

- Trust (*Vishwas*) and Respect (*Samman*) as the foundational values of relationship
- Present Scenario: Differentiation (Disrespect) in relationships on the basis of body, physical facilities, or beliefs.
- Understanding the Problems faced due to differentiation in Relationships
- Understanding the harmony in the society (society being an extension of family): *Samadhan*, *Samridhi*, *Abhay*, *Sah-astitva* as comprehensive Human Goals
- Visualizing a universal harmonious order in society- Undivided Society (*Akhand Samaj*), Universal Order (*Sarvabhaum Vyawastha*)- from family to world family.

Unit-3: Professional Ethics in Education

- Understanding about Professional Integrity, Respect & Equality, Privacy, Building Trusting Relationships.
- Understanding the concepts; Positive cooperation, Respecting the competence of other professions.
- Understanding about Taking initiative and Promoting the culture of openness.
- Depicting Loyalty towards Goals and objectives.

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Skill Development Course

Office Secretaryship

As per Choice Based Credit System (CBCS)
Common to all Branches

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Office Secretaryship

Learning Outcomes

By the successful completion of course, the student will be able to;

1. Understand the organizational hierarchy and outlines of functioning.
2. Comprehend the role of office secretaryship in a small and medium organization.
3. Acquire knowledge on office procedures and interpersonal skills.
4. Apply the skills in preparing and presenting notes, letters, statements, reports in different situations.

Unit-I: Introduction

Introduction - Organisational structure of a small and medium organization - Types of offices - Kinds of secretaries - The scope of office secretaryship.

Unit-II: Office Secretary

The role of an office secretary - Duties and responsibilities - Usage of different devices - Flowchart and office manuals - Coordinating different wings of an office/organisaton - Arranging common meetings - Operations of banking and financial services - travel and hospitality management services.

Unit-III: Office Procedures

Office procedures - Filing - Circulating files - Preparation of notes, circulars, agenda and minutes of meetings - Issue of press notes - Maintenance of files and records - Inventory, office, human resources, financial and confidential - maintaining public relations.

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Computer Fundamentals and Office Tools

As per Choice Based Credit System (CBCS)
I - BCA / I-semester

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I - BCA / I - *Semester* as per CBCS

Computer Fundamentals and Office Tools

Course Outcomes

- Describe the usage of computers and why computers are essential components in business and society.
- Identify categories of programs, system software and applications. Organize and work with files and folders.
- Compose, format and edit a word document and working with macros.
- Create work sheets and using various functions.
- Make presentations and inserting multimedia in them.

Unit-I: Basic of Computer

Introduction: Characteristics of Computer, The evolution of Computers, The Computer Generations.

Basic Computer Organization: Input Unit, Output Unit, Storage Unit, Arithmetic Logic Unit, Control Unit, Central Processing Unit.

Secondary Storage Devices: Magnetic Disk, Optical Disk. Magneto optical Disk, Mass Storage Devices, Flash Drive and Other related Concepts.

Unit-II: Computer Software, Languages & OS

Computer Software: Types of Software, Logical systems Architecture, Acquiring Software, Software developmental Steps, Software Engineering.

Computer Languages: Machine Language, Assembly Language, High Level Language, Some High Level Languages, Characteristics of good Programming Language.

Operating Systems: What is an Operating System, Process Management, Some Popular Operating Systems.

Unit-III: MS Word

MS-Word: Features of MS-Word, MS-Word Window components, working with formatted text, Shortcut keys, Formatting documents: Selecting text, Copying & moving data, Formatting characters, changing cases, Paragraph formatting, Indents, Drop Caps, Using format painter, Page formatting, Header & footer, Bullets & numbering, Tabs, Forming tables. Finding &replacing text, go to (F5) command, proofing text (Spell check, Auto correct), Reversing actions, Macros, Inserting pictures, Hyper links, Mail merging, Printing documents.

Unit-IV: MS Excel

MS-Excel: Excel Features, Spreadsheets, workbooks, creating, saving & editing a workbook, Renaming sheet, cell entries (numbers, labels, and formulas), spell check, find and replace, Adding and deleting rows and columns Filling series, fill with drag, data sort, Formatting work sheet, Functions and its parts, Some useful Functions in excel (SUM, AVERAGE, COUNT, MAX, MIN, IF), Cell referencing (Relative, Absolute, Mixed), What-if analysis Introduction to charts: types of charts, creation of charts, printing a chart, printing worksheet.

Unit-V: MS Power Point

MS-Power Point: Features of Power Point, Uses, components of slide, templates and wizards, using template, choosing an auto layout, using outlines, adding subheadings, editing text, formatting text, using master slide, adding slides, changing color scheme, changing background and shading, adding header and footer, adding clip arts and auto shapes. Various presentation, Working in slide sorter view (deleting, duplicating, rearranging slides), adding transition and animations to slide show, inserting music or sound on a slide, viewing slide show, Printing slides.

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Computer Fundamentals and Office Tools

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Programming in 'C'

As per Choice Based Credit System (CBCS)

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I - Year / I - *Semester* as per CBCS
Programming in 'C'

Course Outcomes

Upon successful completion of this course, students will be able to;

- Understand the basic terminology used in computer programming.
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Understand the dynamics of memory by the use of pointers and Structures.
- Apply different operations in File handling.

Unit-I

Introduction to Algorithms and Programming Languages: Algorithm - Key features of Algorithms - examples of Algorithms, Flow Charts - Pseudo code, Programming Languages - Generation of Programming Languages - Structured Programming Language. **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

Control Structures and Functions: Decision Control and Looping Statements: Introduc tion to Decision Control Statements, Conditional Branching Statements, Iterative Statements, Nested Loops, Break and Continue Statement - Goto Statement. **Functions**: Introduction, Using functions - Function declaration/ prototype - Function definition, Function call - Return statement - Passing parameters, Scope of variables, Storage Classes, Recursive functions.

Unit-III

Arrays and Strings: ***Arrays*****:** Introduction, Declaration of Arrays, Accessing elements of the Array - Storing Values in Array, Calculating the length of the Array, Operations that can be performed on Array, One dimensional array, Accessing one dimensional array, Passing one dimensional array to function, Two dimensional Arrays, Accessing two dimensional arrays, Passing two dimensional arrays to functions. ***Strings:*** Introduction, String Operations using String functions.

Unit-IV

Pointers, Structures and Unions: ***Pointers:*** Understanding Computer Memory - Introduction to Pointers, Declaring Pointer Variable, Pointer Expressions and Pointer Arithmetic - Null Pointers, Passing Arguments to Functions using Pointer, Pointer and Arrays - Passing Array to Function, Memory Allocation in C Programs, Memory Usage - Dynamic Memory Allocation, Drawbacks of Pointers. ***Structures***: Introduction to structures, Nested Structures. ***Union, and Enumerated Data Types***: Introduction to Union - accessing union elements, Enumerated Data Types.

