

Course Outcomes (COs)

On completion of these courses, the students will be able to:

B.E. (Computer) 1st Year

Course Code - Name	Course Outcomes
<u>3110002</u> English	CO1 Use various forms of vocabulary in varied situations in oral and written communication. CO2 Understand the phonetics and the transcription pattern to learn correct pronunciation. CO3 Comprehend the dynamics of various rules of grammar and check its validation while they speak and write language correctly. CO4 Use grammar effectively to make themselves competent Listener, Speaker, Reader and Writer by exposing to various set of situations. CO5 Write various formal and informal documents of day to day life and professional set up. CO6 Demonstrate the qualities of writing in diverse situation by using the nuances such as conciseness, clarity, accuracy, organization, and coherence.
<u>3110003</u> Programming for Problem Solving	CO-1 Formulate algorithm/flowchart for given arithmetic and logical problem . CO-2 Translate algorithm/flowchart into C program using correct syntax and execute it. CO-3 Write programs using conditional, branching, iteration, and recursion. CO-4 Decompose a problem into function . CO-5 Develop an application using the concepts of array, pointer, structure, and file management to solve engineering and/or scientific problems
<u>3110005</u> Basic Electrical Engineering	CO-1 Apply fundamental electrical laws and circuit theorems to electrical circuits. CO-2 Analyze single phase and three phase AC circuits. CO-3 Describe operating principle and applications of static and rotating electrical machines. CO-4 Comprehend electrical installations, their protection and

	personnel safety
3110006 Basic Mechanical Engineering	CO-1 Discuss the various sources of energy and basic terminology of Mechanical engineering . CO-2 Make calculations for commonly used working fluids i.e. ideal gases and steam . CO-3 Analyze various heat engine cycles and understand construction and working of IC engines . CO-4 Discuss working and applications of steam boilers and various energy conversion systems . CO-5 Discuss various power transmission elements and properties of various engineering materials with their applications
3110012 Workshop/ Manufacturing Practices	CO-1 Understand various manufacturing processes in machine shop and perform basic operations of welding, fitting, smithy and carpentry work a) perform basic operations of welding, fitting, smithy and carpentry work b) Explain various manufacturing processes in machine shop CO-2 Discuss application of plumbing fitting, masonry items and about plastic molding and glass cutting for various engineering application CO-3 Measure different electrical quantities and trouble shoot electrical and electronics appliances. CO-4 Conduct experiments with various kits such as Raspberry and Arduino for embedded system development CO-5 Use basic commands of computer operating systems
3110013 Engineering Graphics & Design	CO-1 Know and understand the conventions and the methods of engineering drawing. CO-2 Interpret engineering drawings using fundamental technical mathematics. CO-3 Construct basic and intermediate geometry and comprehend the theory of projection. CO-4 Improve their visualization skills so that they can apply these skills in developing new products. CO-5 Improve their technical communication skill in the form of communicative drawings. CO-6 Use computer software for engineering drawing.
3110014 Mathematics – I	CO1 To apply differential and integral calculus to improper integrals and to determine applications of definite integral. Apart from some other applications they will have a basic understanding of indeterminate forms, Beta and Gamma functions.

