# Course Structure of Bachelor of Computer Applications

## Semester – I

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits (L T P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>LNG 301</td>
<td>Structured and Spoken English</td>
<td>3(2+1+0)</td>
</tr>
<tr>
<td>2.</td>
<td>GPT 301</td>
<td>Moral &amp; Value Education</td>
<td>2(2+0+0)</td>
</tr>
<tr>
<td>3.</td>
<td>MAS- 341</td>
<td>Foundation Course in Mathematics</td>
<td>4(4+0+0)</td>
</tr>
<tr>
<td>4.</td>
<td>BAM 327</td>
<td>Business Communication</td>
<td>3(2+1+0)</td>
</tr>
<tr>
<td>5.</td>
<td>ECE 310</td>
<td>Basic Electronics</td>
<td>4(2+1+2)</td>
</tr>
<tr>
<td>6.</td>
<td>CSIT 404</td>
<td>Problem Solving &amp; Programming in C</td>
<td>5(2+1+4)</td>
</tr>
<tr>
<td>7.</td>
<td>CSIT 405</td>
<td>Fundamentals of Computer Science</td>
<td>4(2+1+2)</td>
</tr>
<tr>
<td>8.</td>
<td>CSIT 409</td>
<td>Principles of Programming Languages</td>
<td>4(3-1-0)</td>
</tr>
</tbody>
</table>

## Semester – II

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits (L T P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MAS 461</td>
<td>Numerical &amp; Statistical Computing</td>
<td>4(3+0+2)</td>
</tr>
<tr>
<td>2.</td>
<td>ENV 415</td>
<td>Environmental Studies-I</td>
<td>2(2+0+0)</td>
</tr>
<tr>
<td>3.</td>
<td>BAM 213</td>
<td>Principles of Management</td>
<td>3(2+1+0)</td>
</tr>
<tr>
<td>4.</td>
<td>CSIT 406</td>
<td>Fundamentals of Computer Organization</td>
<td>4(3+1+0)</td>
</tr>
<tr>
<td>5.</td>
<td>CSIT 407</td>
<td>Algorithms &amp; Data Structures through C</td>
<td>5(3+1+2)</td>
</tr>
<tr>
<td>6.</td>
<td>CSIT 417</td>
<td>Fundamentals of Operating System</td>
<td>5(3+1+2)</td>
</tr>
<tr>
<td>7.</td>
<td>CSIT 426</td>
<td>Data Communication</td>
<td>4(3+1+0)</td>
</tr>
</tbody>
</table>

## Semester – III

<table>
<thead>
<tr>
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<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>BAM 302</td>
<td>Principles of Accounting</td>
<td>3(2+1+0)</td>
</tr>
<tr>
<td>2.</td>
<td>BAM 317</td>
<td>Organization Behaviour</td>
<td>3(3+0+0)</td>
</tr>
<tr>
<td>3.</td>
<td>MAS 621</td>
<td>Discrete Mathematics</td>
<td>3(3-0-0)</td>
</tr>
<tr>
<td>4.</td>
<td>ENV 416</td>
<td>Environmental Studies-II</td>
<td>2(2+0+0)</td>
</tr>
<tr>
<td>5.</td>
<td>CSIT 408</td>
<td>Fundamentals of Database Management System</td>
<td>4(3-1-0)</td>
</tr>
<tr>
<td>6.</td>
<td>CSIT 416</td>
<td>System Analysis and Design</td>
<td>3(2+1+0)</td>
</tr>
<tr>
<td>7.</td>
<td>CSIT 418</td>
<td>Information Security</td>
<td>2(2-0-0)</td>
</tr>
<tr>
<td>8.</td>
<td>CSIT 503</td>
<td>Object Oriented Systems</td>
<td>5(3+1+2)</td>
</tr>
</tbody>
</table>

## Semester – IV

<table>
<thead>
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<th>S.No.</th>
<th>Course Code</th>
<th>Course Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>BAM 431</td>
<td>Financial Management</td>
<td>4(3+1+0)</td>
</tr>
<tr>
<td>2.</td>
<td>CSIT 423</td>
<td>Programming with Java</td>
<td>5(3-0-4)</td>
</tr>
<tr>
<td>3.</td>
<td>CSIT 504</td>
<td>Internet and Web Technologies</td>
<td>5(3+0+4)</td>
</tr>
<tr>
<td>4.</td>
<td>CSIT 505</td>
<td>Relational Database Management System</td>
<td>4(2+1+2)</td>
</tr>
<tr>
<td>5.</td>
<td>CSIT 511</td>
<td>Principles of Computer Network</td>
<td>5(3-1-2)</td>
</tr>
<tr>
<td>6.</td>
<td>CSIT 515</td>
<td>Principles of Software Engineering</td>
<td>4(3-1-0)</td>
</tr>
</tbody>
</table>

## Semester – V

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<tr>
<th>S.No.</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits (L T P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>BAM 544</td>
<td>Management Information System</td>
<td>3(2-1-0)</td>
</tr>
<tr>
<td>2.</td>
<td>CSIT 506</td>
<td>Principles of Artificial Intelligence</td>
<td>4(3-1-0)</td>
</tr>
<tr>
<td>3.</td>
<td>CSIT 507</td>
<td>Computer Graphics and Multimedia</td>
<td>5(3+1+2)</td>
</tr>
<tr>
<td>4.</td>
<td>CSIT 510</td>
<td>.NET Framework and C#</td>
<td>5(3+1+2)</td>
</tr>
<tr>
<td>5.</td>
<td>CSIT 517</td>
<td>Computer Architecture</td>
<td>4(3+1+0)</td>
</tr>
<tr>
<td>6.</td>
<td>CSIT 641</td>
<td>XML Applications</td>
<td>4(3+1+0)</td>
</tr>
<tr>
<td>7.</td>
<td>CSIT 699a</td>
<td>Project (Project Formulation)</td>
<td>2(0+0+4)</td>
</tr>
</tbody>
</table>
### Semester – VI

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<thead>
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<th>Course Name</th>
<th>Credits (L T P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>CSIT 522</td>
<td>Data Warehousing</td>
<td>4(3-1-0)</td>
</tr>
<tr>
<td>2.</td>
<td>CSIT 601</td>
<td>Linux and Shell Programming</td>
<td>5(3+1+2)</td>
</tr>
<tr>
<td>3.</td>
<td>CSIT 602</td>
<td>Latest Trends in IT</td>
<td>4(3+1+0)</td>
</tr>
<tr>
<td>4.</td>
<td>CSIT 609</td>
<td>Enterprise Resource Planning</td>
<td>4(3-1-0)</td>
</tr>
<tr>
<td>5.</td>
<td>CSIT 699b</td>
<td>Project (Project Execution and Report)</td>
<td>6(0+0+12)</td>
</tr>
</tbody>
</table>
Structured and Spoken English