Unit-V

File Handling: *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.

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Numerical and Statistical Methods

As per Choice Based Credit System (CBCS)

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I - Year / I - *Semester* as per CBCS
Numerical and Statistical Methods

Course Outcomes

- Skill to choose and apply appropriate numerical methods to obtain appropriate solutions to difficult mathematical problems.
- Ability to apply various statistical techniques such as Measures of Central Tendency and Dispersion.
- Understanding of relationship between variables using the method of Correlation and Fit Analysis.
- Skill to execute programs of various Numerical Methods and Statistical techniques for

Unit-1: Solution of Equations

Solution of equations (polynomial and transcendental equations) interval having methods, secant, Regula - Falsi, Newton - Raphson methods, Fixed point Iteration method.

Unit-2: Solution of System of Linear Equations

Solution of system of linear equations: Gauss - Elemination method, Gauss - Jordan, Gauss - Siedel iteration method, LU- Decomposition method, Eigen values and Eigen vectors of a square matrix.

Unit-3: Interpolation

Forward and backward differences, Newton's forward and backward formula, Lagrange's interpolation and Lagrange's inverse interpolation formula.

Numerical differentiation, integration: Numerical differentiation forward and backward formula,

Trapezoidal and Simpsons formulas.

Unit-4: Statistical Methods

Basic concepts and definition of statistics : Mean ,Median , Mode , standard deviation ,coefficient of variation ,skewness and kurtosis ,Karl Pearson Correlation coefficient ,Rank Correlation and illustrated examples .

Unit-5: Probability

Basic concepts and definition of probability , Probability axioms, Conditional probability , Addition and Multiplication theorem of probability (Based on set theory concepts) , Bayes theorem , problems and applications .

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ఆధునిక తెలుగు సాహిత్యం

డిగ్రీ (జనరల్) / సెమిస్టర్ - II

రచయితలు

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జనరల్ తెలుగు / సెమిస్టర్ – II

ఆధునిక తెలుగు సాహిత్యం

అభ్యసన ఫలితాలు

ఈ కోర్సు విజయవంతం ముగించాక, విద్యార్థులు క్రింది అభ్యసన ఫలితాలను పొందగలరు.

1. ఆంగ్లభాష ప్రభావం కారణంగా తెలుగులో వచ్చిన ఆధునిక సాహిత్యాన్ని, అని విశిష్టతను గుర్తిస్తారు.
2. సమకాలీన ఆధునిక సాహిత్య ప్రక్రియలైన వచన కవిత్వం, కథ, నవల, నాటకం, విమర్శ లపై అవగాహన పొందుతారు.
3. భావకవిత, అభ్యుదయ కవితలక్ష్యాలను గూర్చిన జ్ఞాన్నాన్ని పొందుతారు. అస్తిత్వవాద ఉద్యమాలపుట్టుకను, అవశ్యకతను గుర్తిస్తారు.
4. కథాసాహిత్యం ద్వారా సామాజిక చైతన్యాన్ని పొందుతారు. సిద్ధాంతాల ద్వారా కాకుండా, వాస్తవ పరిస్థితులను తెలుసుకోవడం ద్వారా సిద్ధాంతాన్ని సమీక్షించగలరు.
5. ఆధునిక తెలుగు కల్పనాసాహిత్యం ద్వారా సామాజిక, సాంస్కృతిక, రాజకీయ చైతన్యాన్ని పొందుతారు.

పాఠ్య ప్రణాళిక

j ÐO' { Ù I: ఆధునిక కవిత్వం

1.	ఆధునిక కవిత్వం	:	పరిచయం
2.	కొండవీడు	:	దువూరి రామిరెడ్డి
			(కవికోకిల గ్రంథావళి ఖండకావ్యాలు నక్షత్రమాల సంపుటి నుండి)
3.	మాతృసంగీతం	:	అనిసెట్టి సుబ్బారావు (అగ్నివీణ కవితాసంపుటి నుండి)
4.	తాతకో నూలుపోగు	:	బందరు ప్రసాదమూర్తి (కలనేత కవితాసంపుటి నుండి)

యూనిట్ - II: కథానిక

5.	తెలుగు కథానిక	:	పరిచయం
6.	భయం (కథ)	:	కాళీపట్నం రామరావు
7.	స్వేదం ఖరీదు....(కథ)	:	రెంటాల నాగేశ్వరరావు

యూనిట్ - III: నవల

8. తెలుగు నవల : పరిచయం

9. రథచక్రాలు (నవల) : మహీధర రామ్మోహన రావు (సంక్షిప్త ఇతివత్తం మాత్రం)

10. రథచక్రాలు (సమీక్షా వ్యాసం) డా.॥యల్లాప్రగడ మల్లికార్జునరావు

యూనిట్ - IV: నాటకం

11. తెలుగు నాటకం : పరిచయం

12. యక్షగానము (నాటిక) : ఎం.వి.ఎస్. హరనాథరావు

13. అపురూప కళారూపాల విధ్వంసదశ్యం యక్షగానము (సమీక్షా వ్యాసం) డా.॥ కందిమళ్ళ సాంబశివరావు

యూనిట్- V: విమర్శ

14. తెలుగు సాహిత్యం విమర్శ: పరిచయం

15. విమర్శ స్వరూప స్వభావాలు ఉత్తమ విమర్శకుడు లక్షణాలు

విషయ సూచిక

ఆధునిక తెలుగు సాహిత్యం

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A Course in

Reading & Writing Skills

As per Choice Based Credit System (CBCS)
For Degree I-year / II-sem
Common to all Branches

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A Course in Reading & Writing Skills

Learning Outcomes

By the end of the course the learner will be able to:

- Use reading skills effectively
- Comprehend different texts
- Interpret different types of texts
- Analyse what is being read
- Build up a repository of active vocabulary
- Use good writing strategies
- Write well for any purpose
- Improve writing skills independently for future needs

Unit-1

Prose : 1. How to Avoid Foolish Opinions Bertrand Russell

Skills : 2. Vocabulary: Conversion of Words

: 3. One Word Substitutes

: 4. Collocations

Unit-2

Prose	: 1. The Doll's House	Katherine Mansfield
Poetry	: 2. Ode to the West Wind	P B Shelley
Non-Detailed Text	: 3. Florence Nightingale	Abrar Mohsin
Skills	: 4. Skimming and Scanning	

Unit-3

Prose : 1. The Night Train at Deoli Ruskin Bond

Poetry : 2. Upagupta Rabindranath Tagore

Skills : 3. Reading Comprehension

: 4. Note Making/Taking

Unit-4

Poetry : 1. Coromandel Fishers Sarojini Naidu

Skills : 2. Expansion of Ideas

: 3. Notices, Agendas and Minutes

Unit-5

Non-Detailed Text : 1. An Astrologer's Day R K Narayan

Skills : 2. Curriculum Vitae and Resume

: 3. Letters

: 4. E-Correspondence

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A Course in Reading & Writing Skills

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Life Skill Course

Indian Culture & Science

As per Choice Based Credit System (CBCS)

Common to all Branches

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Indian Culture & Science

Learning Outcomes

By successful completion of the course, students will be able to:

1. Understand the evolution of India's culture.
2. Analyze the process of modernization of Indian society and culture from past to future.
3. Comprehend objective education and evaluate scientific development of India in various spheres.
4. Inculcate nationalist and moral fervor and scientific temper.