	<p>CO2 To apply the various tests of convergence to sequence, series and the tool of power series and fourier series for learning advanced Engineering Mathematics.</p> <p>CO3 To compute directional derivative, maximum or minimum rate of change and optimum value of functions of several variables.</p> <p>CO4 To compute the areas and volumes using multiple integral techniques.</p> <p>CO 5 To perform matrix computation in a comprehensive manner.</p>
3110015 Mathematics –2	<p>CO1 To apply mathematical tools needed in evaluating vector calculus and their usage like Work, Circulation and Flux.</p> <p>CO 2 To apply the laplace transform as tools which are used to solve differential equations and fourier integral representation.</p> <p>CO 3 To apply effective mathematical tools for the solutions of first order ordinary differential equations.</p> <p>CO4 To apply effective mathematical methods for the solutions of higher order ordinary differential equations.</p> <p>CO5 To use series solution methods and special functions like Bessels' functions.</p>
3110016 Basic Electronics	<p>CO-1 Analyze the general – and special-Purpose diode circuits</p> <p>CO-2 Design biasing circuits for BJT</p> <p>CO-3 Analyze BJT Circuits in small-signal domain</p> <p>CO-4 Analyze basic FET Circuits</p> <p>CO-5 Verify the functionalities of basic digital gates and logic families</p> <p>CO-6 Construct and test circuit using basic electronic devices in a group</p>
3110017 Induction Program	NA
3110018 Physics	<p>CO-1 The student will gain knowledge of basic theoretical and mathematical concept of electronic materials.</p> <p>CO-2 The student will demonstrate understanding of basic principles, properties and applications associated with semiconducting materials.</p> <p>CO-3 The student will demonstrate understanding of basic theory and properties associated with optoelectronic materials.</p> <p>CO-4 The student will gain knowledge of the different measurements techniques to characterize various semiconducting, electrical and opt electrical materials and devices.</p> <p>CO-5 The student will demonstrate understanding of basic theory, properties and applications of Superconductivity.</p>

B.E. (Computer) 3rd Semester

<u>3130004</u> Effective Technical Communication	CO1 Define and discuss dynamics of Verbal and Non Verbal aspects of Communication CO 2 Write various formal documents of technical and professional communication CO 3 Communicate in diverse formal situations taking place in organizations CO4 Illustrate and examine the knowledge of ethical aspects of engineering CO 5 Demonstrate and explain social and professional etiquettes 16% 6 Plan self-development and practice self-assessment
<u>3130006</u> Probability and Statistics	CO-1 understand the terminologies of basic probability, two types of random variables and their probability functions . CO-2 observe and analyze the behavior of various discrete and continuous probability distributions . CO-3 understand the central tendency, correlation and correlation coefficient and also regression . CO-4 apply the statistics for testing the significance of the given large and small sample data by using t- test, F- test and Chi-square test . CO-5 understand the fitting of various curves by method of least square
<u>3130007</u> Indian Constitution	CO-1 Enhance human values , create awareness about law enactment and importance of Consitution . CO-2 To Understand the Fundamental Rights and Fundamental Duties of the Indian Citizen to instill morality, social values, honesty, dignity of life and their social Responsibilities. CO-3 Create Awareness of their Surroundings, Society, Social problems and their suitable solutions while keeping rights and duties of the citizen keeping in mind. CO-4 Understand distribution of powers and functions of Local Self Government. CO-5 Understand the National Emergency, Financial Emergency and their impact on Economy of the country.

<p><u>3130008</u> Design Engineering - I A</p>	<p>CO1: To expose students to the basic process and framework of Design Thinking. CO2: Study about relevant tools & techniques for Creativity & Innovation.</p>
<p><u>3130702</u> Data Structures</p>	<p>CO-1 Define and classify various data structures, storage structures and common operations on them CO-2 Create various linear data structures with their representation and perform different operations on them CO-3 Create various nonlinear data structures with their representation and perform different operations on them CO-4 Apply various searching sorting techniques on data set CO-5 Solve the given a problem using an appropriate data structure to achieve optimal performance and compare its performance with other possible data structures</p>
<p><u>3130703</u> Database Management Systems</p>	<p>CO-1 Recognize the various elements of Database Management Systems CO-2 Given a problem statement, identify the entities and their relations and draw an E-R diagram and design database applying normalization CO-3 Solve the given problem using Relational Algebra, Relational Calculus, SQL and PL/SQL CO-4 Apply and relate the concepts of transaction, concurrency control, recovery and security in database CO-5 Recognize the purpose of query processing, optimization and demonstrate the SQL query evaluation</p>

