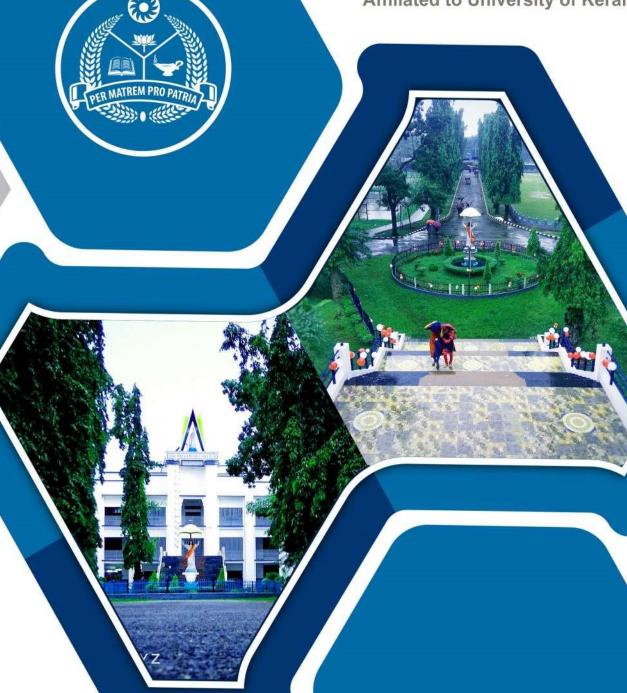
FATIMA MATA NATIONAL COLLEGE

AUTONOMOUS

(Reaccredited with 'A' Grade by NAAC)
Affiliated to University of Kerala



OUTCOME MAPPING

IQACINTERNAL QUALITY
ASSURANCE CELL

BCA

PROGRAMME OUTCOMES (POs)

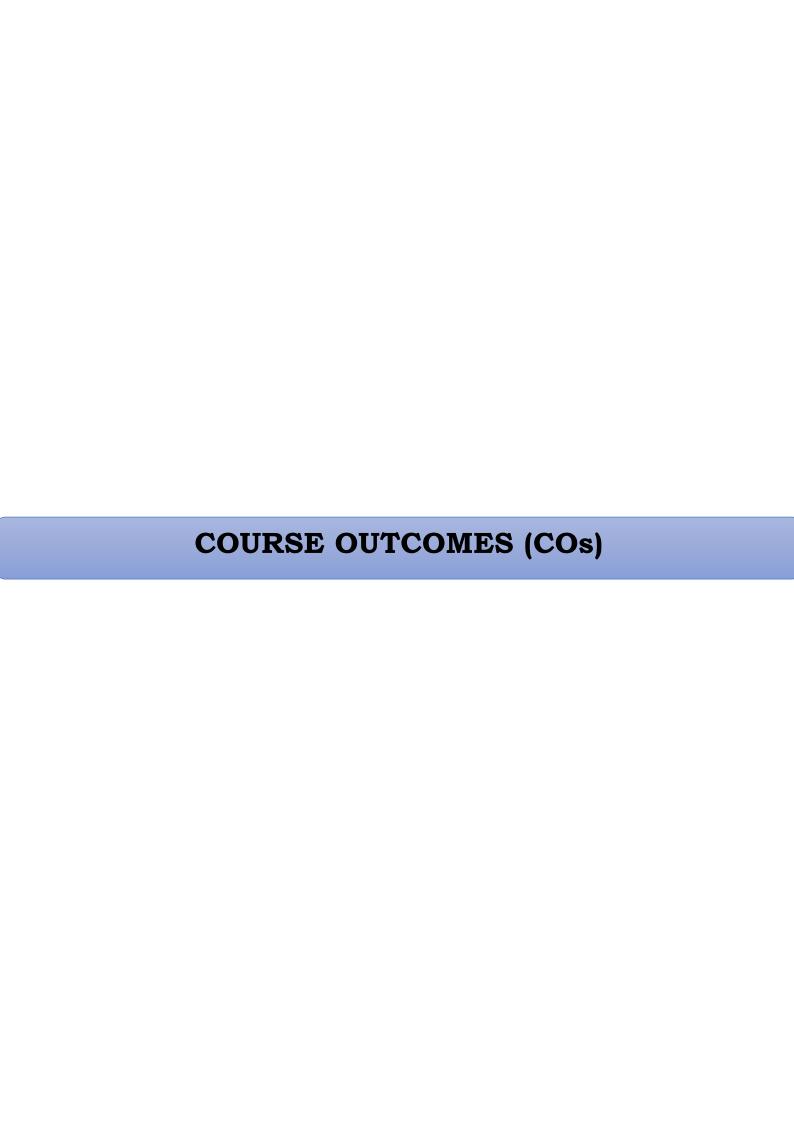
| | Nationalistic Outlook and Contribution to National |
|-----|----------------------------------------------------------------------------|
| | development: Understand the distinct features of nationalistic |
| 701 | outlook as enshrined in our Constitution and apply them towards |
| PO1 | national development, and nurture respect and love for the |
| | motherland, showing no discrimination based on gender, caste and |
| | creed. |
| | Fostering Global Competencies, and Technical and Intellectual |
| | proficiency: Apply intellectual and technical skill to compete in a |
| P02 | global setting and demonstrate proficiency in creating and applying |
| | appropriate technique, resources and modern IT tools for ensuring |
| | greater personal growth and global outlook. |
| | Values and Social Commitment: Demonstrate the essence of |
| | human values through acts of social commitment, develop |
| | professional ethics and responsibilities; function effectively as an |
| P03 | individual, and as a member or leader in diverse teams, and in |
| 100 | multidisciplinary settings; show respect for fellow beings by fair |
| | treatment, caring and concern; listen responsively, recognize the |
| | contributions of others, and engage in reflective practice; imbibe |
| | spirit of selfless service. |
| | Affective Skills and Integrity of Character: Receive affective |
| | skills and organize activities displaying integrity of character, foster |
| P04 | qualities such as emotional self-awareness, emotional reasoning |
| | and emotional self-management for addressing workplace |
| | challenges, and develop personal integrity and character. |
| | Critical Thinking, Problem Solving and Research-related Skills: |
| P05 | Develop critical thinking, and psycho-motor skills, create a sense |
| | of inquiry and research skills and take an analytical approach to |
| | learning for cutting edge areas. |
| | Environment and Sustainability: Design measures which meet |
| 706 | the global agenda of environment protection and sustainable |
| P06 | development, develop consciousness to preserve the earth's finite |
| | resources, and wisdom, to balance human needs and the |
| | environment, and to instill an environmental consciousness. |
| | Quest for Excellence: Receive skills towards holistic development |
| D07 | and quest for excellence, recognize the need for, and have the |
| P07 | preparation and ability to engage in an independent and life-long |
| | learning in the broadest context of technological change, develop |
| | healthy competition and setting parameters for excellence. |