Code: LNG 301
Credit: 3(2+1+0)

Grammar:

- Use of Articles and Prepositions
- Figures of Speech
- Idioms and Phrases
- Vocabulary
  - Synonyms
  - Antonyms
  - One word Substitution
  - Homophones and Homonyms
- Punctuations

Composition:

- Letter Writing
- Application Writing
- Précis
- Essay Writing
- Report Writing (With special stress on Scientific / Technical Reports)

References:

Wren and Martin, “High School English Grammar and Compositions”

T.P Mishra and M.C Gupta, “A new style to General English”

Dr. Raghunath Thilak, “Letter Writing and Secretarial Practice”
Moral & Value Education

Code: GPT 301 Credits: 2(2+0+0)

My country and my people, the many Indians, being and becoming an Indian, Nationalism and Internationalism.

Some life issues – Love, Sex, and Marriage: Men and money-value of time, Meaning of work, human communication, Human suffering, Addiction, Ecology, Women’s Issues

Understanding one’s neighbour, neighbourhood groups: their structure and functions, patterns of social interaction of group dynamics

Preparation of career, choice of vocation, motivation for study and research, the present education system, curriculum and syllabus, teaching methods, examination and work experience

Definition of value education, moral and ethics, laws and morale based on Ten Commandments and two grate commandments

Discovery of self, self awareness, growth of intellect-man’s spiritual nature emotions, will, respect the rights of life, Liberty, Property, Truth reputation

Sin, Origin of Sin, Manifestation of Sin, Results of Sin, The remedy of sin, Sin as an act, Sin as a state, Sin as a nature

Conscience-as defined in Oxford dictionary and Winston dictionary, types of consciousness (Such as evil, Convicted, Purged, Pure, Weak, Good, Void of offence)
Foundation Course in Mathematics

Code: MAS 341
Credits 4(4+0+0)

ALGEBRA
Elementary concepts of set – Theory: Types of sets, their representation by Venn – Diagrams.


TRIGONOMETRY
Trigonometrical-ratios, Sum & difference relations of two angles, expression of product of ratios as their sum and difference of angles, Relation of multiple and sub-multiple angles, Complex numbers, De-Movires Theorem and elementary problems based on it.

DIFFERENTIAL CALCULUS
Functions, Limit, Continuity and Differentiability, Differential-Co-efficient of standard functions (algebraic, trigonometrical, Exponential, logarithmic etc), rules for differentiation, Differentiation of composite, inverse, implicit and parametric functions, Higher order derivatives

INTEGRAL CALCULUS
Indefinite integration, Integration by substitution, parts and partial-fraction, Integration of rational, irrational and Trigonometric functions, Definite-Integration and its properties.

VECTOR ALGEBRA
Vectors and Scalar quantities, identification, Linear-operations in vectors, Dot & Cross Products

COORDINATE GEOMETRY (2 DIM)
Standard equations of curves and their identifications.

References:
Hall and Night, “Algebra”
S.L Loney, “Trigonometry”
S.L Loney, “Co-ordinate Geometry”
Gorakh Prasad, “Differential Calculus and Integral Calculus”
Matambar&Sengar, “Vectors”
Business Communication

Code: BAM -327
Credit: 3(2+1+0)

- Concept of Communication
- Communication Process
- Barriers to Communication
- Written Communication-formal Reports, Technical report, Business Correspondence, Notices, research Papers.
- Non-Verbal Communication-Personal Appearance, Postures, Gestures, Facial Expressions, Eye Contact.

References:

Lesikar& Pettit, “Business Communication+
1. **Energy Bands in Solids:**
   - Energy band theory of solids, Concept of forbidden gap, Insulators, Metals and Semiconductors.

2. **Transport Phenomenon in Semiconductors:**
   - Mobility and conductivity, electrons and holes in an intrinsic semiconductor, Donor and acceptor impurities, Fermi level, carrier densities in semiconductor, electrical properties of semiconductor, Hall effect, Diffusion.

3. **Junction Diode:**
   - P-N junction, depletion layer, V-I characteristics, diode resistance, capacitance, switching time, diode application as a rectifier (half wave and full wave), diode circuits (clipper, clamper, voltage multipliers)
   - Breakdown mechanism, Zener & Avalanche, breakdown characteristics, Zener diode and its applications.

4. **Bi-junction Transistor:**
   - Bipolar junction Transistor, CE, CB and CC configuration, characteristic curves (cut off, active and saturation region), Requirement of biasing, biasing types and biasing analysis, stability.

5. **Transistor as an Amplifier:**
   - Graphical analysis of CE amplifier, concept of voltage gain, current gain and power gain, h-parameter (low frequency), computation of Av, Rf, Ro and approximate formulae.

6. **Operational Amplifiers:**
   - Concepts of ideal op-amp, inverting, non-inverting and unity gain amplifiers, adders, difference amplifiers.

7. **Switching Theory & Logic Gates:**
   - Number systems, conversion of bases, Boolean algebra, Logic Gates, concept of universal gate, canonical forms, and minimization using K-map.

8. **Electronic Instruments:**
   - Multimeter, CRO and its Applications.

**References:**

1. Boylestad & Nashelsky/Electronic Devices & Circuits/ PHI.
3. Milliman, J. Halkias/Integrated Electronics/TMH.

**List of Experiments:**

1. Study of Diode characteristics.
2. Study of Common Base Transistor characteristics.
3. Study of Common Emitter Transistor characteristics.
4. Study of Half Wave Rectifier with effect of Capacitor and also calculate the ripple factor.
5. Study of Full- Wave Rectifier with effect of Capacitor and also calculate the ripple factor.
7. Study of Clipping and clamping Circuits.
PROBLEM SOLVING & PROGRAMMING IN C

Code: CSIT 404
Credits: 5(2+1+4)

Unit – I


Unit – II
‘C’ constructs: if statements & its forms, goto statement, while statement, for statement, do…while statement, break and continue statement, nesting concepts, switch statement.

Unit – III
Arrays: definition, types of Arrays, declaring Arrays, i/o operations on Arrays.

Functions: basics of functions, applications, function declaration, definition, scope, parameter passing and recursion.

Unit – IV
Pointers: definition, applications of pointers: pointer to Arrays, call by reference in functions.