<p><u>3130704</u> Digital Fundamentals</p>	<p>CO-1 Solve the given problem using fundamentals of Number systems and Boolean algebra</p> <p>CO-2 Analyze working of logic families and logic gates and design the simple circuits using various gates for a given problem</p> <p>CO-3 Design and implement Combinational and Sequential logic circuits and verify its working</p> <p>CO-4 Examine the process of Analog to Digital conversion and Digital to Analog conversion</p> <p>CO-5 Implement PLDs for the given logical problem</p>
<p>3CE01- SOFTWARE</p>	<p>CO1: Use knowledge of HTML and CSS code and an HTML editor to create personal and/or business websites following current professional and/or industry standards.</p> <p>CO2: Use critical thinking skills to design and create websites.</p> <p>CO3: Use a stand-alone FTP program to upload files to a web server.</p> <p>CO4: Be prepared to pursue future courses in website development and design.</p>
<p>3CE02- SEMINAR</p>	<p>CO1: To expose students to the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions.</p> <p>CO2: To set the stage for future recruitment by potential employers.</p> <p>CO3: Student can summarize multiple points of view in order to draw conclusions.</p> <p>CO4: Demonstrate active verbal and non-verbal skills.</p> <p>CO5: Better understand the role that effective presentations have in public/professional contexts and gain experience in formal/ informal presentation.</p> <p>CO6: Develop audience-cantered presentations meeting concrete professional objectives and integrating ethical and legal visual aids.</p>

3CE04- GATE CLASSES	<p>CO1: Improve the analytical, quantitative as well as qualitative aspects of the subjects.</p> <p>CO2: Understand and develop the basic concepts of each subject including important definitions, equations, derivations, theorems, laws in every subject. CO3: Provide fundamental knowledge in all the domains of Computer Engineering</p> <p>CO4: Improve the ability to recall, comprehension, application, analyze and synthesize through problem solving</p>
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B.E. (Computer) 4th Semester

<p>3140005</p> <p>Design Engineering 1 B</p>	<p>CO1: To expose students to the basic process and framework of Design Thinking.</p> <p>CO2: Study about relevant tools & techniques for Creativity & Innovation.</p>
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<p><u>3140702</u> Operating System</p>	<p>CO-1 Analyze the structure of OS and basic architectural components involved in OS design</p> <p>CO-2 Compare and contrast various CPU scheduling algorithms.</p> <p>CO-3 Evaluate the requirements for the process synchronization and co-ordination in contemporary operating system.</p> <p>CO-4 Analyze various algorithms for memory management, I/O management and security aspects of operating system.</p> <p>CO-5 Write shell scripts in Unix/Linux O.S and write simple programs using kernel system calls. Also understand virtualization concept.</p>
<p><u>3140705</u> Object Oriented Programming -I</p>	<p>CO-1 Use various Java constructs, features and libraries for simple problems.</p> <p>CO-2 Demonstrate how to define and use classes, interfaces, create objects and methods, how to override and overload methods, compile and execute programs.</p> <p>CO-3 Write a program using exception handling, multithreading with synchronization.</p> <p>CO-4 Write a program using Files, binary I/O, collection Frameworks for a given problem.</p> <p>CO-5 Design and develop GUI based applications in a group using modern tools and frameworks.</p>
<p><u>3140707</u> Computer Organization & Architecture</p>	<p>CO-1 Identify and explain the basic structure and functional units of a digital computer.</p> <p>CO-2 Write assembly language programs and identify the role and working of various functional units of a computer for executing an instructions.</p> <p>CO-3 Design processing unit using the concepts of ALU and control logic design.</p> <p>CO-4 Design circuits for interfacing memory and I/O with processor.</p> <p>CO-5 Comprehend the features and performance parameters of different types of computer architectures.</p>
<p><u>3140708</u> Discrete Mathematics</p>	<p>CO1 Understand the basic principles of sets and operations in sets and apply counting principles to determine probabilities, domain and range of a function, identify one-to- one functions, perform the composition of functions and apply the properties of functions to application problems.</p> <p>CO2 Write an argument using logical notation and determine if the argument is or is not valid. To simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic. To express a logic sentence in</p>