Unit-I: Unity in Diversity in India

Coexistence of various religions since ancient times - Hinduism, Buddhism, Jainism and Atheism, and later Sikhism, Islam and Christianity

The Bhakti (Vishnavite and Saivaite) and Sufi Movements

The concepts of seela, karuna, kshama, maitri, vinaya, santhi and ahimsa Achievements in Literature, Music, Dance, Sculpture and Painting - Craftsmanship in cloth, wood, clay, metal and ornaments

Cultural diversity, Monogamy, Family system, Important seasonal festivals

Unit-II: Social Reforms and Modern Society

Reforms by Basaveswara - Raja Rama Mohan Roy - Dayananda Saraswathi - Swamy Vivekananda - Mahatma Gandhi - B. R. Ambedkar - Reforms in Andhra by Vemana,Veerabrahmam, Gurajada, Veeresalingam and GurramJashua (only reforms in brief, biographies not needed)

Modern Society: Family unity, Community service, Social Harmony, Civic Sense, Gender Sensitivity, Equality, National Fervor

Unit-III: Science and Technology

Objectivity and Scientific Temper - Education on Scientific lines (Bloom's Taxonomy) - Online Education

Developments in Industry, Agriculture, Medicine, Space, Alternate Energy, Communications, Media through ages

Co-curricular Activities Suggested

1. Assignments, Group discussions, Quiz etc
2. Invited Lecture by a local expert
3. Visit to a scientific institutions, local heritage sites, museums, industries etc

Content
Indian Culture & Science

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Skill Development Course

Advertising

As per Choice Based Credit System (CBCS)
Common to all Branches

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Advertising

Learning Outcomes

After Successful completion of this course, the students are able to;

1. Understand the field of Advertising
2. Comprehend opportunities and challenges in Advertising sector
3. Prepare a primary advertising model
4. Understand applying of related skills
5. Examine the scope for making advertising a future career

Unit-1

Introduction of advertising concepts- functions - Types of advertising - Creative advertising messages - Factors determining opportunities of a product/service/Idea

Unit-2

Role of advertising agencies and their responsibilities - scope of their work and functions - Ethical issues - Identifying target groups -Laws in advertising. Advertising Statutory Bodies in India - Role of AAAI (Advertising Agencies Association of India), ASCI (Advertising Standard Council of India)

Unit-3

Types of advertising - Basic characteristics of a typical advertisement - Reaching target groups - Local advertising - Feedback on impact of advertisement - Business promotion.

Content

Advertising

Unit-1

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Data Structures

As per Choice Based Credit System (CBCS)
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I - Year / II - *Semester* as per CBCS
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. In addition, another objective of the course is to develop effective software engineering practice, emphasizing such principles as decomposition, procedural abstraction, and software reuse.

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, Primitive and Non-primitive Data Structures, Linear and Non-linear Structures.

Linear Lists - ADT, Array and Linked representations (Single and Double Linked lists), Pointers.

Unit-II

Stacks: Definition, Stacks using Array and Linked representations, expressions, notations.

Queues: Definition, Queue using Array and Linked representations, Circular Queues, Dequeues.

Unit-III

Trees: Binary Tree, Definition, Properties, Trees using Array and Linked representations, Implementations and Applications, Heaps Trees.

Binary Search Trees (BST) - Definition, Operations and Implementations. B Trees, B+ Trees Implementation

UnitIV

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, Sequential and Binary Searching.

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Introduction to Python Programming

I - BCA / I I- Semester

Choice Based Credit System(CBCS)

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Python

Course outcomes

After successful completion of this course, the students will be able to:

CO 1: Summarize the fundamental concepts of python programming. [K2]

CO 2: Interpret object oriented and event driven programming in python. [K2]

CO 3: Apply the suitable data structures to solve the real time problems. [K3]

CO 4: Apply regular expressions for many different situations. [K3]

Unit-I

Introduction to python: Numbers, strings, variables, operators, expressions, Indentation, String operations and functions, math function calls, Input/output statements, conditional if, while and for loops,

Unit-II

Functions: user defined functions, parameters to functions, recursive functions, and lambda function.

Event driven programming: Turtle graphics, Turtle bar chart, Widgets, key press events, mouse events, timer events.

Unit-III

Data structures: List- list methods & functions, Tuple-tuple methods & functions, Dictionaries-dictionary methods & functions, traversing dictionaries. Sets-methods & functions, Files

Unit-IV

OOP: class, object, methods, constructors, inheritance, inheritance types, polymorphism, operator overloading, abstract classes, exception handling.

Unit-V

Regular expressions: Power of pattern matching and searching using regex in python, Meta characters and Sequences used in Patterns, Password, email, URL validation using regular expression, Pattern finding programs using regular expression.

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Database Management Systems

As per Choice Based Credit System (CBCS)

I- BCA / II - Semester

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సృజనాత్మక రచన

డిగ్రీ (జనరల్) / సెమిస్టర్ - III

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సృజనాత్మక రచన

అభ్యసన ఫలితాలు

ఈ కోర్సు విజయవంతం ముగించాక, విద్యార్థులు క్రింది అభ్యసన ఫలితాలను పొందగలరు.

1. తెలుగు సాహిత్య అభ్యసన ద్వారా నేర్చుకున్న నెపుణ్యాలను, సృజనాత్మక నైపుణ్యాలుగా మార్చుకోగలరు.
2. విద్యార్థులు భాషాతత్వాన్ని, భాష యొక్క ఆవశ్యకతను, భాష యొక్క ప్రాధాన్యాన్ని గుర్తిస్తారు. మనిషి వ్యక్తిగత జీవనానికి, సామాజిక వ్యవస్థ పటిష్టతకు భాష ప్రధానమని తెలుసుకుంటారు.