Character Handling: Strings, standard library string functions, and two-dimensional array of characters, array of pointers to strings.

Unit – V
Structures: basics of Structures, Structure and Functions, pointers to structures, union.

File handling: file concepts, file creation, I/O operations on files, file functions, working with text files.

TEXT:


REFERENCES:

1. E. Balaguruswamy, “Programming in ANSI C”, TMH, 1999
3. R.G. Dromey, “How to solve it by computer”, PHI, 1992
UNIT-1
**Introduction to Computers**: Need and Role of computers, Definition, Characteristics and Applications, Generations of Computer, Hardware: Basic block diagram, CPU, Primary and Secondary storage devices and I/O Devices.

UNIT-2
**Information Concepts**: Data and its representation, Information and its characteristics, Categories of information, Levels of information. Data storage and retrieval. Concept of file, record and field.

**Number System**: Basic concepts, Binary, Octal, Decimal, and Hexadecimal numbering system, conversion from one system to another.

UNIT-3
**Introduction to Software**: Definition, Types of Software, System software: Operating System, Functions of OS, Overview of DOS, Windows and Linux.

Application software: Word Processor, MS-Excel. Database concepts, Flat file versus Database.

UNIT-4
**Computer Languages**: Definition, Generations of computer languages, Types of Languages, Language Translators: Assembler, Interpreter, Compiler, Linker and Loader. Programming constructs, Algorithm & flowchart.

UNIT-5
**Computer Network Concepts**: Introduction to Computer Networks, History and usage of Internet, Browser and its types, Domain Name System (DNS), WWW, Electronic Mail (e-mail), Search Engines and Intranets.

**Text Book**:
- Chanchal Mittal, “Computer and Languages with C”, PragatiPrakashan

**References**:
- Yashavant P. Kanetkar “Unix Shell Programming”, BPB
Practical List: CODE: CSIT 405

1. **DOS commands:**
   
   **Internal DOS Commands:** MD, CD, DIR, TIME, DATE, DEL, TYPE, EDIT, COPY, EXIT, PATH, PROMPT, REM, REN, VER.

   **External Dos Commands:** ATTRIB, BACKUP, CHKDSK, COMP, DEBUG, DISKCOPY, DOSKEY, HELP, XCOPY, SHUTDOWN, SYSTEMINFO, UNDELETE.

2. Working with Windows Operating System.

3. Working with **MS-Word**:
   - Getting familiar with various tool bars.
   - Tables and Columns
   - Mail merge

**MS-Excel:**

   - Working with Spreadsheets
   - Generating Charts
   - Creating Macros

**MS-PowerPoint:**

   - Preparation/Presentation of Slides

4. **Exploring Internet:** WebPages, Website, Browser, URL, Surfing, Searching, creating mail accounts.

5. **Basic Linux Commands:** LS, DF, RM, PASSWD, CAL, DATE, TOUCH, FILE, CUT, CAT, WHO, VI, MORE, CLEAR, CP, MV, MKDIR, CD, RMDIR, EXIT, ED.
PRINCIPLES OF PROGRAMMING LANGUAGES

Code: CSIT 409
Credits: 4 (3–1-0)

Unit -I
Introduction: Characteristics of Programming Languages, Factors influencing the evolution of programming language, developments in programming methodologies, desirable features and design issues. Programming Language Processors: Structure and operations of translators, software simulated computer, syntax, semantics, structure, virtual computers, binding and binding time.

Unit -II
Elementary and Structured Data Types: Data object variables, constants, data types, elementary data types, declaration, assignment and initialization, enumeration, characters, strings. Structured data type and objects: Specification of data structured types, vectors and arrays, records, variable size data structure, pointers and programmer constructed data structure, Sets, files. Sub Program and programmer defined data types: Evolution of data types, abstractions, encapsulations, information hiding, sub programs, abstract data types.

Unit -III
Sequence Control: Implicit and Explicit sequence control, sequence control with and within expression and statements, recursive sub programs, exception handling, co routines, Scheduled sub programs, concurrent execution.

Unit -IV
Storage Management: Major run time requirements, storage management phases, static storage management - stack based, heap based.

Syntax and translation: General syntactic criteria, syntactic elements of a language, stages in translation, formal syntax and semantics.

Unit -V
Programming Environment: Embedded system requirements, Theoretical models, Introduction to Functional Programming, Lambda calculus, Data flow language and Object Oriented language.

Text Book(s):

    Terrance W Pratt, "Programming Languages: Design and Implementation" PHI

Reference Books :

1. Sebesta, "Concept of Programming Language", Addison Wesley
3. Dr. Sachin Kumar, “ Paradigms of Programming”, Katson Books


Statistical Computation: Frequency Chart, Correlation, Regression Analysis, Least Square Fit, Polynomial Fit, Linear & Non Linear Regression, Multiple Regressions, And Statistical Quality Control Methods.

References:


2. Balaguruswamy, “Numerical Methods”, TMH.


Practical List:

1. To deduce error involved in polynomial equation.
2. To Find out the root of the Algebraic and Transcendental equations using Bisection, Regula-falsi, Newton Raphson and Iterative Methods. Also give the rate of convergence of roots in tabular form for each of these methods.
3. To implement Newton’s Forward and Backward Interpolation formula.
4. To implement Gauss Forward and Backward, Bessel’s, Sterling’s and Everett’s Interpolation formula.
5. To implement Newton’s Divided Difference and Lang ranges Interpolation formula.
6. To implement Nuumerical Differentiations.
7. To implement Numerical Integration using Trapezoidal, Simpson 1/3 and Simpson 3/8 rule.
8. To implement Least Square Method for curve fitting.
i. The Multidisciplinary Nature of Environmental Studies

Definition, Scope and Importance

ii. Ecosystem

- Concept of an Ecosystem
- Structure and function of an Ecosystem
- Producers, consumers and decomposes
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, Characteristics features, structures and function of the following ecosystems:
  (a) Forest Ecosystem
  (b) Grassland Ecosystem
  (c) Desert Ecosystem
  (d) Aquatic Ecosystem (Ponds, streams, lakes, rivers, oceans, estuaries)

(ii) Social Issues and the Environment

- From Unsustainable of sustainable development
- Urban problems related to energy
- Water conservation, rain water harvesting, Water shed Management
- Resettlement and rehabilitation of people; Its problems and concerns Case studies
- Environmental ethics: Issues and possible solutions
- Climate Change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case studies
- Wasteland reclamation
- Consumerism and waste products
- Environment Protection Act
- Air (Prevention and Control of Pollution) Act
- Visit to local polluted site- Urban/ Rural/ Industrial/ Agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems- ponds, river, Hill slopes etc (Field work equal to 5 lecture hours)
- Issues involved in enforcement of environmental legislation; Public awareness.
Principles of Management

Code: BAM – 213

Credit 3(2+1+0)

- Nature and Functions of Management
- Development of Management Thought
- Co-ordination
- Planning
- Decision Making
- Organizing
- Delegation of Authority
- Staffing, Training & Development
- Direction
- Communication
- Leadership
- Controlling

Text Book Recommended:

- Essentials of Management – Koontz & Weirich
- Principles and Practices of Management – L. M. Prasad
- Management – Stoner, Gilbert & Freeman
Fundamentals of Computer Organization

Code: CSIT 406       Credits: 4(3+1+0)

UNIT-I
**Introduction to Computers:** Analog, Digital, Hybrid and Modern Digital Computers.

