Name of School	**School of Computer Science & Engineering**
Name of the Department	Computer Science & Engineering
Name of the Programme	B. Tech.

Program Specific Outcomes (PSO)	
PSO1	Graduates shall be analyse problems, design, and develop technical solutions for the real-world problems.
PSO2	Graduates shall excel in professional career, higher education, and research.
PSO3	Graduates shall have professional ethics, team spirit, life-long learning, and leadership skills.

Program Outcomes	
PO1	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions using first principles mathematics, natural sciences and engineering sciences.
PO3	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	**The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and teamwork:** Function effectively as an individual, and as a member or leader in

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	diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context to technological change.

Course Outcomes

Sr No	Semester	Course Code	Course Name	Course Outcomes Statement
1	I	17YHS111	English Communication Skill (HSS)	1. To acquire basic language skills (LSRW) to communicate with speakers of English language.
				2. To develop their intellectual, personal and professional abilities.
				3. To develop skill to communicate fluently.
				4. To enhance team building and time management skills.
				5. To inculcate employability skills among students.
2	I	17YBS101/201	Applied Physics	1. Appreciate various material properties which are used in engineering applications and devices.
				2. Explain the production and various applications of ultrasonic waves.
				3. Know the nature of light with the help of interference, diffraction and polarization.
				4. Understand construction and working of LASER.
				5. Realize properties and applications of materials in nano regime.
3	I	17YBS102/202	Applied Chemistry	1. Analyze the problems regarding water system, Categorize and apply suitable waste water treatment techniques by various methods.
				2. Analyze the various analytical

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				methods used in engineering field & it's applications towards several fields.
				3. Able to understand the structure of polymer materials & it's uses for advanced engineering applications.
				4. Analyze various engineering problems related corrosion and metal finishing in achieving a practical solution.
				5. Analyze the various structure, Classification, properties & packing in solids (fcc, bcc and hcp lattices)
4	I	17YBS103	Algebra and Differential Calculus (ADC)	1. Understand a new concept to check the consistency of system of linear equations.
				2. Solve algebraic equations with use of De-Moivre's Theorem .
				3. Learn the various methods of expansion of functions and their applicability.
				4. Differentiate between the ordinary and partial derivatives.
				5. Understand how to examine the extreme values of functions of two or more variables with applications problem.
5	I	17YES101	Environmental Studies	1. Understand surrounding environmental features & its principles.
				2. Take proper precautions & apply suitable measures necessary for the benefit of mankind.
				3. Understand different types of ecosystems, biodiversity & its conservation.
				4. Identify different pollution problems & its measures for the societal benefit.
				5. Understand problem of population explosion & health related issues thereby applying necessary measures
6	I	17YES111	Engineering	1. Plan the layout of the drawing sheet

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			Graphics and CADD	and use appropriate line types, dimensions, lettering, and various drawing conventions 2. Read and interpret the given data for converting in to projections 3. Convert given orthographic views into isometric views and vice versa 4. Use computer aided drafting for engineering communication.
7	I	17YES112	Workshop Practices	1. Use measuring instruments for marking and sizing work pieces. 2. Plan, handle and use different hand tools effectively for required application. 3. Select appropriate forging process and joining process for manufacturing articles. 4. Select appropriate sheet metal working for manufacturing articles and to develop a domestic pipe line 5. Cost Estimate for a manufacturing a product: Material Cost, Production cost, and Labour Cost.
8	II	17YHS211	Technical Communication (HSS)	1. Students will acquire communication strategies to participate in group and class discussions. 2. Students will be able to utilize digital literacy tools to develop listening skills. 3. Students will be able use a variety of accurate sentence structures. 4. Students will be able to comprehend, analyze and interpret texts written in English. 5. Students will use grammatical structures appropriately & deliver an effective oral presentation.
9	II	17YBS203	Integral Calculus (IC)	1. Solve ordinary differential equations of first order and first degree. 2. Construct differential equations of certain physical situations and solve them.