   తెలుగుభాషలోని కీలకాంశాలైన 'వర్ణం–పదం–వాక్యా'ల ప్రాధాన్యాన్ని గుర్తిస్తూ, వాగ్రూప– లిఖితరూప వ్యక్తీకరణ ద్వారా భాషానైపుణ్యాలను మొరుగుపరచుకోగలరు.
3. భాషానైపుణ్యాలను అలవరుచుకోవడంతోపాటు వినియోగించడం నేర్చుకుంటారు. రచనా, భాషణానైపుణ్యాలను సృజనాత్మక రూపంలో వ్యక్తీకరించగలరు.
4. ప్రాచీన పద్యరచనతో పాటు ఆధునిక కవిత, కథ, వ్యాసం మొదలైన సాహిత్యప్రక్రియల నిర్మాణాలకు సంబంధించిన సిద్ధాంతవిషయాలను నేర్పడంతో పాటు వారిలో రచనా నైపుణ్యాలను పెంపొందించుకోగలరు.
5. సృజన రంగర, ప్రసారమాధ్యమ రంగాల్లో ఉపాధి అవకాశాలను అందిపుచ్చుకోగలరు.
6. అనువాద రంగంలో నైపుణ్యం సంపాదించగలరు.

పాఠ్య ప్రణాళిక

యూనిట్ - 1: వ్యక్తీకరణ నైపుణ్యం

1. భాషా ప్రాథమిక అంశాలు : (భాష– నిర్వచనం, లక్షణాలు, ఆవశ్యకత ప్రయోజనాలు)
2. వర్ణం, పదం, వాక్యం : (లక్షణాలు, సామాన్య– సంయుక్త– సంశ్లిష్ట వాక్యాలు)
3. భాషా నిర్మాణంలో వర్ణం, పదం, వాక్యం

యూనిట్ - II : సృజనాత్మక రచనలు

4. కవితా రచన : ఉత్తమ కవితా – లక్షణాలు
5. కథారచన : ఉత్తమ కథ – లక్షణాలు
6. వ్యాస రచన : ఉత్తమ వ్యాసం లక్షణాలు

యూనిట్ - III: అనువాద రచన

7. అనువాదం– నిర్వచనం, అనువాద పద్ధతులు

8. అనువాద సమస్యలు – భౌగోళిక, భాషా, సంస్కృతిక సమస్యలు, పరిష్కారాలు

9. అభ్యాసం - ఆంగ్లం నుండి తెలుగుకు, తెలుగు నుండి ఆంగ్లానికి ఒక పేరును అనువదించడం

యూనిట్ - IV: మాధ్యమాలకు రచన - 1 (ముద్రణామాధ్యమం/ ప్రింట్ మీడియా)

10. ముద్రణామాధ్యమం: పరిచయం – పరిధి – వికాసం

11. వివిధ రకాల పత్రికలు , పరిశీలన – పత్రికా భాష – శైలి – వైవిధ్యం

12. పత్రికా రచన : (వార్తా రచన, సంపాదకీయాలు, సమీక్షలు – అవగాహన)

యూనిట్ - V: మాధ్యమాల రచన - 2 (ప్రసార మాధ్యమం/ ఎలక్ట్రానిక్ మీడియా)

13. ప్రసార మాధ్యమాలు : (నిర్వచనం,రకాలు, విస్తృతి ప్రయోజనాలు)

14. శ్రవణ మాధ్యమాలు : (రచన, రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం)

15. దృశ్య మాధ్యమాలు : (రచన, వ్యాఖ్యానం(యాంకరింగ్), టెలివిజన్ రచన)

విషయ సూచిక
సృజనాత్మక రచన

యూనిట్ - 1: వ్యక్తీకరణ నైపుణ్యం

1. భాషా ప్రాథమిక అంశాలు

1.1 ఉద్దేశ్యం **3**

1.2 పాఠ్యభాగం **3**

1.3 పాఠ్యభాగ పరిచయం **10**

1.4 పాఠ్యభాగ సారాంశము **10**

1.5 **వ్యాసరూప ప్రశ్నలు** **12**

1.6 సంగ్రహ ప్రశ్నలు **14**

2. వర్ణం, పదం, వాక్యం

2.1 ఉద్దేశ్యం **17**

2.2 పాఠ్యభాగం **17**

2.3 పాఠ్యభాగ పరిచయం **21**

2.4 పాఠ్యభాగ సారాంశము **21**

2.5 **వ్యాసరూప ప్రశ్నలు** **21**

2.6 సంగ్రహ ప్రశ్నలు **23**

3. భాషా నిర్మాణంలో వర్ణం, పదం, వాక్యం

3.1 ఉద్దేశ్యం **25**

3.2 పాఠ్యభాగం **25**

3.3 పాఠ్యభాగ పరిచయం **32**

3.4 పాఠ్యభాగ సారాంశము **32**

3.5 **వ్యాసరూప ప్రశ్నలు** **32**

3.6 సంగ్రహ ప్రశ్నలు **38**

3.7 విద్యార్థులకు అభ్యాసం **42**

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4. కవితా రచన

4.1 ఉద్దేశ్యం **45**

4.2 పాఠ్యభాగం **45**

4.3 పాఠ్యభాగ పరిచయం **48**

4.4 పాఠ్యభాగ సారాంశము **48**
4.5 వ్యాసరూప ప్రశ్నలు **49**
4.6 సంగ్రహ ప్రశ్నలు **52**

5. కథారచన

5.1 ఉద్దేశ్యం **55**
5.2 పాఠ్యభాగం **55**
5.3 పాఠ్యభాగ పరిచయం **60**
5.4 పాఠ్యభాగ సారాంశము **61**
5.5 వ్యాసరూప ప్రశ్నలు **61**
5.6 సంగ్రహ ప్రశ్నలు **66**
5.7 విద్యార్థులకు అభ్యాసం **70**

6. వ్యాస రచన

6.1 ఉద్దేశ్యం **55**
6.2 పాఠ్యభాగం **55**
6.3 పాఠ్యభాగ పరిచయం **60**
6.4 పాఠ్యభాగ సారాంశము **61**
6.5 వ్యాసరూప ప్రశ్నలు **61**
6.6 సంగ్రహ ప్రశ్నలు **66**
6.7 విద్యార్థులకు అభ్యాసం **70**
6.8 ప్రాజెక్టు వర్క్ **80**

యూనిట్ - III: అనువాద రచన

7. అనువాదం

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7.3 పాఠ్యభాగ పరిచయం **86**
7.4 పాఠ్యభాగ సారాంశము **86**
7.5 వ్యాసరూప ప్రశ్నలు **86**
7.6 సంగ్రహ ప్రశ్నలు **91**
7.7 విద్యార్థులకు అభ్యాసం **92**