**Digital Logic circuits and Components:** Logic gates, Boolean algebra, K-maps, Half Adder, Full Adder, Coder, Decoder, Multiplexer, Demultiplexer, Flip-flop, Counters, Registers, Basic design of ALU.

UNIT-II
**Data Representation:** Data types, Complements, Fixed Point Representation, Floating Point Representation, Error Detection codes.

UNIT III
**Register Transfer and Microoperations:** Register Transfer language, Bus and memory Transfer, Binary Adder, Binary Subtractor, Binary Adder – Subtractor, Binary Increment, Binary Decrement, Arithmetic Circuit, Addition and Subtraction Algorithms.

UNIT IV
**Memory and Processor Organization:** Memory Hierarchy, Main Memory (RAM & ROM) Associative memory, cache memory, Auxiliary memory, General Register Organization, Stack Organization, Addressing modes, Instruction Formats. RISC and CISC.

UNIT V
**Introduction to Classification of Computers and Concepts of Pipeline:** Flynn’s Classification, Parallel Architecture Classification, Pipelining of processes.

**Text Book:**

Computer System Architecture – M. Mano, Pearson Ed.

**Reference Books:**

Digital circuits and Logic Design - M.Man0, Pearson Ed.

Digital Logic – T.C. Bartee ,Mcgraw Hill

Algorithm & Data Structure through ‘C’

Unit –I

Data Structure: Definition and classification of data structures, description of various data structures.

Arrays: Definition, Representation and analysis, Single and Multidimensional Arrays, Application of Arrays.

UNIT-II

Queue: Basic concepts and operations. Implementation: sequential and linked representation. Introduction to double ended Queues and Priority Queues. Applications of Queues.

UNIT-III
Linked List: Basic concepts and operations. Types of linked lists: Singly linked, Circular linked list, Doubly Linked list, and circular doubly linked list. Application of linked lists

UNIT-IV
Binary Trees: Definition, terminology and Applications of Binary Tree. Representation and Basic operations of binary tree. Traversal algorithms. Binary Search Trees: BST

UNIT-V
Sorting: Notation, concepts and algorithms: Selection, Bubble, Merge and Quick Sort.

Searching: Basic search techniques: Sequential and Binary searching


Text Books :

References:
Jean – Paul Trembley G. Sorenson, “Introduction of Data Structure with Applications”, TMT


Practical List:

Write Program in C for following:

- Sorting programs: Bubble sort, Merge sort, Insertion sort, Selection sort, and Quick sort.
- Searching programs: Linear Search, Binary Search.
- Array implementation of Stack, Queue, Circular Queue, Linked List.
- Implementation of Stack, Queue, Circular Queue, Linked List using dynamic memory allocation.
- Implement infix to postfix conversion and evaluation of postfix expression
- Implementation of Binary Search Tree and traversal algorithms (inorder, preorder, postorder)
- Implementation of Graph and traversal algorithms (BFS, DFS).
UNIT -I


Linux OS: Introduction, Vi editor, commands, shell programming.

UNIT- II


UNIT- III

CPU Scheduling: Scheduling concepts and criteria, Scheduling algorithms, Algorithm evaluations, Multiple processor scheduling.


UNIT -IV


File System: File Concept, File-system structure, Access methods, Directory structure, File sharing and protection,

UNIT- V

Unix / Linux: History, shell programming, system administration, Vi Editor and other command level details of UNIX, Design principles: File system, I/O System, Inter process communication.

UNIT- V

Case study of Linux Operating System: History, Design principles, process management, Scheduling, Memory management, File System, System calls.

Text Book :


References:


2. A.S. Tanenbaum, ” Operating System”, Pearson
Note: You are requested to moderate the following practical list and submit the amended list to the office of HoD, DCS&IT, on or before 30 July 2009.

Practical List:

1. Simulation of the CPU scheduling algorithms a) Round Robin b) SJF c) FCFS d) Priority
2. Simulation of MUTEX and SEMAPHORES.
4. Implementation of Process Synchronization (Reader-Writer, Sleeping Barber and Dining Philosopher’s Problem)
5. Simulation of page Replacement Algorithms a) FIFO b) LRU c) LFU
6. Simulation of paging techniques of memory management.
7. Simulation of file allocation Strategies a) Sequential b) Indexed c) Linked
8. Simulation of file organization techniques a) Single Level Directory b) Two Level c) Hierarchical d) DAG
UNIT I: INTRODUCTION


UNIT II: DATA TRANSMISSION AND DATA ENCODING

Analog and Digital signals, Transmission impairments, Data rate, Noiseless channel and nosiy channel, Digital Transmission, Digital-to digital conversion, digital to analog conversion, Analog Transmission, Digital to analog conversion and analog to analog conversion

UNIT III: TRANSMISSION MEDIA


UNIT IV DATA COMMUNICATION INTERFACE AND MULTIPLEXING

Asynchronous and Synchronous Transmission, Frequency Division Multiplexing, Wavelength Division Multiplexing, Synchronous Time Division Multiplexing, Statistical Time Division Multiplexing, Spread Spectrum

UNIT V DATA LINK CONTROL

Flow control (Stop and Wait Flow control and Sliding Window Flow control), Error Detection and correction, Error Control (Stop and Wait, Go back-N, Selective Reject ARQ), High Level data Link Control

Books:

1. Behrouz Forouzan, Introduction to data communication and networking, TMH.
2. William Stallings, Data and computer communication, Pearson
Semester III

Principles of Accounting

Code: BAM – 302          Credit 3(2+1+0)