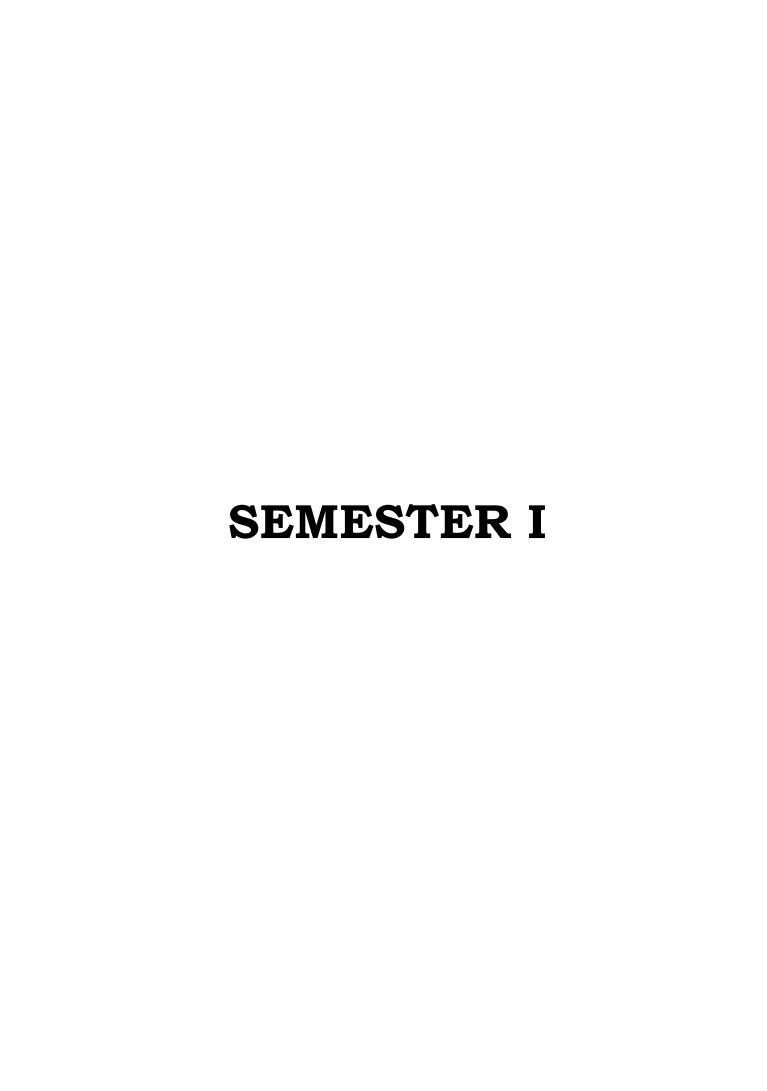
PROGRAMME SPECIFIC OUTCOMES (PSOs)

| PSO 1 | Develop linguistic skills and literary sensibility. | | | |
|-------|----------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| PS0 2 | Demonstrate awareness on environment, disaster management and its associated problems. | | | |
| PS0 3 | Use design and develop algorithms and implement them as technically relevant programs, with analysis and interpretation of data. | | | |
| PS0 4 | Identify design solutions in Web Designing, Big Data, IOT, Python. | | | |
| PS0 5 | Apply various software engineering approaches for project management and enhance programming skills. | | | |
| PS0 6 | Demonstrate leadership, time management skills and team work ability. | | | |
| PS0 7 | Solve environmental issues using system concepts and methodologies. | | | |
| PSO 8 | Apply knowledge of mathematics, management, logic and Computer Science. | | | |

PSO - PO MAPPING

| | | | | | POs | | | |
|------|---|---|---|---|-----|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | 1 | | * | | | | | * |
| | 2 | | * | | | | | |
| | 3 | | | | | * | | |
| PSOs | 4 | | * | | | * | | * |
| | 5 | | * | | | * | | * |
| | 6 | | * | | * | | | * |
| | 7 | | | * | | | * | |
| | 8 | * | | | | | | |





Course Code: 19UEN111.4 English I - LANGUAGE SKILLS

| Upon | Upon completion of this course, the student will be able to: | |
|------|--------------------------------------------------------------|---|
| CO 1 | Apply language skills in daily life situations | 1 |
| CO 2 | Analyze and Evaluate English literature | 1 |
| CO 3 | Apply their knowledge in Writing Skills. | 1 |

Course Code: 19UMM131.9

Complementary Course I - DISCRETE MATHEMATICS

| Upon | completion of this course, the student will be able to: | PSO |
|------|----------------------------------------------------------------------------------------------------------|-------|
| CO 1 | Explain the basics of set theory and to develop algorithms and recursions | 2,4,7 |
| CO 2 | Apply algebra to develop hamming codes and error correction. | 2 |
| CO 3 | Use graph theory to frame algorithms | 2,4 |
| CO 4 | Apply formal languages and automata to provide link between mathematics and theoretical computer science | 2,7 |

