



**Department:** Computer Science  
**Subject Name:** Allied Mathematics I

**Year : I Semester : I**  
**Subject Code : SBAMM**

**(Learning Outcome/ Acquisition)**

**CO1.** Apply Newton's forward, backward interpolation formula when the intervals are equally spaced and apply Lagrange's interpolation formula when the intervals are not equally spaced.

**CO2.** Understand and apply Cayley Hamilton Theorem.

**CO3.** Solve reciprocal equation.

**CO4.** Expand sin, cos and tan in a series of sines, cosines and tangents of multiples of  $\theta$ .

**CO5.** Find the radius of curvature in Cartesian co.ordinates and find the maximum and minimum values of a given function.

**Department:** Computer Science  
**Subject Name:** Stress Management

**Year : I Semester : I**  
**Subject Code : SNT1C**

**(Learning Outcome/ Acquisition)**

**CO1.** Understand the meaning of stress, its reaction and its cycle

**CO2.** Analyse the consequences of stress and the ways to overcome stress.

**CO3.** Describe about stress management and the ways to control and manage Stress.

**CO4.** Scrutinize about the ways to do self assessment and time management.

**CO5.** Demonstrate the different relaxation techniques.

**Department:** Computer Science  
**Subject Name:** Digital Electronics and  
Microprocessor

**Year : I Semester : II**  
**Subject Code : SAE2B**

**(Learning Outcome/ Acquisition)**

**CO1.** Describe basic logic gates, Boolean algebra simplification and combinational logic circuits.

**CO2.** Understand the importance of sequential logic circuits.

**CO3.** Applications related to fundamentals of microprocessor, 8085 instructions and simple programs.

**CO4.** Evaluate the concept of time delay programs and code conversion.

**CO5.** Implement operations related to 8085 interrupts and interfaces in detail.

**Department:** Computer Science  
**Subject Name:** Digital Electronics and  
Microprocessor Lab

**Year : I Semester : II**  
**Subject Code : SAE22**

**(Learning Outcome/ Acquisition)**

**CO1.** Verification of the logic circuits through truth tables.

**CO2.** Implementation of Universal Gates.

**CO3.** Applying the concept of K-Map Reduction and verification through logic circuits.

**CO4.** Describe the concepts of adder and subtractor and verification of logic circuits through truth tables.

**CO5.** Implement the arithmetic operations of 8 bit and 16 bit binary numbers through various examples.

**Department:** Computer Science  
**Subject Name:** Allied Mathematics II

**Year : I Semester : II**  
**Subject Code : SBAMN**

**(Learning Outcome/ Acquisition)**

**CO1.** Apply Bernoulli's formula. Find the fourier series for the function in the interval  $(\alpha, \alpha + 2\pi)$ .

**CO2.** Solve an ordinary differential equation and partial differential equation.

**CO3.** Find the laplace transform of a given function and compute its inverse.

**CO4.** Find the divergence, curl of a given vector and find whether a given vector is solenoidal or not.

**CO5.** Apply Gauss, Green's and Stokes theorem.



**Department:** Computer Science  
**Subject Name:** Statistical Methods and their Applications-I

**Year : II Semester : III**  
**Subject Code : SBAOC**

**(Learning Outcome/ Acquisition)**

- CO1. Familiarise basic level statistics.
- CO2. Organize, manage and present data.
- CO3. Apply a wide variety of specific statistical methods.
- CO4. Apply mathematical basis and foundations of probability and statistics.
- CO5. Effectively communicate results of statistical analysis.

**Department:** Computer Science  
**Subject Name:** Programming in C++ and Data Structures Lab

**Year : II Semester : III**  
**Subject Code : SA31**

**(Learning Outcome/ Acquisition)**

- CO1. Implement Push, Pop operations of stack using arrays & Pointers.
- CO2. Evaluate operations of a queue using arrays & pointers.
- CO3. Convert infix to postfix using stack operations & postfix evaluation.
- CO4. Understand the addition of two polynomials using arrays & pointers, basic operations on doubly linked list.
- CO5. Apply the concept of Binary tree traversals using linked list & Depth First search , Breadth First search for graphs using recursion.