- Meaning, Scope & Objectives of Accounting
- Principles of Accounting: Concepts & Conventions
- Journalizing Transactions
- Ledger, Subsidiary Books of Accounts Including Cash Book
- Bank Reconciliation Statement™ Rectification of Errors
- Trial Balance
- Preparation of Final Accounts: Trading Account, Profit & Loss Account, balance Sheet, Capital and Revenue Expenditure & Income
- Depreciation

Text Book Recommended:

Modern Accountancy – Mukherjee & Hanif
Advanced Accountacy – Jain & Narang
An Introduction to Accountancy – S. N. Maheshwari & S. K. Maheshwari
ORGANIZATION BEHAVIOR

Code: BAM 317  
Credits : 3(3-0-0)

- Nature of Organizational Behavior
- Theories of Organizational Behavior
- Organizational setting
- Group dynamics & organizational behavior
- Conflict Resolution & Intergroup Behavior
- Communication & Group Decision Making
- Leadership
- Management of Change
- Organizational Development Process
- ReamBuilding
- Organizational Climate & Culture
- Motivation
- Industrial Behavior: Ability, Personality, Attitude, Attitude Learning, Perception.

Text Books:
1. Organization Behavior - S.P. Rabbinbs
2. Organization Behavior - Luthans

References Books:
1. Jit S Chandan "Organizational Behavior", Vikas
1. **Propositions and logical operations**  
   - Notation, Connections, Normal Forms, Truth Tables  
   - Equivalence and Implications  
   - Theory of inference for statement calculus, predicate calculus  
   - Rules of logic  
   - Mathematical Induction and Quantifiers

2. **Sets, Relations and Digraphs**  
   - Review of set concepts  
   - Relations and digraphs  
   - Properties of relations  
   - Equivalence relations  
   - Computer representation of relations and digraphs  
   - Manipulation of relation  
   - Partially Ordered Sets (Posets)

3. **Graph theory**  
   - Definition, paths, circuits, reachability, connectedness  
   - Matrix representation of graphs, trees, spanning trees  
   - List structures and graphs, PERT related techniques  
   - Transitive closure, Warshall’s Algorithms  
   - Eulerian and Hamiltonian graphs

4. **Groups and applications**  
   - Monoids, semigroups  
   - Product and quotients of algebraic structures  
   - Isomorphism, homomorphism, automorphism  
   - Normal subgroups, codes and group codes

**Text Books:**  
2. Discrete Mathematical Structure : Kolman, Busby and Ross, Printice Hall India  
3. Elements of Discrete Structures : C.L. Liu
1) Natural Resources
   a) Forest Resources
   b) Water Resources
   c) Mineral Resources
   d) Food Resources
   e) Energy Resources
   f) Land Resources

Role of an individual in conservation of natural resources, Equitable use of Resources for sustainable life style.

2) Biodiversity and its conservation
   a) Introduction- Definition: genetic, species and ecosystem diversity
   b) Biogeographical classification of India
   c) Value of diversity: consumptive use, productive use, social, ethical aesthetic and optional values.
   d) Biodiversity at global, National and Local levels.
   e) India as Mega-diversity nation
   f) Hot-spots of biodiversity
   g) Threats to Biodiversity: habitat loss, poaching of wild life, man- wild life conflicts
   h) Endangered and endemic species of India
   i) Conservation of biodiversity: In- situ and Ex- situ conservation of biodiversity.

3) ENVIRONMENTAL POLLUTION

Definition of Pollution and Pollutant, Kinds and classification of pollutant and pollution

Causes, effects and control measures of

   a) Air pollution
   b) Water pollution
   c) Soil pollution
   d) Noise pollution
   e) Thermal pollution

Solid Waste management: Causes, effect and control measures of urban and industrial wastes
Fundamentals of Database Management System

Code: CSIT 408  Credit: 4(3+1+0)

UNIT-I

**Introduction**: Database system concepts, Data Abstraction, Data Models, Schema and Instances, Data independence. Data Definition Language, Data Manipulation Language, Overall Database Structure.

**Data Models**: Introduction, Basic concepts and notations for E-R diagram, mapping constraints, keys: super key, candidate key, primary key, Generalization and Specialization, Aggregation, Reduction of an E-R diagram into tables, extended E-R models.

UNIT-II

**Relational Data Model and Languages**: Relational data Model Concepts, Query languages: Relational algebra, Tuple relational calculus, Domain relational calculus and SQL.

UNIT-III

**Database Design**: First Normal Form, Pitfalls in Relational Database Design, Functional dependencies, Decomposition, Desirable properties of Decomposition, Normal Forms: First, Second, Third, BCNF and Fourth Normal form.

UNIT-IV

**Transactions & Concurrency Control**: Transaction concepts, ACID properties, Transaction States, Concurrent execution of transactions, Locking techniques for concurrency control and Protocols.


UNIT-V

**Introduction to Database System Architecture**: Distributed database, object Oriented database management system, Client/server database, and Knowledge Database.

**Text Books**

- Henry F. Korth, “Database system concept”, TMH
- S.B. Navathe, “Database Management System”, Wesley Addition

**References**

- Vipin Desai, “Database Management System”, BPB
- Date C J, “An Introduction To Database System”, Addison Wesley
- Majumdar & Bhattacharya, “Database Management System”, TMH
System Analysis and Design

Code: CSIT 416
Credit: 3 (2+1+0)

UNIT-I


System Development: System Development Life Cycle, Phases of SDLC, Role of System Analyst

UNIT-II

Feasibility Study: Basic concepts, Steps in the feasibility study, Types of feasibility study, Feasibility report, Cost Benefit analysis, Procedure for Cost benefit determination.


UNIT-III


UNIT-IV


UNIT-V


Implementation and Maintenance: Introduction, Conversion, Maintenance, Activities of maintenance procedure

Text Book:


Reference Books:


Assignment: Students to present a case study (in groups of 4 to 5) on an existing system.
Unit 1:

Unit 2:
Threats - Viruses, worms, Trojan horse, bombs, trap doors, spoofs, email virus, macro Viruses, remedies, Intruders, Malicious software, Firewalls, vulnerabilities & Threats, Network Denial of service attack.

Unit 3:

Unit 4:
Server security- security for network server, web servers, mobile technologies (java and java script etc)

Unit 5:
Intrusion detection techniques – techniques to provide privacy in Internet Application and protecting digital contents(music, video, software) from unintended use, authentication.

Text Book:
Object Oriented Systems

Code: CSIT 503
Credit: 5 (3 + 1 + 2)

UNIT – I

UNIT – II
Basic C++ Concepts: Classes and objects, Constructors and Destructors, Function overloading, Operator Overloading, Friend Function.