Course Code: 19UCP121

Foundation Course I – FUNDAMENTALS OF COMPUTER

| Upon | Upon completion of this course, the student will be able to: | |
|------|--------------------------------------------------------------|-------|
| CO 1 | Explain basic electronics and software concepts | 2,6 |
| CO 2 | Examine PC hardware, operations and concepts | 2,4,6 |
| CO 3 | Use GUI Operating System | 2 |
| CO 4 | Identify the role of CPU and its components. | 2,4 |
| CO 5 | Use MS Word, MS Excel and MS PowerPoint | 2,5 |

Core Course I – C PROGRAMMING

| Upon | Upon completion of this course, the student will be able to: | |
|------|--------------------------------------------------------------|-------|
| CO 1 | Develop logics which will help them to create programs | 2,3,4 |
| CO 2 | Demonstrate basic elements and control structures in C | 3,5 |
| CO 3 | Develop C programs using functions and pointers | 4,5 |
| CO 4 | Use advanced features in C | 8 |
| CO 5 | Explain advanced concepts of C language | 2,3 |

Course Code: 19UCP142

Core Course II - ENVIRONMENTAL STUDIES

| Upon | Upon completion of this course, the student will be able to: | |
|------|--------------------------------------------------------------------------------------------------|-----|
| CO 1 | Define the scope of Environmental Science and identify the different types of natural resources. | 2,6 |
| CO 2 | Define and identify the ecosystems and biodiversity around us. | 2,6 |
| CO 3 | Analyze and assess the types of pollutions and social issues around us. | 2,6 |
| CO 4 | Understand the impact of population on environment. | 2,6 |

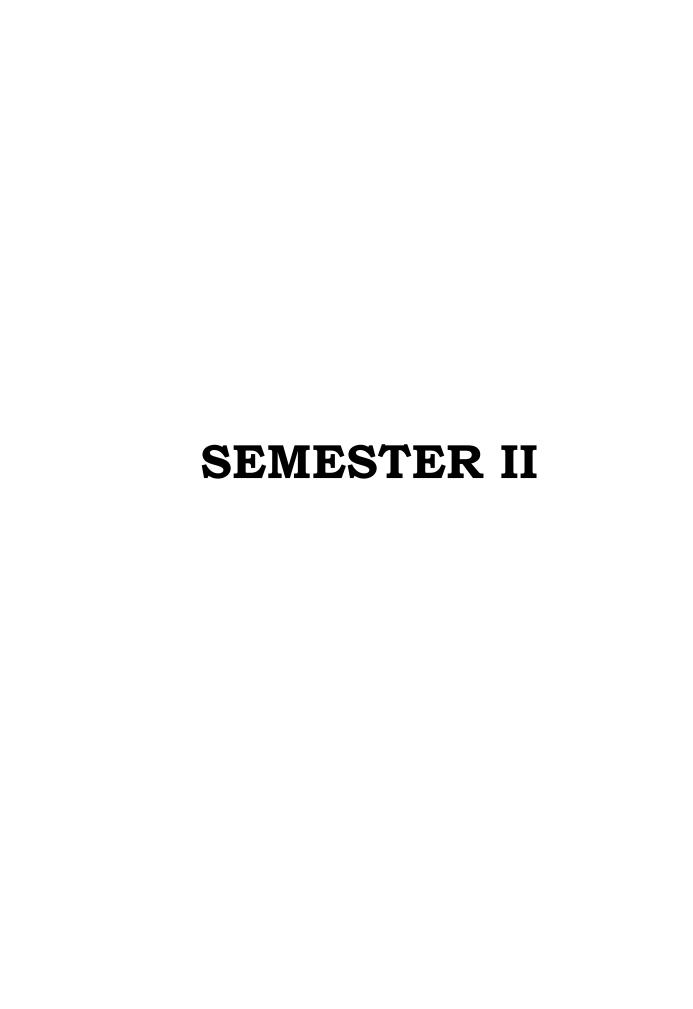
Course Code: 19UCP143

Core Course III - SOFTWARE LAB 1-C PROGRAMMING

| Upon | Upon completion of this course, the student will be able to: | |
|------|-----------------------------------------------------------------------------------------------------|-----|
| CO 1 | Understand concepts in problem solving | 3 |
| CO 2 | Reconstruct and trace the execution of programs written in C language | 4,6 |
| CO 3 | Write diversified solutions using C language | 3 |
| CO 4 | Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor. | 5,6 |

Core Course IV - SOFTWARE LAB 2-PC SOFTWARE

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|--------------------------------------------------------|-----|
| CO 1 | Explain the concept of system software | 3 |
| CO 2 | Examine and trace the execution of programs | 4,6 |
| CO 3 | Describe diversified solutions to the processor issues | 3 |
| CO 4 | Implement Programs in the PC software | 5,6 |



Course Code: 19UEN211.4

English II - ENGLISH GRAMMAR AND COMPOSITION

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|----------------------------------------------------------------|-----|
| CO 1 | Define and identity the basis of grammar. | 1 |
| CO 2 | Identify and explain the different types of sentences. | 1 |
| CO 3 | Apply the rules of grammar in all situations of communication. | 1 |
| CO 4 | Design written discourse. | 1 |

Course Code: 19UMM231.9 Complementary Course II - COMPUTER ORIENTED NUMERICAL METHODS

| Upon | completion of this course, the student will be able to: | PSO |
|------|-------------------------------------------------------------------------------------------------------|-------|
| CO 1 | Solve polynomial and transcendental equations using different numerical methods | 4,7 |
| CO 2 | Describe linear algebraic equations and solve those problems using iteration method and exact methods | 2,4,7 |
| CO 3 | Explain polynomial interpolation using difference formula | 2,4 |
| CO 4 | Solve numerical integrations using different methods | 7 |
| CO 5 | Demonstrate skill of writing programs for the different numerical methods | 2,4 |