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				3. Trace approximate shape of plane curves without plotting large number of points and find expansion of functions, evaluate limits of indeterminate forms.
				4. Understand concept of double integration and use it to find area and mass.
				5. Understand concept of triple integration and use it to find volume and mass.
10	II	17YES206	Fundamentals of Computing	1. Understand types of open source softwares and their use.
				2. Learn different computer hardware components and its working.
				3. Differentiate between various programming languages.
				4. Apply logic to solve real world problems.
				5. Write C programs using various C language constructs such as functions, arrays and strings.
11	II	17YES201	Engineering Mechanics	1. Apply fundamental concepts of kinematics and kinetics of particles to the analysis of simple, practical problems.
				2. Understand and be able to apply Newton's laws of motion.
				3. Draw free body diagrams and determine the resultant of forces and/or moments.
				4. Understand and be able to apply other basic dynamics concepts - Work-Energy Principle, Impulse-Momentum principle and the coefficient of restitution.
				5. Apply basic knowledge of maths and physics to solve real-world problems.
12	II	17YES207	Fundamental of Electrical & Electronics Engineering	1. Analyze circuit systems using direct application of Kirchoff's Current and Voltage Laws along with Ohm's Law.
				2. Analyze Single Phase AC Circuits.

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				3. Apply basic concept of electromagnetic induction in electrical machine.
				4. Understand and apply properties of logic gates in combinational and sequential circuit. CO5 Uunderstand basic semiconductor physics.
				5. Uunderstand basic semiconductor physics.
13	III	17YBS304	Discrete Mathematics and Logic	1. Solve real world problems logically using appropriate set, function, and relation models and interpret the associated operations and terminologies in context.
				2. Analyze and synthesize the real world problems using discrete mathematics.
				3. Understand and implement graphs and paths concepts to real world problems
				4. To implement and understand tree structure.
				5. To implement algebraic structures with binary operation.
14	III	17YCS301	Digital Design and Computer Organization	1. Understand the structure, function and characteristics of computer systems and Number System.
				2. Understand the various computer systems and logic gates.
				3. Understand combinational and sequential logic circuits.
				4. Understand memory concept.
				5. Understand I/O devices and instruction sets.
15	III	17YCS302	Object Oriented Programming	1. Apply standards and principles to write executable code.
				2. Take a problem and develop the structures to represent the solution in the form of objects and the algorithms.
				3. Check the program and, if necessary, find errors in the program and rectify them.

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				4. Develop interactive programs using concept of Memory Management and Pointers.
				5. Build various applications using exceptions and I/O streams.
16	III	17YCS303	Data Structures	1. Get a good understanding of applications of Data Structures.
				2. Develop application using data structures.
				3. Handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
				4. Decide the appropriate data type and data structure for a given problem.
				5. Select the best algorithm to solve a problem by considering various problem characteristics, such as the data size, the type of operations, etc.
17	III	17YCS304	Computer Graphics	1. Apply mathematics and logic to develop Computer programs for elementary graphic operations
				2. Develop scientific and strategic approach to solve complex problems in the domain of Computer Graphics
				3. Develop the competency to understand the concepts related to Computer Vision and Virtual reality
				4. Able to implement all concepts related to segments and clipping
				5. Able to apply Curve and fractal concepts in real world applications.
18	III	17YCS311	Object Oriented Programming & Lab	1. Understand Fundamental concept of Object oriented programing
				2. Understand Abstraction, Encapsulation, Inheritance and Polymorphism
				3. Understand Concept of real work problem solving using OOP
				4. Understand to provide solutions to complex real world problems
19	III	17YCS312	Data Structure Lab	1. Perform different operation on different data structure using c.
				2. Understand the basic concepts of

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				searching and sorting.
				3. Perform Linked List and Array operations
				4. Apply programming logic on stack and queue.
20	III	17YCT313	Introduction to Public Speaking	1. Better communication skills.
				2. Better ability to represent among group of professionals.
				3. Learn how to perform in interviews.
21	III	17YCS314	Industry Internship	1. An ability to work in actual working environment.
				2. An ability to utilize technical resources.
				3. An ability to write technical documents and give oral presentations related to the work completed.
22	IV	17YBS401	Modern Mathematics	1. Solve linear differential equation using appropriate techniques.
				2. Apply statistical methods like correlation, regression analysis and probability theory for analysis and prediction of a given data as applied to machine intelligence.
				3. Apply probability theory for analysis and prediction of a given data as applied to machine intelligence
				4. Solve Linear Programming Problems
				5. Understand and Implement Duality Problems
23	IV	17YCS401	Object Oriented Programming in Java	1. Implement Object Oriented Programming Concepts.
				2. To learn and apply the concepts of Applet and JDBC in a real world environment.
				3. Implement the concepts of Exception handling, Arrays and Strings in JAVA.
				4. Implement the concepts of Multithreading in JAVA
				5. Develop GUI based application and connect it with database