UNIT – III
Object Modeling: Objects and Classes, Links and Associations, Generalization and Inheritance, Aggregations, Abstract Classes, Multiple Inheritance, Sample Object Model.

UNIT – IV


UNIT – V

Text Book :
1. Object Oriented Design and Modeling – James Rambaughetal, PHI.
2. Object Oriented Programming with C++ - E. Balagurusamy, TMH.

References:
1. Object Oriented Conceptual Modeling – Dillon and Lee, PHI.
2. Introduction to Object Oriented Analysis and Design – Stephen R. Shah, TMH.
Note: You are requested to moderate the following practical list and submit the amended list  to the office of HoD, DCS&IT, on or before 30 July 2009.

Practical List :

1. Write a function using variables as arguments to swap the values of a pair of integers
2. An election is contested by five candidates. The candidates are numbered 1 to 5 & marking the candidate number on the ballot paper does voting. Write a program to read the ballot & count the votes cast for each candidate using an array, variable count. In case, a number read is out side the range 1 to 5, the ballot should be considered as a ‘spoil ballot' and the program should also count the number of spoil ballot.
3. Write a program to read a matrix of size m*n from the keyboard and display the same on the screen.
4. Write a macro that obtains the largest of three numbers.
5. As the practical 4, using inline function. Test the function using the main program.
6. Define a class to represent a bank account including the following members:-
   Data Members: Name of the depositors, Account number, Type of account, Balance amount in the account.
   Member function: To assign initial values, To deposit an amount , To withdraw an amount after checking the balance, To display the name and balance.
7. Create 2 classes OM and DB which store the value of distance. DM store distances in meters and cm and DB in feet and inches. Write a program that can read values for the class objects and add 1 object OM with another object of DB.
   Use a friend function to carry out the addition operation the object that stores the results may be a DM object or a DB object, depending upon the units in which the results are require. The display should be in the format of feet and inches or meters and cms depending on the object on display.
8. A book shop maintains the inventory of books that are being sold at the shop the list includes details such as author, title and publisher and stock position. Whenever a customer wants the book, the sales person inputs the title and author and the system search the list and display whether it is available or not. If it is not, a appropriate message is displayed, if it is, then the system displays the book details and requests for the number of copies require. If the requested are available, the total cost of the required copies is displayed: otherwise the message" Required copies not in stock"is displayed. Design a system using a class called books with suitable member functions and constructors. Use new operator in constructor to allocate memory space require.
9. Define a class string that could work as a user defined string type include constructors that will enable us to create an .un-initialized string
   String s1; :/ string with length 0
   And also to initialize an object with string constant at the time of creation like
   String s2("well done"); .
   Include a function that adds two strings to make a third string.
10. Create a class float that contains 2-float data member. Over load all the 4 arithmetic operators so that do operate on the objects of float.
11. Create a class MAT of size m*o. Define all possible matrix operation for MAT type objects.
12. Define 2 classes POLAR and RECTANGLE to represent points in the POLAR and RECTANGLE systems.
   Use conversion routines to convert from one system to the other.
13. Create a base class called shape use this class to store two double type values that could be used to compute the area of fig. Derive the specific class called TRIANGLE and RECTANGLE from the data shape. Add to base class, a member function get - data ( ) to initialize base class data members and another member and another member function display – area( ) to compute and display the area of the fig., Make display – area ( ) as a virtual function and redefine function in the derived classes to suit their requirements.
Using these 3 classes design a program that will accept dimension of RECTANGLE or TRIANGLE interactivity and display the area. Remember the 2 values given as input will be treated as length of 2 sides in the case of rectangle and as base and height in the case of triangles and used as follows:

Area of rectangle = x*y

Area of triangle = 1/2 *x*y
Semester IV

Financial Management

Code: BAM – 431 Credit 4(3+1+0)

❖ Scope & Functions of Financial Management
❖ Financial Statement Analysis: Fund Flow; Cash Flow; Ratio Analysis
❖ Concept of Valuation
❖ Theories of Capitalisation
❖ Capital Structure: Financial & Operation Leverage
❖ Capital Budgeting
❖ Complex Investment Decision.

Text Book Recommended:

1. Financial Management – I. M. Pandey
2. Financial Management – Chandra
Programming with Java

Code: CSIT 423
Credit: 5(3+0+4)

UNIT – I :
Basics of Java

UNIT – II :
Object-oriented Concepts
Objects and classes. Object oriented programming characteristics: Abstraction, Encapsulation, Inheritance and Polymorphism. Implementation of OOP in java: classes, access modifiers, extending classes, overloading and overriding.

UNIT – III :
Programming with Java
Data types, constants, variables, arrays, operators and control statements used in java.
Classes and Objects
Concept of class. The general form of class. Declaring objects. Introducing methods in a class. Constructors. Inner and outer class. Exploring the String class.

UNIT – IV :
Access control and modifiers
Public access control. Private access control. Protected access control. Implementation of static, this and super keywords. Understanding final keyword in java.

Inheritance

UNIT – V :
Advanced Concepts

Text Book:
“Programming with Java” by E Balaguruswamy.

Reference Books:
“Java-2, The Complete Reference” by Patrick Naughton and Herbertz Schidt.
“HTML 4 unleashed” by Rick Dranell, second edition, Techmedia publication.
Internet and Web Technologies

Unit-1

Introduction to Internet

Introduction to Internet and Word Wide Web, History of Internet, Applications, Connection types, Internet domain, Working of Internet, Internet Service Providers, Uniform Resource Locator, E-mail, Search Engine, Web Browsers, Web Servers, HTTP, FTP and other Protocols.

Unit-2

HTML


Unit-3

Dynamic HTML


Unit-4

JavaScript


Unit-5

Server Side Scripting:

Introduction to Server Side Scripting Languages, Introduction to ASP, Active Server Objects, Active Server Components, Database Management with ASP, Development of Interactive commercial sites using ASP.