	<p>terms of predicates, quantifiers, and logical connectives.</p> <p>CO3 Apply relations and to determine their properties. Be familiar with recurrence relations</p> <p>CO 4 Use the properties of algebraic structures.</p> <p>CO 5 Interpret different traversal methods for trees and graphs. Model problems in Computer Science using graphs and trees.</p>
2140702- OPERATING SYSTEM	<p>CO1: Analyzing the working of an operating system and its components. CO2: Defining and analyzing the synchronization process.</p> <p>CO3: Identifying the working methodology of multithreaded applications.</p> <p>CO4: Determining the reasons of deadlocks, and their remedial measures in an operating system.</p> <p>CO5: Learning the management of different type of memories and I/O devices in the computer system.</p> <p>CO6: Comparing and analyzing different file systems being used in different operating systems, different security issues and shell programming in UNIX.</p>
<u>3140709</u> Principles of Economics and Management	<p>CO-1 Analyze how elasticity affects revenue.</p> <p>CO-2 Relate production function and cost function.</p> <p>CO-3 Analyze the optimal quantity and pricing decisions of firms in different market structures (perfect competition, monopoly, monopolistic competition) to achieve profit maximization.</p> <p>CO-4 Describe the basic principles of management: planning, organizing, controlling, and directing</p> <p>CO-5 Analyze ethical dilemmas faced by business and managers</p>
4CE01- SOFTWARE	<p>CO1: Create PHP scripts that use object-oriented PHP. CO2: Implement business logic within the database.</p> <p>CO3: Use stored procedures and triggers, are secure, portable and scalable.</p> <p>CO4: Create and deploy a portable web-based system.</p> <p>CO5: Be prepared to pursue future courses in website development and design.</p>

4CE02- SEMINAR	<p>CO1: To expose students to the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions.</p> <p>CO2: To set the stage for future recruitment by potential employers. CO3: Student can summarize multiple points of view in order to draw conclusions.</p> <p>CO4: Demonstrate active verbal and non-verbal skills.</p> <p>CO5: Better understand the role that effective presentations have in public/professional contexts and gain experience in formal/ informal presentation.</p>
4CE04- GATE CLASSES	<p>CO1: Improve the analytical, quantitative as well as qualitative aspects of the subjects.</p> <p>CO2: Understand and develop the basic concepts of each subject including important definitions, equations, derivations, theorems, laws in every subject.</p> <p>CO3: Provide fundamental knowledge in all the domains of Computer Engineering.</p> <p>CO4: Improve the ability to recall, comprehension, application, analyze and synthesize through problem solving.</p>