8. అనువాద సమస్యలు

8.1 ఉద్దేశ్యం **93**
8.2 పాఠ్యభాగం **93**

8.3 పాఠ్యభాగ పరిచయం **104**
8.4 పాఠ్యభాగ సారాంశము **104**
8.5 వ్యాసరూప ప్రశ్నలు **104**
8.6 సంగ్రహ ప్రశ్నలు **117**
8.7 విద్యార్థులకు అభ్యాసం **118**

9. అభ్యాసం

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9.4 విద్యార్థులకు అభ్యాసం **120**

యూనిట్ - IV: మాధ్యమాలకు రచన - 1 (ముద్రణామాధ్యమం/ ప్రింట్ మీడియా)

10. ముద్రణామాధ్యమం

10.1 ఉద్దేశ్యం **123**
10.2 పాఠ్యభాగం **123**
10.3 పాఠ్యభాగ పరిచయం **126**
10.4 పాఠ్యభాగ సారాంశము **126**
10.5 వ్యాసరూప ప్రశ్నలు **127**
10.6 సంగ్రహ ప్రశ్నలు **129**
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11. వివిధ రకాల పత్రికలు

11.1 ఉద్దేశ్యం **131**
11.2 పాఠ్యభాగం **131**
11.3 పాఠ్యభాగ పరిచయం **137**
11.4 పాఠ్యభాగ సారాంశము **138**
11.5 వ్యాసరూప ప్రశ్నలు **138**
11.6 సంగ్రహ ప్రశ్నలు **142**
11.7 విద్యార్థులకు అభ్యాసం **144**

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12.6 సంగ్రహ ప్రశ్నలు **152**
12.7 విద్యార్థులకు అభ్యాసం **154**

యూనిట్ - V: మాధ్యమాల రచన - 2 (ప్రసార మాధ్యమం/ ఎలక్ట్రానిక్ మీడియా)

13. ప్రసార మాధ్యమాలు

13.1 ఉద్దేశ్యం **157**
13.2 పాఠ్యభాగం **157**
13.3 పాఠ్యభాగ పరిచయం **159**
13.4 పాఠ్యభాగ సారాంశము **159**
13.5 వ్యాసరూప ప్రశ్నలు **159**
13.6 సంగ్రహ ప్రశ్నలు **161**
13.7 విద్యార్థులకు అభ్యాసం **162**

14. శ్రవణ మాధ్యమాలు

14.1 ఉద్దేశ్యం **163**
14.2 పాఠ్యభాగం **163**
14.3 పాఠ్యభాగ పరిచయం **170**
14.4 పాఠ్యభాగ సారాంశం **170**
14.5 వ్యాసరూప ప్రశ్నలు **170**
14.6 సంగ్రహ ప్రశ్నలు **175**
14.7 విద్యార్థులకు అభ్యాసం **176**

15. దృశ్య మాధ్యమాలు

15.1 ఉద్దేశ్యం **177**
15.2 పాఠ్యభాగం **177**
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A Course in

Conversational Skills

As per Choice Based Credit System (CBCS)
For Degree I - Year / III - Semester
Common to all Branches

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A Course in Conversational Skiils

Learning Outcomes

By the end of the course the learner will be able to:

- Speak fluently in English
- Participate confidently in any social interaction
- Face any professional discourse
- Demonstrate critical thinking
- Enhance conversational skills by observing the professional interviews

Unit-I

Speech: 1. Tryst with Destiny Jawaharlal Nehru

Skills: 2. Greetings

3. Introductions

Unit-II

Speech: 1. Yes, We Can Barack Obama

Interview: 2. A Leader Should Know How to Manage Failure Dr.A.P.J.Abdul Kalam/ India Knowledge at Wharton

Skills: 3. Requests

Unit-III

Interview: 1. Nelson Mandela's Interview With Larry King

Skills: 2. Asking and Giving Information

3. Agreeing and Disagreeing

Unit-IV

Interview: 1. JRD Tata's Interview With T.N.Ninan

Skills: 2. Dialogue Building

3. Giving Instructions/Directions

Unit-V

Speech: 1. You've Got to Find What You Love Steve Jobs

Skills: 2. Debates

3. Descriptions

4. Role Play

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A Course in Conversational Skiils

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Life Skill Course

Environmental Education

As per Choice Based Credit System (CBCS)
Common to all Branches

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Environmental Education

Learning outcomes

On completion of this course the students will be able to …..

1. Understand the nature, components of an ecosystem and that humans are an integral part of nature.
2. Realize the importance of environment, the goods and services of a healthy biodiversity, dependence of humans on environment.
3. Evaluate the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities.
4. Discuss the laws/ acts made by government to prevent pollution, to protect biodiversity and environment as a whole.
5. Acquaint with international agreements and national movements, and realize citizen's role in protecting environment and nature.

Unit-1: Environment and Natural Resources

1. Multidisciplinary nature of environmental education; scope and importance.
2. Man as an integral product and part of the Nature.
3. A brief account of land, forest and water resources in India and their importance.
4. Biodiversity: Definition; importance of Biodiversity - ecological, consumptive, productive, social, ethical and moral, aesthetic, and option value.
5. Levels of Biodiversity: Genetic, species and ecosystem diversity.

Unit-2: Environmental Degradation and Impacts

1. Human population growth and its impacts on environment; land use change, land degradation, soil erosion and desertification.
2. Use and over-exploitation of surface and ground water, construction of dams, floods, conflicts over water (within India).
3. **Deforestation:** Causes and effects due to expansion of agriculture, firewood, mining, forest fires and building of new habitats.
4. Non-renewable energy resources, their utilization and influences.
5. A brief account of air, water, soil and noise pollutions; Biological, industrial and solid wastes in urban areas. Human health and economic risks.
6. Green house effect - global warming; ocean acidification, ozone layer depletion, acid rains and impacts on human communities and agriculture.

7. **Threats to biodiversity:** Natural calamities, habitat destruction and fragmentation, over exploitation, hunting and poaching, introduction of exotic species, pollution, predator and pest control.

Unit-3: Conservation of Environment

1. Concept of sustainability and sustainable development with judicious use of land, water and forest resources; afforestation.
2. Control measures for various types of pollution; use of renewable and alternate sources of energy.
3. **Solid waste management:** Control measures of urban and industrial waste.
4. **Conservation of biodiversity:** In-situ and ex-situ conservation of biodiversity.
5. **Environment Laws:** Environment Protection Act; Act; Wildlife Protection Act; Forest Conservation Act.
6. **International agreements:** Montreal and Kyoto protocols; Environmental movements: Bishnois of Rajasthan, Chipko, Silent valley.