Course Code: 19UCP231 Complementary Course III - DIGITAL ELECTRONICS

| Upon | completion of this course, the student will be able to: | PSO |
|------|----------------------------------------------------------------------------|-----|
| CO 1 | Explain Boolean algebraic expressions to digital designs | 2 |
| CO 2 | Interpret logic gates and its operations | 2 |
| CO 3 | Describe methods of systematic reduction of Boolean expression using K map | 2,8 |
| CO 4 | Use the Integrated circuits | 8 |

Core Course V - DATA STRUCTURES

| Upon | completion of this course, the student will be able to: | PSO |
|------|-------------------------------------------------------------------------------------------------|-----|
| CO 1 | Use data structures like array, structures, lists, stacks, queues, trees and graphs | 2,3 |
| CO 2 | Implement the data structures in C program | 5,8 |
| CO 3 | Use various searching and sorting strategies | 2 |
| CO 4 | Categorise data structures for solving a given problem and apply algorithms of data structures. | 2,4 |

Course Code: 19UCP242

Core Course VI - C++ PROGRAMMING

| Upon | completion of this course, the student will be able to: | PSO |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| CO 1 | Explain object-oriented concepts and describe how they are supported by C++ including identifying the features and peculiarities of the C++ programming language. | 2,4,3 |
| CO 2 | Apply the major object-oriented concepts such as encapsulation, inheritance and polymorphism to implement object-oriented programs in C++. | 4 |
| CO 3 | Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and object | 2,5,8 |
| CO 4 | Categorise inheritance with the understanding of early and late binding, usage of exception handling, generic programming | 2,4 |

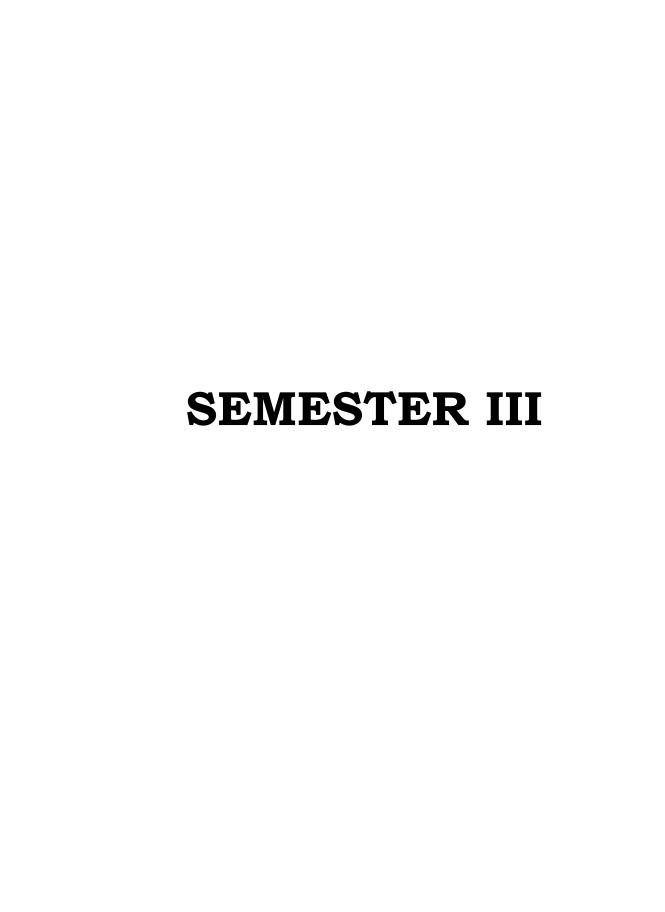
Core Course VII - SOFTWARE LAB 3-C++ PROGRAMMING

| Upon | completion of this course, the student will be able to: | PSO |
|------|----------------------------------------------------------------------------------------------------------------------|-----|
| CO 1 | Develop solutions for a range of problems using objects and classes | 2 |
| CO 2 | Design Programs to demonstrate the implementation of constructors, destructors and operator overloading | 4 |
| CO 3 | Apply fundamental algorithmic problems including typecasting, inheritance and polymorphism. | 3 |
| CO 4 | Illustrate generic programming, template, file handling | 4 |
| CO 5 | Illustrate basic data types and control structures in C++ and manages classes and objects in a variety of situations | 5,8 |

Course Code: 19UCP244

Core Course VIII - SOFTWARE LAB 4-DATA STRUCTURES

| Upon | completion of this course, the student will be able to: | PSO |
|------|-------------------------------------------------------------------------------------|-----|
| CO 1 | Explain data structures: array, structures, lists, stacks, queues, trees and graphs | 2 |
| CO 2 | Implement the above data structures in C | 2 |
| со з | Write programmes on different trees, construction and traversal | 2,3 |
| CO 4 | Judge appropriate data structures for solving a given problem | 3,8 |
| CO 5 | Apply algorithms of data structures on data | 4,5 |



Course Code: 19UCP331 Complementary Course IV - COMPUTER ORGANIZATION & ARCHITECTURE

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|-----------------------------------------------------------------|-----|
| CO 1 | Explain the functional units of PC | 2 |
| CO 2 | Describe about instructions, parallel processing and pipelining | 2 |
| CO 3 | Explain organiization of Processors | 8 |
| CO 4 | Describe about various input-output operations, transfer modes | 2 |

Course Code: 19UCP342

Core Course IX - COMPUTER NETWORKS

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----|
| CO 1 | Develop computer networks and transmission technologies | 2,8 |
| CO 2 | Enumerate the layers of OSI model and TCP/IP model and explain the functions and responsibilities of each layer | 7 |
| CO 3 | Analyse the various access control protocols | 2 |
| CO 4 | Classify the different routing protocols and describe the principles of congestion control in networks. | 2 |
| CO 5 | Identify the areas of networks where different application layer protocols can be used. | 8 |