B.E. (Computer) 5th Semester

2150002- CYBER SECURITY	CO: student should understand cyber-attack, types of cybercrimes, cyber laws and also how to protect them self and ultimately society from such attacks.
2150003- DISASTER MANAGEMENT	CO1: Understand disasters, disaster preparedness and mitigation measures. CO2: Understand role of IT, remote sensing, GIS and GPS in risk reduction. CO3: Understand disaster management acts and guidelines along with role of various stack holders during disasters.
2150703- ANALYSIS AND DESIGN OF ALGORITHMS	CO1: Analyze the asymptotic performance of algorithms. CO2: Derive and solve recurrences describing the performance of divide-and-conquer algorithms. CO3: Find optimal solution by applying various methods. CO4: Apply pattern matching algorithms to find particular pattern. CO5: Differentiate polynomial and nonpolynomial problems. CO6: Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate.
2150704- OBJECT ORIENTED PROGRAMMING USING JAVA	CO1: Understand object oriented programming concepts and implement in java. CO2: Comprehend building blocks of OOPs language, inheritance, package and interfaces. CO3: Identify exception handling methods. CO4: Implement multithreading in object oriented programs. CO5: Prepare UML diagrams for software system.
2150707- MICROPROCESSOR AND INTERFACING	CO1: List and specify the various features of microprocessor, memory and I/O devices including concepts of system bus. CO2: Identify the various elements of 8085 microprocessor architecture, its bus organization including control signals. CO3: List the pin functions of the 8085 microprocessor. CO4: Describe the 8085 processor addressing modes, instruction classification and function of each instruction and write the assembly language programs using 8085 instructions. CO5: Explain the concepts of memory and I/O interfacing with 8085 processor with Programmable devices. CO6: List and describe the features of advance microprocessor.
2150708- SYSTEM PROGRAMMING	CO1: To understand the execution process of HLL programs. CO2: To understand the working of scanners and parser. CO3: To understand the basic design of various system software. CO4: To implement various system software.
2150001 - Design Engineering - II A	CO: To validate the learning from the understanding Design Thinking course, by translating the concepts into exercises. In this module, students will work upon community based projects to validate their learning of Design Thinking process.

5CE01- SOFTWARE	CO1: Create PHP scripts that use object-oriented PHP. CO2: Implement business logic within the database. CO3: Use stored procedures and triggers, are secure, portable and scalable. CO4: Create and deploy a portable web-based system. CO5: Be prepared to pursue future courses in website development and design. CO4: Be prepared to pursue future courses in website development and design.
5CE02- SEMINAR	CO1: To expose students to the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions. CO2: To set the stage for future recruitment by potential employers. CO3: Student can summarize multiple points of view in order to draw conclusions. CO4: Demonstrate active verbal and non-verbal skills. CO5: Better understand the role that effective presentations have in public/professional contexts and gain experience in formal/ informal presentation.
5CE04- GATE CLASSES	CO1: Improve the analytical, quantitative as well as qualitative aspects of the subjects. CO2: Understand and develop the basic concepts of each subject including important definitions, equations, derivations, theorems, laws in every subject. CO3: Provide fundamental knowledge in all the domains of Computer Engineering . CO4: Improve the ability to recall, comprehension, application, analyze and synthesize through problem solving.

B.E. (Computer) 6th Semester

2160001- Design Engineering – II B	CO: To validate the learning from the understanding Design Thinking course by translating the concepts into exercises. In this module, student will continue their work from 5th semester on Community based project and complete the Design Thinking cycle with emphasis on product development, detail design, prototyping and validation of the solutions in real environment.
2160703- Computer Graphics	CO1: Students will have an appreciation of the history and evolution of computer graphics, both hardware and software. Assessed by written homework assignment. CO2: Students will have an understanding of 2D graphics and algorithms including: line drawing, polygon filling, clipping, and transformations. They will be able to implement these. Assessed by tests and programming assignments. CO3: Students will understand the concepts of and techniques used in 3D computer graphics, including viewing transformations, hierarchical modeling, color, lighting and texture mapping. Students will be exposed to current computer graphics research areas. Assessed by tests, homework and programming assignments. CO4: Students will be able to use a current graphics API (OpenGL). Assessed by programming assignments. CO5: Students will be introduced to algorithms and techniques fundamental to 3D computer graphics and will understand the relationship between the 2D and 3D versions of such algorithms. Students will be able to reason about and apply these algorithms and techniques in new situations. Assessed by tests and programming assignments.
2160702- INFORMATION SECURITY	CO1: How you select appropriate techniques to tackle and solve problems in the discipline of information security management. CO2: Why security and its management are important for any modern organization. CO3: How an information security management system should be planned, Documented, implemented and improved, according to the BSI standard on information security management.
2160701- SOFTWARE ENGINEERING	CO1: The ability to analyze, design, verify, validate, implement, apply, and maintain software systems. CO2: The ability to appropriately apply discrete mathematics, probability and statistics and relevant topics in computer science and supporting disciplines to complex software systems. CO3: The ability to work in one or more significant application domains CO4: The ability to manage the development of software systems.