**Department:** Computer Science  
**Subject Name:** Programming in JAVA

**Year : II Semester : IV**  
**Subject Code : SAE4A**

**(Learning Outcome/ Acquisition)**

- CO1. Describe the fundamentals and control structures of Java language
- CO2 Understand the classes, objects, constructors, arrays and string through simple programs
- CO3. Demonstrate the essentials of interfaces packages and threads.
- CO4. Implement the concept of exception handling, Applet programming, graphics programming, Stream and files.
- CO5. Implementing socket programming and AWT classes , working with menus , frames, colors and fonts .

**Department: Computer Science**  
**Subject Name: Programming in JAVA Lab**

**Year : II Semester : IV**  
**Subject Code : SAE41**

**(Learning Outcome/ Acquisition)**

**CO1** .Write programs based upon java concepts.

**CO2** .Create animation & events based upon advanced java concepts.

**CO3**. Connect an application with database.

**CO4**. Develop programs using java collection API as well as java Standard Library.

**CO5**.Write, debug & document well structured java application

**Department: Computer Science**  
**Subject Name: Statistical Methods and their Applications-II**

**Year : II Semester : IV**  
**Subject Code : SBAOD**

**(Learning Outcome/ Acquisition)**

**CO1**.Value of mathematical and statistical thinking, training and approach to problem solving.

**CO2**.Recognize and appreciate the connections between theory and applications

**CO3**. Effectively apply the concept of foundations of probability and statistical distributions.

**CO4**. Apply hypothesis testing and Analysis of Variance.

**CO5**. Effectively communicate results of statistical analysis.

**Department: Computer Science**  
**Subject Name: Statistical Methods and their Applications Practical**

**Year : II Semester : IV**  
**Subject Code : SBAO1**

**(Learning Outcome/ Acquisition)**

**CO1**. Understand the different Frequency distribution Methods.

**CO2**. Demonstrate data using graphical and frequency distribution methods.

**CO3**. Compute cumulative frequency and Lorenz curve.

**CO4**. Implement test for proportions using sample test.

**CO5**. Evaluate and test goodness of fit.

**CO6**. Estimation of Simple, Stratified ,Systematic and random Sampling procedure.

**Department:** Computer Science  
**Subject Name:** Environmental Studies

**Year : II Semester : IV**  
**Subject Code : ENV4A**

**(Learning Outcome/ Acquisition)**

- CO1. Describe environment and the need of public awareness.
- CO2. Distinguish renewable and non-renewable natural resources.
- CO3. Classify ecosystem and its features.
- CO4. Importance of biodiversity and its conservation.
- CO5. Categorize various pollution and its measures.
- CO6. Analyze various environmental ethics to solve urban problems.
- CO7. Knowledge on human rights and role of IT.

**Department:** Computer Science  
**Subject Name:** Visual Basic Programming

**Year : III Semester : V**  
**Subject Code : SEE5A**

**(Learning Outcome/ Acquisition)**

- CO1. Demonstrate the fundamentals of visual programming and Graphical User Interface.
- CO2. Understand the various control structures, functions and procedures of visual programming and write simple programs
- CO3. Comprehend the essentials of arrays, Grid controls and procedure
- CO4. Apply common controls, MDI and optimization
- CO5. Implement DLL Server, OLE automation and file processing methods.

**Department:** Computer Science  
**Subject Name:** RDBMS Programming using VB

**Year : III Semester : V**  
**Subject Code : SEE51**

**(Learning Outcome/ Acquisition)**

- CO1. Demonstrate various controls in VB GUI environment.
- CO2. Apply data controls and connectivity through Oracle.
- CO3. Evaluate projects by using insert, delete and modify operations.
- CO4. Comprehend the use of MDI forms
- CO5. Validation through data reports.

**Department:** Computer Science                      **Year : III Semester : V**  
**Subject Name:** Database Management System                      **Subject Code : SAE5B**

**(Learning Outcome/ Acquisition)**

- CO1.**Demonstrate and identify the components of DBMS.
- CO2.** Illustrate the importance of various Normal Forms.
- CO3.** Describe DML,DDL,DCL statements.
- CO4.** Comprehend about the effective ways to design forms and reports.
- CO5.** Analysis of various database recovery techniques and backup methods.