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				using JDBC
24	IV	17YCS402	Database Management System	1. Understand the architecture and functioning of database management systems 2. Construct an ER model and derive the relational schemas from the model. 3. Analyze and apply the principles and practices of good database design. 4. Apply data normalization in a database application 5. Execute efficient SQL queries to retrieve and manipulate data.
25	IV	17YCS403	Microprocessor & Interfacing	1. Discuss internal architecture and pin functions of 8085 2. Discuss internal architecture and pin functions of 8086 3. Develop and execute assembly language program for 8086 4. Explain and select appropriate microprocessor to meet specific requirements 5. Understand memory and I/O interfacing with 8085 processor with Programmable devices
26	IV	17YHS401	Principles of Managements	1. Understand basics of Management approaches 2. Analyze and apply planning in the management practices 3. Understand and analyze the organization structure. 4. Understand and apply the organization Flow Management. 5. Learn and apply controlling and reporting structure of the organization.
27	IV	17YCS411	Object Oriented Programming in java Lab	1. Implement fundamental concepts of OOP such as data abstraction, encapsulation, inheritance, dynamic binding and polymorphism etc in java. 2. Impart the language features of Java and its Application Programming Interfaces(API).

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				3. Design & Create GUI based application development. 4. Implement JDBC connectivity with MYSQL on various applications. 5. Develop GUI application using JavaFX
28	IV	17YCS412	Database Management System Lab	1. Apply the basic concepts of Database Systems and Applications. 2. Construct queries using SQL in database creation and interaction. 3. Design a commercial relational database system (Oracle, MySQL) by writing SQL using the system. 4. Analyze and Select storage and recovery techniques of database systems. 5. Implement aggregation and indexing with MongoDB.
29	IV	17YFE411	English Communication and Soft Skills	1. Acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills. 2. Write formal letters effectively. 3. Prepare, organize and deliver oral presentation 4. Develop reading speed and build academic vocabulary 5. Demonstrate behavior and attitudes appropriate to university environment.
30	IV	17YFF401	Foreign Language French	1. Greet others, say good bye and also frame and answer W-questions about themselves and ask these questions to others. 2. Talk/write about their friends and hobbies. 3. Talk/write about the city they live in, the important buidings. 4. Talk/ write about the food habits and know the accusative case.. 5. Talk/write about their family.

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31	IV	17YFG402	Foreign Language German	1. Greet others, say good bye and also frame and answer W-questions about themselves and ask these questions to others
				2. Talk/write about their friends and hobbies.
				3. Talk/write about the city they live in, the important buidings.
				4. Talk write about the food habits and know the accusative case..
				5. Talk/write about their family.
32	V	17YCS501	Formal Languages and Automata theory	1. Master regular languages and finite automata.
				2. Master context - free languages, push - down automata, and Turing cognizable languages.
				3. Be exposed to a broad overview of the theoretical foundations of computer science
				4. Be familiar with thinking analytically and intuitively for problem - solving situations in related areas of theory
				5. Able to implement NP hard and NP Complete problems.
33	V	17YCS502	Operating System	1. Apply optimization techniques for the improvement of system performance.
				2. Ability to understand the synchronous and asynchronous communication mechanisms in their respective OS.
				3. Learn about minimization of turnaround time, waiting time and response time and also maximization of throughput with keeping CPU as busy as possible.
				4. Ability to compare the different OS
				5. Apply optimization techniques for the improvement of system performance.
34	V	17YCS503	Internet & Web Programming	1. Master the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks.

				2. Be familiar with wireless networking concepts.
				3. Be familiar with contemporary issues in networking technologies.
				4. Be familiar with network tools and network programming
				5. Apply the concepts in PHP
				6. To master the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks.
35	V	17YCS504	Python Programming	1. Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements..
				2. Express proficiency in the handling of strings and functions.
				3. Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets..
				4. Identify the commonly used operations involving file systems and regular expressions
				5. Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python
36	V	17YCS505	Computer Network	1. Master the terminology and concepts of the OSI reference model and the TCP IP reference Model
				2. Master the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks.
				3. Be familiar with wireless networking concepts.
				4. Be familiar with contemporary issues in networking technologies
				5. Be familiar with network tools and network programming