2160704- THEORY OF COMPUTATION	CO1: Have a good knowledge of formal computation and its relationship to languages. CO2: Be able to classify languages into their types. CO3: Be able to understand formal reasoning about languages.
2160704- EMBEDED AND VLSI DESIGN	CO1: Will learn various peripheral components. CO2: Use AVR Programming to interface various peripherals. CO3: Able to visualize the design of an embedded system to unified modeling language. CO4: Able to analyze and document various development cycle for the embedded system.
2160705- WEB APPLICATION DEVELOPMENT	CO1: Installing and configuring a web server.. CO2: Writing dynamic web pages, accessing data bases and using web services CO3: Applying security concepts to web servers. CO4: Designing and implementing web applications.
2160707 - ADVANCE JAVA TECHNOLOGY	CO1: Design/Develop Program. CO2: Develop appropriate data model and database scheme. CO3: Create and test prototypes. CO4: Develop Structure. CO5: Identify major subsystems and interfaces. CO6: Validate design scheme and models. CO7: Implement Program. CO8: Write code. CO9: Perform unit testing. CO10: Integrate subsystems. CO11: Test and Validate Program. CO12: Develop test procedures.
2160710 – DISTRIBUTED OPERATING SYSTEM	CO1: List the principles of distributed systems and describe the problems and challenges associated with these principles. CO2: Understand Distributed Computing techniques, Synchronous and Processes. CO3: Apply Shared Data access and Files concepts. CO4: Design a distributed system that fulfills requirements with regards to key distributed systems properties. CO5: Understand Distributed File Systems and Distributed Shared Memory. CO6: Apply Distributed web-based system. CO7: Understand the importance of security in distributed systems.

2160711 – NET TECHNOLOGY	CO1: Use .net framework architecture, various tools, and Validation techniques, use of different templates available in Visual Studio, Implementation and testing strategies in real time applications. CO2: Use advanced concepts related to Web Services, WCF, and WPF in project development.
6CE01- SOFTWARE	CO1: Create Android applications. CO2: Implement Android applications with different layouts. CO3: Create Android apps using different views. CO4: Create Android apps which uses SQLite database.
6CE02- SEMINAR	CO1: To expose students to the 'real' working environment and get acquainted with the organization structure, business operations and administrative functions. CO2: To set the stage for future recruitment by potential employers. CO3: Student can summarize multiple points of view in order to draw conclusions. CO4: Demonstrate active verbal and non-verbal skills. CO5: Better understand the role that effective presentations have in public/professional contexts and gain experience in formal/ informal presentation.
6CE04- GATE CLASSES	CO1: Improve the analytical, quantitative as well as qualitative aspects of the subjects. CO2: Understand and develop the basic concepts of each subject including important definitions, equations, derivations, theorems, laws in every subject. CO3: Provide fundamental knowledge in all the domains of Computer Engineering. CO4: Improve the ability to recall, comprehension, application, analyze and synthesize through problem solving.