**Department:** Computer Science                      **Year : III Semester : V**  
**Subject Name:** Operating System                      **Subject Code : SAE5A**

**(Learning Outcome/ Acquisition)**

- CO1** Master functions, structures and history of operating systems
- CO2** Master understanding of design issues associated with operating systems
- CO3** Master various process management concepts including scheduling, synchronization, deadlocks
- CO4** Familiarize with multithreading
- CO5** Master concepts of memory management including virtual memory
- CO6** Master system resources sharing among the users
- CO7** Master issues related to file system interface and implementation, disk management
- CO8** Familiarize with protection and security mechanisms

**Department:** Computer Science                      **Year : III Semester : V**  
**Subject Name:** Computer Architecture and Organisation                      **Subject Code : SAE5C**

**(Learning Outcome/ Acquisition)**

- CO1.** Understand about Computer Evolution, Cache memory and about Bus interconnection.
- CO2.** Demonstrate about Memory organization and also about RAID concepts.

**CO3.** Key concepts related to Input modules, Addressing modes and about Instruction set.

**CO4.** Comprehend about organization of processors, pipelining, registers and about optimization techniques.

**CO5.** Implement micro operations, micro instructions and execution.

**Department:** Computer Science  
**Subject Name:** Value Education

**Year : III Semester : V**  
**Subject Code : VAE5Q**

**(Learning Outcome/ Acquisition)**

**CO1.** Understand holistic living, duties and responsibilities

**CO2.** Techniques related to development of self-confidence, self-esteem .

**CO3.** Importance of social values and human rights

**CO4.** Realize interdependencies of all beings and ecological balance.

**CO5.** Ways to handle time , Stress in order to be successful.

**Department:** Computer Science  
**Subject Name:** Data Communication Network

**Year : III Semester : VI**  
**Subject Code : SAE6A**

**(Learning Outcome/ Acquisition)**

**CO1** Understand the concept of data communication and modulation techniques.

**CO2** Comprehend the use of different types of transmission media and network devices.

**CO3** Understand the error detection and correction in transmission of data.

**CO4** Evaluate the concept of flow control, error control and LAN protocols.

**CO5** Validate functions performed by Network Management System.

**Department:** Computer Science  
**Subject Name:** Client Server Computing

**Year : III Semester : VI**  
**Subject Code : SEE6C**

**(Learning Outcome/ Acquisition)**

**CO1.** Describe the basic concepts of Client/Server computing, Operating system, hardware & software trends, benefits of Client/Server.

**CO2.** Understand about the components & categories of the client/server computing, standards & their success factors.

**CO3.** Familiarise on the Client hardware & software components, database access tools, GUI environments, tools, standards & testing interfaces.

**CO4.** Describe features, categories & classes of the Server, N/W environment, operating system.

**CO5.** Understand the concepts related to Server operating system, Intelligent databases, testing & diagnostic tools, backup & recovery methods.

**Department: Computer Science**  
**Subject Name: Web Technology**

**Year : III Semester : VI**  
**Subject Code : SAE6B**

**(Learning Outcome/ Acquisition)**

**CO1.** Understand the concept of scripting language and structure of the Web page.

**CO2.** Develop simple programs using scripting language.

**CO3.** Introduce ASP.NET programming, manipulation of properties and compiler directives.

**CO4.** Describe the essentials of OLEDB Connection, IIS , page directives, security, Authentication and client certificates.

**CO5.** Implement , Create and Validate through simple projects.

**Department: Computer Science**  
**Subject Name: Web Technology Lab**

**Year : III Semester : VI**  
**Subject Code : SAE61**

**(Learning Outcome/ Acquisition)**

**CO1.** Create simple Programs using VBscript and Java Script.

**CO2.** Implement cookies and DOM.

**CO3.** Create ASP page for simple projects like login creation, validation etc.

**CO4.** Understand Database connectivity.

**CO5.** Implement and Evaluate by sample programs.

**Department: Computer Science**  
**Subject Name: Object Oriented Analysis and Design**

**Year : III Semester : VI**  
**Subject Code : SAE6D**

**Learning Outcome/ Acquisition)**

**CO1.** Understand about System development, UML methodologies, Framework, patterns and about unified approach.

**CO2.** Describe about use case models and analysis of object based on case studies.

**CO3.** Demonstrate about Input modules, Addressing modes and about Instruction set.

**CO4.** Comprehend about organization of processors, pipelining, registers and about optimization techniques.

**CO5.** Evaluate and validate micro operations, micro instructions and execution.