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Life Skill Course

Personality Enhancement & Leadership

As per Choice Based Credit System (CBCS)
Common to all Branches

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Personality Enhancement & Leadership

Learning Outcomes

By successful completion of the course, students will be able to:

- Develop comprehensive understanding of personality
- Know how to assess and enhance one's own personality
- Comprehend leadership qualities and their importance
- Understand how to develop leadership qualities

Unit-I

Meaning of Personality – Explanations of Human Personality – Psychodynamic Explanations – Social Cognitive Explanation – Big Five traits of Personality

Unit-II

Assessment of Personality - Projective& Self Report Techniques - Building Self-Confidence – Enhancing Personality Skills

Unit-III

Leadership Characteristics – Types of Leaders – Importance of Leadership – Leadership Skills – Building and Leading Efficient Teams – Leadership Qualities of Abraham Lincoln, mahatma Gandhi, Prakasam Pantulu, Dr. B. R. Ambedkar & J.R.D.Tata

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Personality Enhancement & Leadership

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Skill Development Course

Disaster Management

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Common to all Branches

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Disaster Management

Learning Outcomes

After successful completion of the course, the students are able to;

1. Understand the nature, cause and effects of disasters
2. Comprehend the importance of Disaster Management and the need of awareness
3. Acquire knowledge on disaster preparedness, recovery remedial measures and personal precautions
4. Volunteer in pre and post disaster management service activities

Unit-I

Introduction of Disaster - Different types of disasters- Natural- (flood, cyclone, earthquake, Famine and pandemic) - Accidental- (Fire, Blasting, Chemical leakage, Rail, Aviation, Road boat tragedies and nuclear pollution) - Disaster Management Act 2005

Unit-II

Causes and immediate effects of Disasters - Preparedness of disasters –Precautions – Dissemination of information - Nature and concepts - Role of National Disaster Management Authority and Role of Government and non governmental organizations in protecting human livestock and natural resources.-Use of technology -Role of Citizens and Youth in the prevention.

Unit-III

Post disaster effects - short term - Procedures for Rehabilitation and Recovery - Role of volunteers and Safety Precautions - Long term remedial and preventive measures – Collection, filing and storage of information - Case studies.

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Disaster Management

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Accounting and Financial Management

II - BCA / III - Semester

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Accounting and Financial Management

Unit-I

Accounting-Scope-Nature- Objective-Principle concepts-Users of Accounting Information-Classification of Accounts-Journal-Ledger-Trial balance

Unit-II

Financial Statements- Capital and Revenue Items- Construction of Trading and Profit & Loss Account and Balance- Sheet- Accounting for Intangible Assets

Unit-III

Elements of Cost- Classification of Costs- Marginal Costing- Activity Based Costing

Unit-IV

Functional and Activity Based Budgeting- Standard Costing and Variance Analysis

Unit-V

Computerisation of Accounts- Advantages- Disadvantages- Accounting Information System – Use pf Tally Packages.

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OBJECT ORIENTED PROGRAMMING THROUGH JAVA

As per Choice Based Credit System (CBCS)

II- BCA / III - Semester

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JAVA PROGRAMMING

Unit-1

Introduction to OOP, Procedural Programming Language and Object Oriented Language, principles of OOP, Applications of OOP, History of JAVA, JAVA features, JVM, program Structure. Variables, Primitive Data Types, Identifiers, Literals, Operators, Expressions, Precedence Rules and Associativity, Primitive Type Conversion and Casting, Flow of Control. Classes and Objects, Class declaration, Creating Objects, Methods, Method Overloading.

Unit-II

Constructor, Overloading, Garbage Collector, Importance of Static Keyword and this keywords, Examples, Arrays, Command Line Arguments, Nested Classes.

Inheritance & Polymorphism: Basic concepts of Inheritance, Member access, forms of inheritance- specialization, specification, construction, extenssion, limitation, combination, benefits of inheritance, Relationship, Creating Multilevel Hierarchy, super uses, using final with Inheritance, Polymorphism, Runtime polymorphism, pure polymorphism, method overriding, abstract classes & Methods, Object class

Packages: Defining a Package, PATH, CLASSPATH, Difference between PATH and CLASS PATH, Access protection, importing packages.

Unit-III

Interfaces: Defining an interface, implementing interfaces, Nested interfaces, variables in interfaces and extending interfaces, Multiple inheritances of interfaces, Difference between Abstract class & Interfaces.

Exception handling: Fundamentals of exception handing, Exception types, Termination or resumptive models, Uncaught exceptions, using try and catch, multiple catch clauses, nested try statements, throw, throws and finally, built-in exceptions, creating own exception sub classes.

Multithreading: Thread Introduction, Differences between thread-based multitasking and process-based multitasking, Thread life cycle, creating threads using Thread class and Runnable Interface, Thread Priorities, synchronizing threads, inter thread communication.

Unit-IV

Files: Reading data from files and writing data to files, Random Access File

Applet: Applet class, Applet structure, Applet life cycle, Sample Applet programs. Event handling: Event delegation model, Sources of event, Event Listeners, Adapter classes, Inner classes.

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Operating Systems

As per Choice Based Credit System (CBCS)

II- BCA / III - Semester

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Operating Systems

COURSE OUTCOMES

Upon successful completion of the course, the student is able to

1. Apply optimization techniques for the improvement of system performance.
2. Ability to design and solve synchronization problems.
3. Learn about minimization of turnaround time, waiting time and response time and also maximization of throughput by keeping CPU as busy as possible.
4. Ability to change access controls to protect files.
5. Ability to compare the different operating systems

Unit-I: Introduction to Operating System

Operating System - Introduction, Structures - Simple Batch, Multiprogrammed, Time-shared, Personal Computer, Parallel, Distributed Systems, Real-Time Systems, System components, Operating System services, System Calls

Unit-II: Process and CPU Scheduling

Process and CPU Scheduling - Process concepts and scheduling, Operations on processes, Cooperating Processes, Threads, and Interposes Communication, Scheduling Criteria, Scheduling Algorithms, Multiple -Processor Scheduling.

System call interface for process management-fork, exit, wait, waitpid, exec.

Unit-III: Deadlocks

Deadlocks - System Model, Deadlocks Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, and Recovery from Deadlock

Process Management and Synchronization - The Critical Section Problem, Synchronization Hardware, Semaphores, and Classical Problems of Synchronization, Critical Regions, Monitors

Interprocess Communication Mechanisms: IPC between processes on a single computer system, IPC between processes on different systems, using pipes, FIFOs, message queues, shared memory.