Text Books:

2. EvangelousPetroustsos, “Active Server Pages 3.0”, BPB

References:

1. Web Publishing, D’Souza
2. HTML Complete, BPB
4. ASP Professional, Wrox Publications.
Relational Database Management System

Code: CSIT 505  Credit: 4(2+1+2)

UNIT – 1 Overview

Basic Database Concepts and characteristics, Relational Data base Concepts and its characteristics

Introduction to Oracle, Introduction to SQL (Structured Query Language) * Plus, SQL Data types

UNIT – 2 Data Manipulation and Control

Data Definition language, Creating tables, Creating a table with Rows from another table, Inserting Values into table, Updating columns of a table, Deleting rows from a table, Querying Database tables, Conditional Retrieval of rows, Working with Null values, Matching a pattern with column from a table, Introduction to Sequences, Database security and privileges, GRANT Command, REVOKE Command, COMMIT and ROLLBACK commands

Querying Multiple Tables

Equi joins, Cartesian joins, Outer join, Self join, Set operator, Union, Intersect, Minus, Nested Queries

UNIT -3 View

Introduction to views, Manipulation of Base table through views, Rules for DML statements on join views, Dropping a view

Functions

Column Functions, Arithmetic Functions, Character function, Data function, General Functions, Group functions.

SQL * Plus Reporting

Introduction to SQL * Plus reporting, SQL * Plus Environment Commands, Manipulating variables, Defining Header, Footer & Column Heading, Formatting columns, Control break reports

UNIT -4 Embedding SQL Statements into Procedural Language (PL)


Cursor and Exception handling

Introduction to cursor and its management in PL/SQL, Cursor manipulation, Implicit cursor & its attributes, Exception handling in PL/SQL, Predefined exceptions, User defined exceptions

Advanced features of procedural language for database applications

Subprogram in PL/SQL, Advantages of subprograms, Introduction to procedures, Introduction to functions. Stored packages, Advantages of packages, Dropping procedures, functions and packages

Triggers:

Introduction to triggers, Types of triggers, Dropping triggers

UNIT 5 Introduction to object relational database management system (ORDBMS)
What is an object, What is an object technology, Creation of objects, How to maintain database using objects

Text Books:

1. Ivan Byross, “SQL PL/SQL“, BPB

References:

1. Scott Urman, “SQL PL/SQL Programming”, TMH
2. S.B. Navathe, “Database Management System”, Wesley Addition
Principles of Computer Network

Code: CSIT 511  Credit: 5(3-1-2)


Text Book:

3. Data Communication Na Behrouz Forouzan, Introduction to data communication and networking, TMH.

Reference Books:

1. William Stallings, Data and computer communication, Pearson
2. James F. Kurose, Keith W. Ross, Computer Networking, A Top-down approach, Pearson
Unit-I


Unit-II


UNIT-III

**Software-Design:** Design principles, problem partitioning, abstraction, top down and bottom up-design, Structured approach, functional versus object oriented approach, design specifications and verification, Monitoring and control, Cohesiveness, coupling, Forth generation techniques, Functional independence, Software Architecture, Transaction and Transform Mapping, Component – level Design.

Unit-IV

**Coding:** Top-Down and Bottom –Up programming, structured programming, information hiding, programming style and internal documentation.

**Testing:** Testing principles, Levels of testing, functional testing, structural testing, test plane, test case specification, reliability assessment, software testing strategies, Verification & validation, Unit testing, Integration Testing, Alpha & Beta testing, system testing and debugging.

Unit-V

**Software Reliability & Quality Assurance:** Reliability issues, Reliability metrics, Reliability growth modeling, introductory concepts of Software quality Assurance.

**CASE (Computer Aided Software Engineering):** CASE and its Scope, CASE support in software life cycle, documentation, project management, internal interface, Reverse Software Engineering, Architecture of CASE environment.

**Text Book:**


**Reference Books:**

5. Pankaj Jalote, Software Engineering, Narosa Publication
Semester V

Management Information System

BAM – 544  Credit 3(2+1+0)

❖ Concepts of Management Information System
❖ Information Systems and System Organizations.
❖ Functions of Computer
❖ Computer and information Processing
❖ Information Systems Software
❖ Enterprise – Wide computing and Networking
❖ Alternate System Building methods
❖ Information and Knowledge work system
❖ Artificial Intelligence
❖ Controlling Information System
❖ Office Automation

Text Book Recommended:

1. Management Information System – Kennetch Laudon & Jane Laudon
2. Management Information System – Davis & Olson
3. Management Information System – Suresh Basandra
Unit-1 Introduction
   Definition, DIKW chain, History, Foundation, introduction to intelligent agents, examples, AI technique

Unit-2 AI Problems
   Defining problems, production system, state space, problem characteristics, production system characteristics, issues in design of search problems

Unit-3 Knowledge Representation
   Knowledge representations, introduction to knowledge base, structure based: CD, Script, Frames, Associational graph, rule based: predicate logic; FOPL, Resolution, unification, propositional logic, reasoning under uncertainty, Statistical reasoning

Unit-4 Search and Control Strategies
   Search: Informed search: generate and test, Hill climbing, Best-First search, A*, Uninformed search: DFS, BFS, control strategy

Unit-5 Advanced topics
   Expert Systems, Game playing, Natural Language Understanding, learning, planning

Text Book: 1. Artificial Intelligence :- Elaine Rich and Kevin Knight

Reference Book: 1. Artificial Intelligence and Expert System:- Dan W Patterson
               2. Artificial Intelligence, A modern Approach:- Stuart Russell and Peter Norvig
Unit 1: Introduction

Unit 2: Output Primitives

Unit 3: 2-D Transformations and Viewing
Matrix Representation and Homogenous Coordinates, Basic Transformations, Composite Transformations, Reflection and Shear, 2-D Viewing Pipeline, Clipping Operations, Point Clipping, Line Clipping, Polygon Clipping.

Unit 4: 3-D Transformations and viewing
Basic Transformations, 3-D Viewing Pipeline, Projections: Parallel Projections and Perspective Projections

Unit 5: Multimedia and its Applications

Text Book:
1. Computer graphics: - Hearn and Baker
2. Multimedia making it work: - Vaughan

Reference Books:
2. Principles of Multimedia: - Ranjan Parekh
3. Multimedia in Practice: Technology & Applications: - Judith Jeffcoate
.NET FRAMEWORK AND C#

CODE :CSIT 510 4(2+1+2)

Unit-I
The .NET framework:


Unit-II
C# Basics:

Introduction, Features of C#, Data Types, Identifiers, variables & constants, C# statements, flow control and loops, Arrays and Strings, Object Oriented Concepts, Object and Classes, System Collections, Delegates and Events.

Unit-III
C# Using Libraries:


Unit-IV
Advanced Features Using C#:

Web Services, Windows services, Messaging, Reflection, and Localization. Distributed Application in C#.

Unit-V
Data Access with .NET:

Introduction to ADO.NET, Namespaces, Shared and Database-Specific classes, using Database connection. Fast Data Access: The Data Reader. Managing Data & Relationships: The DataSet Class.