B.E. (Computer) 7th Semester

2170701- COMPILER DESIGN	CO1: Learn how a compiler works. CO2: Know about the powerful compiler generation tools, which are useful to the other non-compiler applications. CO3: Learn how to write programs that execute faster. CO4: Gain teamwork experience working on a large, complex software project. CO5: Realize that computing science theory can be used as the basis for real applications.
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2170710- WIRELESS COMMUNICATION AND MOBILE PROGRAMMING	CO1: Describe the basic concepts and principles in mobile computing. CO2: Understand the concept of Wireless LANs, PAN, Mobile Networks, and Sensor Networks. CO3: Explain the structure and components for Mobile IP and Mobility Management. CO4: Understand positioning techniques and location-based services and applications. CO5: Describe the important issues and concerns on security and privacy.
2170712- IMAGE PROCESSING	CO1: Understand the basic image enhancement techniques in spatial & frequency domains. CO2: Understand the various kind of noise present in the image and how to restore the noisy image. CO3: Understand the basic multi-resolution techniques and segmentation methods. CO4: To apply these concepts for image handling in various fields.
2170713- SERVICE ORIENTED COMPUTING	CO1: To understand the principles of service oriented architecture. CO2: To understand and describe the standards & technologies of modern web services implementations. CO3: To properly use market-leading development tools to create and consume web services. CO4: To analyze and select the appropriate framework components in the creation of web service solutions. CO5: To apply object-oriented programming principles to the creation of web service solutions. CO6: To identify the requirements of a medium-difficulty programming task, and create software that meets the requirements.
2170714- DISTRIBUTED DBMS	CO1: Understand what Distributed DBMS is. CO2: Understand various architectures of DDBMS. CO3: Apply various fragmentation techniques given a problem. CO4: Understand and calculate the cost of enforcing semantic integrity control. CO5: Understand the steps of query processing. CO6: How optimization techniques are applies to Distributed Database. CO7: Learn and understand various Query Optimization Algorithms. CO8: Understand Transaction Management & Compare various approaches to concurrency control in Distributed database. CO9: Understand various algorithms and techniques for deadlock and recovery in Distributed database.
2170715- DATA MINING AND BUSINESS INTELLIGENCE	CO1: Students will be able to use mining tool. CO2: Students are able to perform various data warehouse related exercise.

B.E. (Computer) 8th Semester

2180703- ARTIFICIAL INTELLIGENCE	CO1: Understand various search methods. CO2: Use various knowledge representation methods. CO3: Understand various Game Playing techniques. CO4: Use Prolog Programming language using predicate logic
2180709- IOT AND APPLICATIONS	CO1: Understand the vision of IoT from a global context. CO2: Understand the application of IoT. CO3: Determine the Market perspective of IoT. CO4: Use of Devices, Gateways and Data Management in IoT. CO5: Building state of the art architecture in IoT. CO6: Application of IoT in Industrial and Commercial Building Automation and Real World Design Constraints.
2180711- PYTHON PROGRAMMING	CO1: To develop proficiency in creating based applications using the Python Programming Language. CO2: To be able to understand the various data structures available in Python programming language and apply them in solving computational problems. CO3: To be able to draw various kinds of plots using PyLab. CO4: To be able to do text filtering with regular expressions in Python. CO5: To be able to create socket applications in Python. CO6: To be able to create GUI applications in Python.
2180712- CLOUD INFRASTRUCTURE AND SERVICES	CO1: To explain the core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing. CO2: To apply the fundamental concepts in datacenters to understand the tradeoffs in power, efficiency and cost by Load balancing approach. CO3: To discuss system virtualization and outline its role in enabling the cloud computing system model. CO4: To illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems such as Amazon S3 and HDFS. CO5: To analyze various cloud programming models and apply them to solve problems on the cloud. CO6: To understand various management and other distinguish services of AWS.
2180713- WEB DATA MANAGEMENT	CO1: To understand the overall vision of the Semantic Web. CO2: To analyze the current technology stack (URIs, XML, RDF/S, OWL). CO3: To understand how one could use these technologies for building something useful. CO4: To define and test ontology. CO5: To define schema mappings. CO6: To install and use tools for semantic data management.

<p>2180714- iOS PROGRAMMING</p>	<p>CO1: Design iphone and ipad application. CO2: Develop iphone and ipad application. CO3: Upload ios application on app store.</p>
<p>2180715- ANDROID PROGRAMMING</p>	<p>CO1: This course teaches final-year Computer Science students how to develop Android apps. CO2: To be able to understand the process of developing software for the mobile. CO3: To be able to create mobile applications on the Android Platform. CO4: To be able to create mobile applications involving data storage in SQLite database.</p>