Core Course X – JAVA PROGRAMMING

| Upon | completion of this course, the student will be able to: | PSO |
|------|------------------------------------------------------------------------------------------------------------------------|-------|
| CO 1 | Explain the basic oops concept, Java evaluation and implementation overview of java | 3,4,5 |
| CO 2 | Describe operators and expressions, decision making and branching, Decision making and looping | 3 |
| CO 3 | Use classes and methods, array strings and vectors, interface concept instead of multiple inheritances | 3,4,5 |
| CO 4 | Describe packages of java, multithreaded programming contains synchronization, managing errors and exceptions handling | 3,8 |
| CO 5 | Perform applet programming designing HTML, graphic programming. | 3,5,8 |

Course Code: 19UCP344

Core Course XI – DATABASE MANAGEMENT SYSTEMS

| Upon | completion of this course, the student will be able to: | PSO |
|------|-------------------------------------------------------------------------------------------------------------------------------------------|-----|
| CO 1 | Explain the fundamental concepts of a relational database system and how data models can be classified by level of abstraction. | 3,5 |
| CO 2 | Apply relational database theory and be able to describe relational algebra expression, tuple and domain relation expression for queries. | 4 |
| CO 3 | Recognize the purpose of query processing and the basic commands and functions of SQL. | 5,8 |
| CO 4 | Identify the use of normalization and functional dependency and the role it plays in database design process. | 4 |
| CO 5 | Identify the basic concepts of ER modelling and the different types of entities and relationship between them. | 5 |

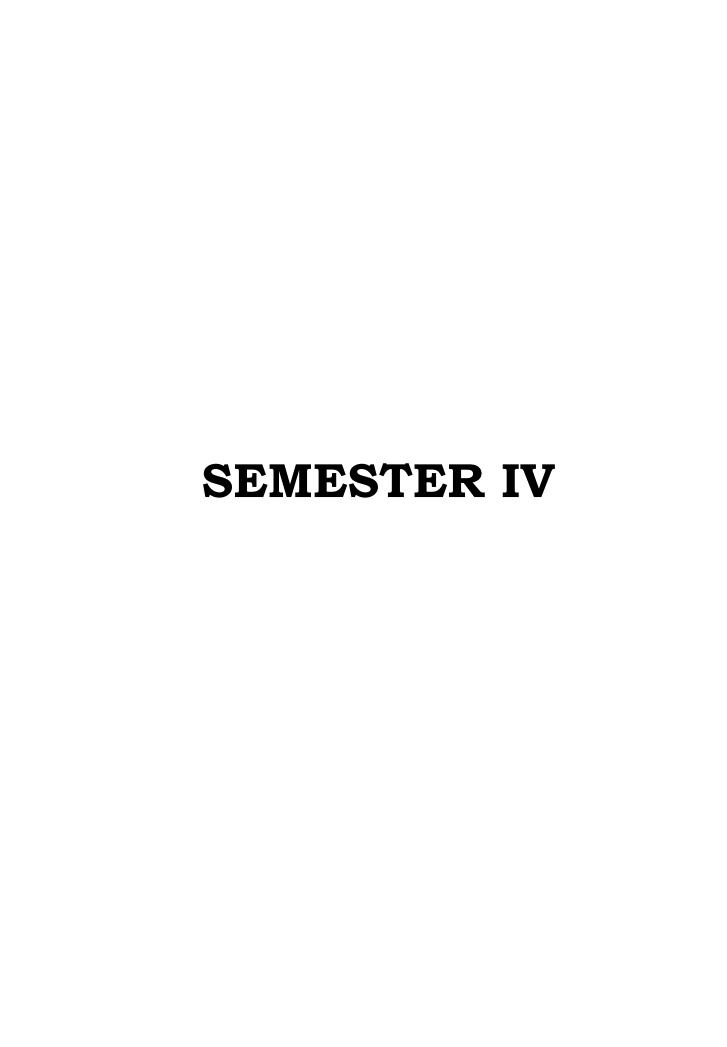
Core Course XII - SOFTWARE LAB 5-DBMS LAB

| Upon | completion of this course, the student will be able to: | PSO |
|------|-----------------------------------------------------------------------------------------------------------------------|-----|
| CO 1 | Implement Basic DDL, DML and DCL commands | 5 |
| CO 2 | Perform Data selection and update operators used in queries and restrict data retrieval and control the display order | 5 |
| CO 3 | Explain sub queries and their purpose | 4 |
| CO 4 | Use Aggregate and group functions to summarize data | 3 |
| CO 5 | Carry out multiple tables using different types of joints | 5 |

Course Code: 19UCP346

Core Course XIII – SOFTWARE LAB 6-LINUX AND JAVA PROGRAMMING

| Upon | completion of this course, the student will be able to: | PSO |
|------|------------------------------------------------------------------------------------------------------------------------|-------|
| CO 1 | Explain operators and expressions, decision making and branching, Decision making and looping | 3 |
| CO 2 | Apply object-oriented concepts in problem solving through java. | 3,4,8 |
| CO 3 | Identify classes, objects, members of class and relationship among them needed for a specific problem | 3,8 |
| CO 4 | Describe Packages of java, multithreaded programming contains synchronization, managing errors and exceptions handling | 4,8 |
| CO 5 | Design and implement applet and event handling mechanisms, graphic programming in Java | 5 |



Core Course XIV - SOFTWARE ENGINEERING

| Upon | completion of this course, the student will be able to: | PSO |
|------|------------------------------------------------------------------------|-----|
| CO 1 | Describe software process, software matrices. | 2 |
| CO 2 | Explain various software lifecycle models. | 7 |
| CO 3 | Analyze software requirements, various software cost estimation models | 2,5 |
| CO 4 | Describe about various design stategies, software quality models | 7 |
| CO 5 | Implement various software testing strategies. | 2 |