Text Books

2. Shildt, “C#: The Complete Reference”, TMH

Reference Books

6. Balagurusamy, “Programming with C#”, TMH
UNIT -I


UNIT -II

Memory: Processor & memory hierarchy, bus, cache & shared memory introduction to super scalar architectures, Quantitative evaluation of performance gains using memory, cache miss/hits.

UNIT-III

Pipeline Processing: Introduction to Pipeline Processing, SIMD parallel processors, Arithmetic pipelines, steady state analysis of pipeline, Pipelined instruction processing, interlocks, hazards, hazards detentions and resolution memory systems used in pipelines, scheduling of dynamic pipelines.

UNIT-IV

Synchronous Parallel Processing: SIMD Parallel algorithm, recurrence and matrix computations, Distributed array processor, Processor Arrays, Multiprocessors, parallel programming languages, mapping and scheduling.

UNIT-V

Interconnection Networks: Introductions, Elementary Permutations used in Interconnection Network, Network Classification - Cross bar network, Commonly used Interconnection Network, Data Manipulator, Network Routing and Multistage Data Manipulator.

Text Book :


Books & References:

1. Peterson & Heresy, “Quantitative approach to computer Architecture,” “Morgan Kaufman”.
Unit I: INTRODUCTION


Unit II: XML TECHNOLOGY

XML Name Spaces, Structuring With Schemas and DTD, Presentation Techniques, Transformation, XML Infrastructure, X Query, X Path.

Unit III: SOAP

Overview Of SOAP, HTTP, XML-RPC, SOAP: Protocol, Message Structure, Intermediaries, Actors, Design Patterns And Faults, SOAP With Attachments.

Unit IV: WEB SERVICES

Overview, Architecture, Key Technologies, UDDI, WSDL, ebXML, SOAP And Web Services In E.Com, Overview Of .NET And J2EE.

Unit V: XML SECURITY


TEXT BOOKS:


REFERENCES:


Semester VI

Data Warehousing

**Course Code:** CSIT-522  
**Credit:** 4 (3 + 1 + 0)

UNIT – I

**Data Warehousing:** Introduction, Characteristics of a Data Warehouse, Data Warehouse Architecture, Data Mart, Types of Data Mart, Nature of Data in Data Mart, Fact Tables and Dimensions in Data Warehouse, Performance issues, Security in Data Mart.

UNIT – II

**OLTP and OLAP Systems:** Data Modeling, Data Warehouse Schemas, Difference between OLTP and OLAP, Types of OLAP Servers: ROLAP, MOLAP and HOLAP, OLAP operations, Managed Query Environment (MQE).

UNIT – III

**Data Mining:** Introduction, From Data Warehouse to Data Mining, Steps of Data Mining, Knowledge Discovery Databases, ETL Process, Data Mining Techniques: Classification, Association, Clustering: Decision Trees and Neural Networks.

UNIT – IV

**Developing Data Warehouses:** Building a Data Warehouse, Data Warehouse architectural strategies, Design considerations, Data content, Metadata distribution of Data, Tools for Data Warehousing, Performance considerations, Crucial decisions in designing a Data Warehouse, Various technological considerations.

UNIT – V

**Applications:** Applications of Data Warehousing and Data Mining, National Data Warehouses, Census Data.

**Text Book:**

1. Data Mining: Concept and Techniques By Jiawei Han and Micheline Kamber Morgan Kaufmann Publishers
2. Data Warehousing – C. S. R. Prabhu, PHI.

**References:**

Data Warehousing and Knowledge Management – Mattison, TMH
LINUX & SHELL PROGRAMMING

Code: CSIT 601                          Credit: 5(3+1+2)

Unit-I Introduction
Introduction to Unix, Unix system organization (the kernel and the shell), Files and directories, Library Functions and system calls, vi Editor, Introduction to open source

Unit-II Unix Shell Programming
Types of shells, Shell Metacharacters, Shell variables, Shell scripts, Shell commands, the environment, Integer arithmetic and string manipulation, Decision making and loop control, controlling terminal input, trapping signals, arrays.

Unit-III Portability with C

UNIT-IV Signals and IPC
Signals: Concepts, unreliable signals, Interrupted system calls, Reentrant Functions, Different signal handling functions.

Inter Process Communication: Pipes, Coprocessors, FIFOs, Semaphores, Shared Memory.

Unit-V Unix System Administration
File System, mounting and unmounting file system, System booting, handling user accounts, backup, recovery, security, creating files, storage of files, Disk related commands.

Text Books

1. Sumitabha Das, “Unix Concepts and applications”, TMH.

References:

**Latest Trends in IT**

**Code**: CSIT 602  
**Credits**: 4(3-1-0)

**Aim**: This course aims to upgrade the knowledge of students in respect of contemporary and innovative technologies/tools in the field of Information Technology. This course will also help the students to hone their skills to the requirements of the industry.

Some of the major areas of thrust (but not limited to) are as given below:

- Information Representation Technologies
- Computer Organization and Architecture
- Operating System
- Software Engineering
- Data Communication & Networking
- Data Base Management System
- Forensics
- Digital Libraries

Note: Students will also be required to give presentation on selected topics.
Enterprise Resource Planning

Code: CSIT 609 Credits: 4(3-1-0)

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOKS:

REFERENCES:
Bachelor of Computer Applications is a three-year undergraduate degree course in the field of computer applications/computer science. After BCA, the students can do further studies as MCA master in computer application. You are learn basic programming just like: 1. C, 2. C++, 3. VB, 4. HTML (PHP). Imp language- you are learn node js, python, iOS, android. A bachelor's degree in computer science meets the entry-level education requirement for many in-demand computer science jobs. For example, the Bureau of Labor Statistics projects 11% job growth for computer information systems managers and 21% job growth for software developers between 2018 and 2028. These careers offer average salaries of over $105,000 per year. The flexibility of an online computer science degree program allows students to balance their studies with personal and professional obligations. The 120-credit degree includes core courses like data structure and algorithms, applications of discrete structures, and digital logic and computer systems. In addition to courses, students must complete a major design experience. Bachelor of Science (Hons) in Computer Applications. CAO Code DC121. Course Type Undergraduate. The BSc in Computer Applications is Ireland’s most popular computing degree. Computing technology is and will remain all around us in our everyday lives. Obtain in-depth knowledge of software engineering and the practical skills to apply this knowledge. Gain experience with six months paid INTRA work placement. Graduates work in some of today’s most innovative and exciting fields, such as computer games, graphics, robotics, mobile computing and electronic commerce. Your skills will be recognised and valued the world over. Student Voice.