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37	V	17YCS511	Internet and Web Programming Lab	1. To enable the students to have a hands on practical exposure to Linux Red Hat Enterprise and make them prepared for the RHCA Certification
38	V	17YCS512	Python Programming Lab	1. Students will be learning about two different and popular scripting languages – Python and Ruby on Rail
39	V	17YCS513	Industry Internship	1. An ability to work in actual working environment 2. An ability to utilize technical resources. 3. An ability to write technical documents and give oral presentations related to the work completed
40	VI	17YCS601	Design and Analysis of Algorithm	1. Understand and analyse algorithms using asymptotic analysis. 2. Apply dynamic and greedy algorithm for solving the given problem 3. Understand and apply various graph-based algorithms 4. Apply the backtracking and branch-bound algorithmic strategies in the real life problem 5. Understand randomized and quantum algorithms
41	VI	17YCS602	Software Engineering & Project Management	1. Describe various Software process models and use them in a real-world environment. 2. Explain and apply Agile software project development. 3. Implement Requirement Engineering Process in software development. 4. Analyze the importance of Project Planning in software development. 5. Estimate efforts in the software project monitoring and control
42	VI	17YCS603	Compiler Design	1. To learn independently modern software development tools and creates novel solutions for language 2. Processing applications. 3. To design and implement assemblers and macro processors.

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				4. To use tool LEX for generation of Lexical Analyzer and To use YACC tool for generation of syntax analyzer.
				5. To generate output for all the phases of compiler & apply code optimization in the compilation process.
43	VI	17YCS604	Android Programming	1. Understand fundamentals of Android Programming and development life cycle.
				2. Create android applications with background activities.
				3. Create android applications using different sensors.
				4. Create android applications using different sensors.
				5. Analyze the performance of android applications
44	VI	17YCS611	Compiler Design Lab	1. Understand the major concepts of compiler design.
				2. Implement the different phases of a compiler
				3. Use compiler tools and techniques.
				4. Evaluate the performance of compilers.
				5. Design and implement your own compiler
45	VI	17YCS612	Android Programming Laboratory	1. Install and configure Android application development tools
				2. Design and develop user interfaces for the Android platform
				3. Apply Java programming concepts to Android application development
				4. Design and implement databases and content providers.
				5. Develop secure Android apps
46	VI	17YCS613	Seminars	1. Understand the latest technical issues and challenges
				2. Analyze the issues and challenges in the current research domain.
				3. Understand the

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				research issues in the emerging technology
				4. Discuss findings related to the past discovery
				5. Proposed new findings and solutions
47	VI	OCS611	Business Intelligence	1. Design and implement OLTP, OLAP and Warehouse concepts.
				2. Design and develop Data Warehouse using Various Schemas & Dimensional modelling.
				3. Apply ETL concepts, tools and techniques to perform Extraction, Transformation, and Loading of data.
				4. Apply various reporting concepts, techniques/tools, and use charts, tables for reporting in BI.
				5. Apply analytics concepts like data mining, Exploratory and statistical techniques for predictive analysis in Business Intelligence
48	VI	VCS611	Web Technology	1. Learn capability to make own web site and host their own web site on internet
				2. Identify the difference between the HTML PHP and XML documents.
				3. Understand the concept of JAVA SCRIPTS
				4. To implement HTML and PHP and design web applications
				5. To write test cases to use technologies for solving problems using Web Technologies
49	VI	VCS612	E-Commerce	1. Understand and distinguish between e-commerce and e-business.
				2. Understand and analyze e-marketplaces.
				3. State various requirements for starting an online business.
				4. Work in groups in order to design a new online business idea.
				5. Analyze and present successful e-business stories.

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50	VI	VCS613	Data Mining	1. Understand the data warehouse and OLAP operations. 2. Analyze different classification techniques 3. Ability to understand the types of the data to be mined and present a general classification of tasks and primitives to integrate a data mining system 4. Apply preprocessing methods for any given raw data 5. Extract interesting patterns from large amounts of data
51	VII	17YCS701	Object Oriented Analysis and Design	1. Design software applications using OO concepts. 2. Express software design with UML diagrams 3. Identify various scenarios based on software requirements 4. Transform UML based software design into pattern based design using design patterns 5. Understand the various testing methodologies for OO software
52	VII	17YCS702	Information and Cyber Security	1. Be able to use basic cryptographic techniques in software and system design. 2. Apply methods for authentication, access control, intrusion detection and prevention 3. Able to apply the scientific method to digital forensics and perform forensic investigations 4. Develop computer forensics awareness 5. Ability to use computer forensics tools
53	VII	17YCS703	Artificial Intelligence	1. Get to know about the basic principle of AI 2. To understand the concept of machine thinking 3. Understanding the modern concept in AI