Course Code: 19UCP442

Core Course XV - OPERATING SYSTEM

| Upon | completion of this course, the student will be able to: | PSO |
|------|---------------------------------------------------------------------------------------------------------------------------------|-----|
| CO 1 | Describe principles and modules of operating system | 2, |
| CO 2 | Explain the key mechanism in design of operating system modules | 3 |
| CO 3 | Discuss the process management, concurrent processes and threads, memory management, virtual memory concepts, deadlocks | 2 |
| CO 4 | Compare performance of processor scheduling algorithms- produce algorithmic solution to process synchronization problems. | 3 |
| CO 5 | Use modern operating system calls such as Linux process and practise with operating system concept | 3 |

Core Course XVI - DESIGN AND ANALYSIS OF ALGORITHMS

| Upon | completion of this course, the student will be able to: | PSO |
|------|-----------------------------------------------------------------------------------|-------|
| CO 1 | Define the basic concepts of algorithms and analyse the performance of algorithms | 3,8 |
| CO 2 | Discuss various algorithm design techniques for developing algorithms | 3,4,8 |
| CO 3 | Apply important algorithmic design paradigms and methods of analysis | 3 |
| CO 4 | Discuss various searching and sorting and traversal algorithms | 3 |
| CO 5 | Describe NP completeness and identify different NP complete problems | 3,8 |

Course Code: 19UCP444

Core Course XVII - WEB PROGRAMMING USING PHP

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|--------------------------------------|-----|
| CO 1 | Design and create a dynamic website | 3 |
| CO 2 | Describe the hierarchies of oops | 4 |
| CO 3 | Write HTML, JavaScript and PHP codes | 4 |
| CO 4 | Develop web pages using HTML and CSS | 5 |
| CO 5 | | |

Course Code: 19UCP445

Core Course XVIII - SYSTEM SOFTWARE

| Upon | completion of this course, the student will be able to: | PSO |
|------|-----------------------------------------------------------------|-----|
| CO 1 | Differentiate between system software and application software. | 3 |
| CO 2 | Describe the difference between assembler and interpreter | 2 |
| CO 3 | Explain object codes and mnemonic codes | 3,4 |
| CO 4 | Analyse the need for multi passes. | 3,5 |
| CO 5 | Use hardware for linking and relocation | 4 |

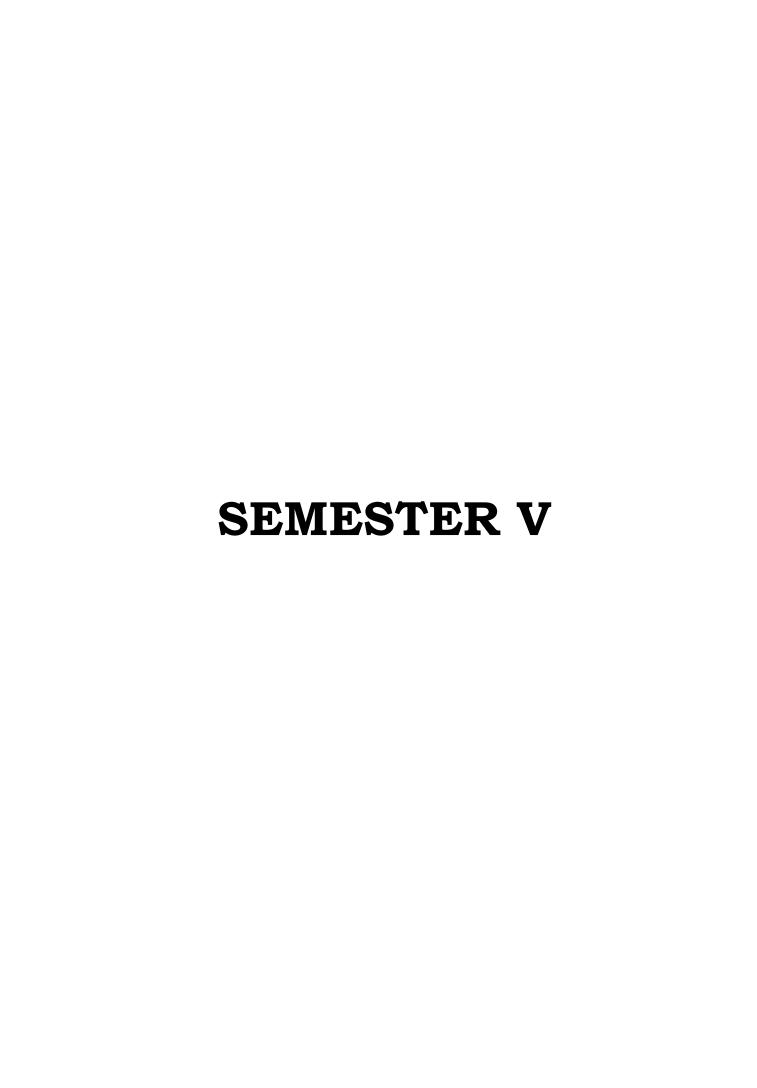
Core Course XIX - SOFTWARE LAB 7-PHP

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|-----------------------------------------------------------------|-----|
| CO 1 | Create graphics in web pages | 3 |
| CO 2 | Create a link, table within a web page | 4,5 |
| CO 3 | Create, validate and publish a website | 4 |
| CO 4 | Create effective scripts using Java Script | 8 |
| CO 5 | Demonstrate the knowledge of introductory programming concepts. | 5 |