Unit-IV: Memory Management and Virtual Memory

Memory Management and Virtual Memory - Logical versus Physical Address Space, Swapping, Contiguous Allocation, Paging, Segmentation, Segmentation with Paging, Demand Paging, Page Replacement, Page Replacement Algorithms.

Unit-V: File System Interface and Operations

File System Interface and Operations -Access methods, Directory Structure, Protection, File System Structure, Allocation methods, Free-space Management. Usage of open, create, read, write, close, lseek, stat, ioctl system calls. Case Study-Linux: Linux History, Design Principles, Kernel Modules, Process Management, Scheduling, Memory Management, File Systems, Input and Output, Inter-process Communication.

Cyber Laws

As per Choice Based Credit System (CBCS)
II- BCA / IV - Semester

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Cyber Laws

COURSE OBJECTIVES

1. To make the students understand the types of roles they are expected to play in the society as practitioners of the civil engineering profession
2. To develop some ideas of the legal and practical aspects of their profession.

COURSE OUTCOMES

1. The students will understand the importance of professional practice, Law and Ethics in their personal lives and professional careers.
2. The students will learn the rights and responsibilities as an employee, team member and a global citizen.

Unit-I: Introduction to Computer Security

Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity.

Unit-II: Secure System Planning and Administration

Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

Unit-III: Information Security Policies and Procedures

Corporate policies- Tier 1, Tier 2 and Tier3 policies - process management-planning and preparation-developing policies-asset classification policy developing standards.

Unit-IV: Information Security

Fundamentals-Employee responsibilities- information classification- Information handling- Tools of information security- Information processing-secure program administration.

Unit-V: Organizational and Human Security

Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals.

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Data Warehousing and Data Mining

As per Choice Based Credit System (CBCS)

II- BCA / IV - Semester

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COURSE OUTCOMES

Upon successful completion of the course, the student is able to

1. Demonstrate the functionalities of data mining and the need of data warehouse.
2. Extract interesting patterns from large amounts of data.
3. Explain various classification algorithms
4. Apply clustering algorithm for mining applications.
5. Describe complex types of data and applications of data mining.

Unit-I: Data Mining and Data Warehouse

Data–Types of Data–, Data Mining Functionalities–Interestingness Patterns–Classification of Data Mining systems–Data mining Task primitives–Integration of Data mining system with a Data ware house–Major issues in Data Mining–Data Pre-processing. Introduction to Data warehousing, Difference between operational Database Systems and Data Warehouses, A Multidimensional Data Model, Data warehouse Architecture.

Unit-II: Association Rule Mining

Mining Frequent Patterns–Associations and correlations–Mining Methods– Mining Various kinds of Association Rules – Correlation Analysis–Constraint based Association mining. Graph Pattern Mining, SPM.

Unit-III: Classification

Classification and Prediction– Basic concepts– Decision tree induction–Bayesian classification, Rule–based classification, Lazy learner, Support vector Machines.

Unit-IV: Clustering and Applications

Cluster analysis–Types of Data in Cluster Analysis–Categorization of Major Clustering Methods–Partitioning Methods, Hierarchical Methods– Density–Based Methods, Outlier Analysis.

Unit-V: Mining Complex types of Data

Mining Time-Series and Sequence Data, Mining Spatial Data mining, Mining Multimedia, Mining Text Databases, Mining the world wide web, Data Mining Applications, Trends in Data Mining.

Unit-I: Data Mining and Data Warehouse

1.0 Objectives **2**

1.1 Introduction to Data Mining **2**

1.2 Data and types of Data **2**

1.2.1 What is Data? **2**

1.2.2 Attribute **2**

1.2.3 Types of Data Repositories **3**

1.3 Data Mining **5**

1.3.1 Data Mining - a Multidisciplinary Area **5**

1.4 Architecture of Data Mining **6**

1.5 Data Mining Functionalities **7**

1.6 Interestingness Patterns **9**

1.7 Classification of Data Mining Systems **10**

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1.9 Integration of Data Mining System with Data Warehouse **12**

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Web Programming

As per Choice Based Credit System (CBCS)

II- BCA / IV - Semester

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Web Programming

COURSE OUTCOMES

Upon successful completion of the course, the student is able to

1. Gain knowledge of client side scripting, validation of forms and AJAX programming
2. Have understanding of server side scripting with PHP language
3. Have understanding of what is XML and how to parse and use XML Data with Java
4. To introduce Server side programming with Java Servlets and JSP

Unit-I: Scripting

Web page Designing using HTML, Scripting basics- Client side and server side scripting. Java Script- Object, names, literals, operators and expressions- statements and features- events - windows - documents - frames - data types - built-in functions- Browser object model - Verifying forms.-HTML5- CSS3- HTML 5 canvas - Web site creation using tools. Introduction to PHP Declaring variables, Data types, arrays, string operations, control structures, functions, Connecting to database(MySQL), executing simplequeries, handling results.

Unit-II: Java

Introduction to object-oriented programming-Features of Java – Data types, variables andarrays – Operators – Control statements – Classes and Methods – Inheritance. Packages andInterfaces – Exception Handling – Multithreaded Programming –Input/Output– Files– UtilityClasses– StringHandling.

Unit-III: JDBC

JDBC Overview – JDBC implementation – Connection class – Statements - Catching Database Results, handling database Queries. Networking– InetAddress class – URL class- TCP sockets – UDP sockets, Java Beans –RMI.

Unit-IV: Applet

Java applets- Life cycle of an applet – Adding images to an applet – Adding sound to an applet. Passing parameters to an applet. Event Handling. Introducing AWT: Working with Windows Graphics and Text. Using AWT Controls, Layout Managers and Menus. Servlet – Interface(Common Gate Way CGI) ,life cycle of a servlet. The Servlet API, Handling HTTP Request and Response, using Cookies, Session Tracking. Introduction to JSP.

Unit-V: XML and Webservices

Xml – Introduction-Form Navigation-XML Documents- XSL – XSLT- Web services- UDDI-WSDL-Java web services – Web resources. Parsing XMLData: DOM and SAX in Java.

Data Communication and Networks

As per Choice Based Credit System (CBCS)

II- BCA / IV - Semester

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COURSE OUTCOMES

Upon successful completion of the course, the student is able to

1. Students should be understand and explore the basics of Computer Networks and various protocols. She/he will be in a position to understand the World Wide Webconcepts.
2. Students will be in a position to administrate a network and flow of informationfurther he/she can understand easily the concepts of network security, Mobile and adhoc networks.

Unit-I: Data Communications

Data Communications: Internet history and administration, Protocols and Standards Components – Direction of Data flow – Networks – Components and Categories – Types of Connections – Topologies –Protocols and Standards – ISO / OSImodel, Example Networks such as ATM, Frame Relay, ISDN Physical layer: Transmission modes, Multiplexing, Transmission Media, Switching, Circuit Switched Networks, Datagram Networks, Virtual Circuit Networks.

Unit-II: Data Link Layer

Data link layer: Bridges, repeaters, hubs, bridges routers and gateways, Framing, and Error – Detection and Correction – Parity – LRC– CRC Hamming code, Flow and Error Control, Noiseless Channels, Noisy Channels, HDLC, Point to Point Protocols. 111 Medium Access sub layer: ALOHA, CSMA/CD, LAN– Ethernet IEEE 802.3, IEEE 802.5 – IEEE 802.11, Random access, Controlled access, Channelization.

Unit-III: Network Layer

Network layer: Logical Addressing, Internetworking, Tunnelling, Address mapping, ICMP,IGMP, ARP, RARP, DHCP, Forwarding, Uni-Cast Routing Protocols, Multicast Routing Protocols.

Unit-IV: Transport Layer

Transport Layer: Process to Process Delivery, UDP and TCP protocols, Data Traffic,Congestion, Congestion Control, QoS, Integrated Services, Differentiated Services, QoS inSwitched Networks.

Unit-V: Application Layer

Application Layer: Introduction ,providing services, Domain name space, DNS in internet, electronic mail, SMTP, FTP,WWW, HTTP, SNMP,SSH.

Data Analytics using R

As per Choice Based Credit System (CBCS)
II- BCA / IV - Semester

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Data Analytics using R

COURSE OUTCOMES

Upon successful completion of the course, the student is able to

1. Understand the impact of data analytics for business decisions and strategy
2. Carry out data analysis/statistical analysis
3. To carry out standard data visualization and formal inference procedures
4. Design Data Architecture; Understand various Data Sources

Unit-I: Data Management

Data Management: Design Data Architecture and manage the data for analysis, understand various sources of Data like Sensors/Signals/GPS etc. Data Management, Data Quality (noise, outliers, missing values, duplicate data) and Data Processing & Processing.

Unit-II: Data Analytics

Data Analytics: Introduction to Analytics, Introduction to Tools and Environment, Application of Modeling in Business, Databases & Types of Data and Variables, Data Modeling Techniques, Missing Imputations etc. Need for Business Modeling.

Unit-III: Regression

Regression – Concepts, Blue property assumptions, Least Square Estimation, Variable Rationalization, and Model Building etc. Logistic Regression: Model Theory, Model fit Statistics, Model Construction, Analytics applications to various Business Domains etc.

Unit-IV: Object Segmentation

Object Segmentation: Regression Vs Segmentation – Supervised and Unsupervised Learning, Tree Building – Regression, Classification, Overfitting, Pruning and Complexity, Multiple Decision Trees etc. Time Series Methods: Arima, Measures of Forecast Accuracy, STL approach, Extract features from generated model as Height, Average Energy etc and Analyze for prediction

Unit-V: Data Visualization

Data Visualization: Pixel-Oriented Visualization Techniques, Geometric Projection Visualization Techniques, Icon-Based Visualization Techniques, Hierarchical Visualization Techniques, Visualizing Complex Data and Relations.

Unit-I: Data Management

1.0 Objectives **2**
1.1 Introduction to Data Management **2**
1.1.1 Importance of Data Management **2**
1.1.2 Data Management Tools and Techniques **2**
1.1.3 Advantages of Good Data Management **5**
1.1.4 Data Management Risks and Challenges **5**
1.2 Design Data Architecture and Manage the Data for analysis **6**
1.3 Understand Various Sources of the Data **8**
1.3.1 Sensor's Data **12**
1.3.2 GPS **18**
1.3.3 Metadata **20**
1.4 Data Management **21**
1.4.1 Cloud Computing **22**
1.5 Data Quality **26**
1.5.1 Why is Data Quality Important? **26**
1.5.2 Dimensions of Data Quality **27**
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2.3.3 Role of Data Analytics **46**
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2.3.8 How Does Data Analytics Work? **49**
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2.4 Tools used in Data Analytics **51**
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2.5.1 Components of a Business Model **54**
2.6 Databases & Types of Data and variables **54**

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3.7 Confusion Matrix (or) Error Matrix (or) Contingency Table 95
3.7.1 Understanding True Positive, True Negative, False Positive and False Negative in a Confusion Matrix 95
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3.9 Analytics applications to various Business Domains 101
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Object Oriented Software Engineering

As per Choice Based Credit System (CBCS)
II- BCA / IV - Semester

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Object Oriented Software Engineering

COURSE OUTCOMES

1. To understand software process models such as waterfall and evolutionary models.
2. To understand software requirements and SRS document.
3. Ability to translate end-user requirements into system and software requirements, using e.g.UML, and structure the requirements in a Software Requirements Document (SRD).
4. To understand software testing approaches such as unit testing and integration testing.
5. To understand quality control and how to ensure good quality software through quality assurance.

Unit-I: Introduction to Software Engineering

Introduction to Software Engineering: The evolving role of software, Changing Nature of Software, Software myths.

A Generic view of process: Software engineering- A layered technology, a process framework, The Capability Maturity Model Integration (CMMI).

Process models: The waterfall model, Incremental process models, Evolutionary process models, The Unified process.

Unit-II: Software Requirements

Software Requirements: Functional and non-functional requirements, user requirements, system requirements, interface specification, the software requirements document.

Requirements engineering process: Feasibility studies, requirements elicitation and analysis,requirements validation, requirements management.

System models: Context models, behavioral models

Unit-III: Design Engineering

Design Engineering: Design process and design quality, design concepts, the design model. **Creating an architectural design:** software architecture, data design, architectural styles and patterns, architectural design, conceptual model of UML, basic structural modelling, class diagrams, sequence diagrams, collaboration diagrams, use case diagrams, component diagrams.

Unit-IV: Testing Strategies

Testing Strategies: A strategic approach to software testing, test strategies for conventional software, black-box and white-box testing, Unit Testing, Integration Testing, validation testing, system testing, the art of debugging.

Product metrics: Software quality, metrics for analysis model, metrics for design model, metrics for source code, metrics for testing, metrics for maintenance.

Metrics for Process and Products: Software measurement, metrics for software quality

Unit-V: Risk Management

Risk management: Reactive Vs proactive risk strategies, software risks, risk identification, risk projection, risk refinement, RMMM, RMMM plan. **Quality Management:** Quality concepts, software quality assurance, software reviews, formal technical reviews, statistical software quality assurance, software reliability, the ISO 9000 quality standards.

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