Course Code: 19UCP447

Core Course XX - MINI PROJECT

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------|-----|
| CO 1 | Describe the potential research areas in the field of IT | 4 |
| CO 2 | Compare and contrast the several existing solutions for research challenge | 4 |
| CO 3 | Demonstrate an ability to work in teams and manage the conduct of the research study | 5,6 |
| CO 4 | Communicate findings of the study conducted in the preferred domain | 5 |



Core Course XXI - PYTHON PROGRAMMING

| Upon | completion of this course, the student will be able to: | PSO |
|------|------------------------------------------------------------|-------|
| CO 1 | Implement OOP concepts in python. | 6,8 |
| CO 2 | Judge appropriate applications for solving a given problem | 2,5,8 |
| CO 3 | Apply python in the real-world scenarios. | 3,5 |
| CO 4 | Write structured programmes as their own. | 3,5,6 |

Course Code: 19UCP542

Core Course XXII - OBJECT ORIENTED ANALYSIS AND DESIGN

| Upon completion of this course, the student will be able to: | | PSO |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------|
| CO 1 | Create models using UML class notations | 2,4,6,8 |
| CO 2 | Generate OO design of systems in high-level and low-level models of structural organization | 2,3,6 |
| CO 3 | Validate abstract object-based views for generic software systems. | 2,3,4 |
| CO 4 | Evaluate a design for applicability, reasonableness, and relation to other design criteria | 2,8 |
| CO 5 | Analyze and model software specifications. | 2,5 |

Course Code: 19UCP543

Core Course XXIII - C# AND .NET PROGRAMMING

| Upon | completion of this course, the student will be able to: | PSO |
|------|---------------------------------------------------------|-----|
| CO 1 | Describe the .NET framework | 2,4 |
| CO 2 | Discuss C# .NET with the concept of class | 3,6 |
| CO 3 | Explain OOPs concept | 4,8 |
| CO 4 | Examine GUI with windows | 2,7 |
| CO 5 | Implement Software through database | 3,8 |

Course Code: 19UCP551.1

Open Course I - MANAGEMENT INFORMATION SYSTEM

| Upon | completion of this course, the student will be able to: | PSO |
|------|------------------------------------------------------------------------------------------------------------------------------------------|-------|
| CO 1 | Analyze and synthesize business information and systems to facilitate evaluation of strategic alternatives. | 2,4 |
| CO 2 | Describe strategic alternatives to facilitate decision making. | 3,5,6 |
| CO 3 | Evaluate basic concepts and technologies used in the field of management information systems | 2,4,6 |
| CO 4 | Translate the role of information systems in organizations, the strategic management processes, with the implications for the management | 2,4 |
| CO 5 | Justify the role of the ethical, social, and security issues of information systems | 2,5,8 |

Course Code: 19UCP544

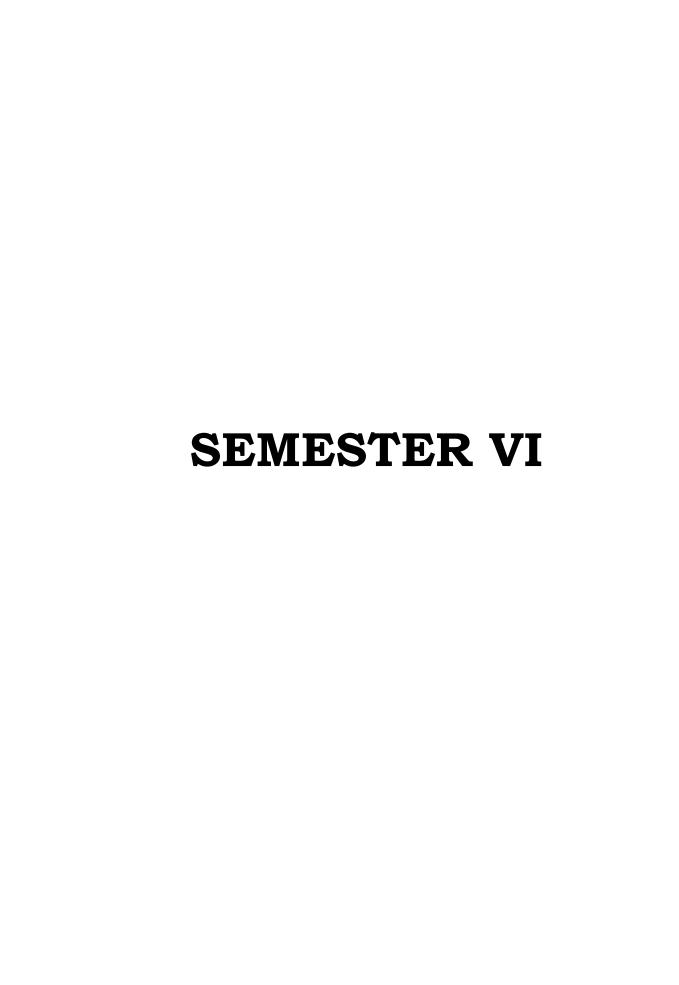
Core Course XXIV - Software Lab 8-PYTHON

| Upon | completion of this course, the student will be able to: | PSO |
|------|--------------------------------------------------------------------------|-------|
| CO 1 | Execute Python programs | 2,6 |
| CO 2 | Use functions for structuring Python programs | 2,3,6 |
| CO 3 | Describe concept of Object Oriented Programming (OOP) applied in Python. | 2,3,8 |
| CO 4 | Compound data using Python lists, tuples, dictionaries | 2,4,5 |
| CO 5 | Compile Python programs with database | 2,4,8 |

Course Code: 19UCP545

Core Course XXV - SOFTWARE LAB 9-C# AND .NET

| Upon | completion of this course, the student will be able to: | PSO |
|------|----------------------------------------------------------------|-----|
| CO 1 | Write simple C# console applications | 4 |
| CO 2 | Explain Object oriented programming | 2,6 |
| CO 3 | Develop windows-based applications | 3,5 |
| CO 4 | Develop different applications using DATAGRID view | 4,8 |
| CO 5 | Describe establishment of database connection for applications | 5 |



Core Course XXVI -INFORMATION SECURITY

| Upon completion of this course, the student will be able to: | | | |
|--------------------------------------------------------------|-----------------------------------------------------------------------|-----|--|
| CO 1 | Identify some of the factors driving the need for network security | 5 | |
| CO 2 | Apply cryptographic encryption techniques | 5 | |
| CO 3 | Visualize the security measures in authentication | 2,3 | |
| CO 4 | Identify traps and malicious softwares and the measures to handle it. | 2,4 | |
| CO 5 | Judge the crimes, laws, and security in IT | 3,6 | |

Course Code: 19UCP642

Core Course XXVII -COMPUTER GRAPHICS

| Upon completion of this course, the student will be able to: | | | |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----|--|
| CO 1 | Explain the basics of computer graphics, different display devices and applications of computer graphics | 2,8 | |
| CO 2 | Describe algorithmic development of graphic primitives | 2,3 | |
| CO 3 | Explain 2 D and 3D transformation on graphic objects | 8 | |
| CO 4 | Describe 2D viewing and different clipping methods | 8 | |
| CO 5 | Elucidate projection, illumination models and animation | 3,8 | |

Course Code: 19UCP643

Core Course XXVIII - INTERNET OF THINGS

| Upon completion of this course, the student will be able to: | | |
|--------------------------------------------------------------|-------------------------------------------------------------------------------|-----|
| CO 1 | Explain IoT network engineering, data analytics and security | 2,6 |
| CO 2 | Describe bigdata analytics | 3 |
| CO 3 | Analyse smart objects and Communication criteria IoT access technologies | 4,6 |
| CO 4 | Discuss generic and web-based protocols through common application protocols. | 2,8 |

Core Course XXIX - SOFTWARE TESTING

| Upon completion of this course, the student will be able to: | | | |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---|--|
| CO 1 | Explain the seven principles of testing | 4 | |
| CO 2 | Investigate the reason for bugs and analyze the principles in software testing to prevent and remove bugs. | 4 | |
| CO 3 | Implement various test processes for quality improvement | 5 | |
| CO 4 | Design test planning. | 4 | |
| CO 5 | Manage the test process | 8 | |

Course Code: 19UCP645

Core Course XXX - MAJOR PROJECT

| Upon completion of this course, the student will be able to: | | | |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------|-----|--|
| CO 1 | Judge potential research areas in the field of IT | 4 | |
| CO 2 | Compare several existing solutions for research challenge | 4 | |
| CO 3 | Demonstrate ability to work in teams and manage the conduct of the research study | 5,6 | |
| CO 4 | Describe the findings of the study conducted in the preferred domain | 5 | |

Course Code: 19UCP661.1

Elective Course I – DATA MINING AND WAREHOUSING

| Upon completion of this course, the student will be able to: | | | |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---|--|
| CO 1 | Demonstrate the importance of data mining and the principles of business intelligence. | 4 | |
| CO 2 | Organize and prepare the data needed for data mining using pre-processing techniques. | 5 | |
| CO 3 | Compare and contrast OLAP and data mining techniques | 8 | |
| CO 4 | Implement the appropriate datamining methods like classification and clustering. | 7 | |
| CO 5 | Implement data mining techniques like clustering, association rule, and decision tree on the real data set. | 7 | |

COURSE - PSO MAPPING

| | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 | PSO6 | PSO7 | PSO8 | PSO9 |
|-------------|------|------|------|------|------|------|------|------|------|
| COURSE CODE | | | | | | | | | |
| 19UEN111.4 | * | | | | | | | | |
| 19UMM131.9 | | * | | * | | | * | | |
| 19UCP121 | | * | | * | * | * | | | |
| 19UCP141 | | * | * | * | * | | | * | |
| 19UCP142 | | | | | | | * | | |
| 19UCP143 | | | * | * | * | * | | | |
| 19UCP144 | | * | | | | * | | | |
| 19UEN211.4 | * | | | | | | | | |
| 19UMM231.9 | | * | | * | | | * | | |
| 19UCP231 | | * | | | | | | * | |
| 19UCP241 | | * | * | * | * | | | * | |
| 19UCP242 | | * | * | * | * | | | * | |
| 19UCP243 | | * | * | * | * | | | * | |
| 19UCP244 | | * | * | * | * | | | * | |
| 19UCP331 | | * | | | | | | * | |
| 19UCP342 | | * | | | | | * | * | |
| 19UCP343 | | | * | * | * | | | * | |
| 19UCP344 | | | * | * | * | | | * | |
| 19UCP345 | | | * | * | * | | | | |
| 19UCP346 | | | * | * | * | | | * | |
| 19UCP441 | | * | | | * | | * | | |
| 19UCP442 | | * | * | | | | | | |
| 19UCP443 | | | * | * | | | | * | |
| 19UCP444 | | | * | * | * | | | * | |
| 19UCP445 | | * | * | * | | | | * | |
| 19UCP446 | | | * | * | * | | | * | |
| 19UCP447 | | | | * | * | * | | | |
| 19UCP541 | | * | * | * | * | * | | * | |
| 19UCP542 | | * | * | * | * | * | | * | |
| 19UCP543 | | * | * | * | * | * | | * | |
| 19UCP551.1 | | * | * | * | * | * | | * | |
| 19UCP544 | | * | * | | * | * | | * | |
| 19UCP545 | | * | * | * | * | * | | * | |
| 19UCP641 | | * | * | * | * | * | | | |
| 19UCP642 | | * | * | | | | | * | |
| 19UCP643 | | * | * | * | | * | | * | |
| 19UCP661.1 | | | | * | * | * | * | * | |
| 19UCP644 | | | | * | * | | | * | |
| 19UCP645 | | | | * | * | * | | | |