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				4. Understand the concept of problem solving and thus to improve the problem solving skill
				5. Understand the concept of gaming and know the decision making in checker.
54	VII	17YCS711	Information and Cyber Security Lab	1. To help students understand how Cyber Securityis a powerful technique and needed one in todays scenario.
				2. To make it possible for students to learn the process, various steps, tools and techniques involved in Cyber Security
				3. To facilitate students, appreciate the need for understanding legal aspects of Cyber Security
55	VII	17YCS712	Object Oriented Analysis and design Lab	1. Introduce various designing techniques and methods for object oriented
				2. Performance analysis with real time system
				3. Demonstrate a familiarity with object oriented data and system.
				4. Give clear idea on implementing design with UML diagram like state diagram, activity diagram, use case diagram etc.
				5. Introduce various designing techniques and methods for object oriented
56	VII	17YCS713	Project Stage I	1. An ability to work in actual working environment.
				2. An ability to utilize technical resources.
				3. An ability to write technical documents and give oral presentations related to the work completed.
57	VII	17YCS714	Internship III	1. An ability to work in actual working environment
				2. An ability to utilize technical resources.

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				3. An ability to write technical documents and give oral presentations related to the work completed.
58	VII	OCS712	Web Development and services Course	1. Understand the basics of internet 2. Be able to create web pages in HTML and make web applications 3. Be able to comprehend advanced concepts of HTML 4. Identify the different styles that can be incorporated in a web page 5. Implement HTML and PHP and design web applications
59	VII	OCS713	Planning Analytics	1. Transfer data into your model 2. Customize drill paths 3. Model for different fiscal requirements
60	VIII	17YCSE01	Advance Software Engineering	1. Apply software engineering life cycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment. 2. Have brief account of associated professional and legal issues. 3. Ability to perform independent research and analysis. 4. Ability to work as an effective member or leader of software engineering teams. 5. To manage time, processes and resources effectively by prioritizing competing demands to achieve personal and team goals Identify and analyzes the common threats in each domain.
61	VIII	17YCSE02	Software Project Management	1. Explain the principles of team dynamics and apply them to foster a collaborative and productive team environment 2. Develop and implement strategies to allocate resources, assign tasks, and manage team members' workloads effectively. 3. Develop and implement strategies to allocate resources, assign tasks, and

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				manage team members' workloads effectively.
				4. Employ effective communication techniques to facilitate clear and efficient information exchange within the team.
				5. Explain the principles of team dynamics and apply them to foster a collaborative and productive team environment
62	VIII	17YCSE03	Grid and Cluster Computing	1. Accelerated scientific research and data analysis.
				2. Improved scalability and fault tolerance.
				3. Able to design programs in OpenMP and MPI.
				4. Reduced costs through resource sharing and consolidation.
				5. Enhanced resource utilization and workload distribution
63	VIII	17YCSE04	Machine Learning	1. Understand the limitations of various machine learning algorithms and the way
				2. Evaluate performance of machine learning algorithms.
				3. Develop Machine learning enables the development of recommendation systems
				4. Apply and develop applications, including chatbots, virtual assistants, sentiment analysis, and language translation
				5. Classify and solve Graphical models
64	VIII	17YCSE05	Neural Network	1. Discuss the learning and generalization issue in neural computation.
				2. Explain and classify common learning algorithms for multilayer perceptron, radial-basis function networks, and Kohonen self-organising maps.
				3. Outline common learning

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				algorithms using an existing package.
				4. Apply neural networks to classification and recognition problems.
				5. Explain SOM in the real-life project
65	VIII	17YCSE06	Soft Computing	1. Explain problems of interdisciplinary nature.
				2. Discuss and find an alternate solution, which may offer more adaptability, resilience and optimization.
				3. Examine soft computing domain which opens up a whole new career option.
				4. Tackle real world research problems.
				5. Apply the concept of genetic algorithm in the real-world problem
66	VIII	17YCSE07	Mobile Computing	1. Explain Mobile Web Technologies
				2. Discuss fundamental concepts of mobile computing
				3. Explain and apply emerging trends in mobile computing
				4. Analyze mobile computing challenges and solutions:
				5. Explain and apply the concept of data dimensions in mobile computing
67	VIII	17YCSE08	Ubiquitous Computing	1. To Demonstrate the knowledge of design of Ubicomp and its applications.
				2. To Explain smart devices and services used Ubicomp
				3. To Describe the significance of actuators and controllers in real time application design.
				4. To Use the concept of HCI to understand the design of automation applications
				5. 5. To Classify Ubicomp privacy and explain the challenges associated with Ubicomp privacy
68	VIII	17YCSE09	Information Storage and Retrieval	1. Discuss and explain the concept of Information retrieval.
				2. Discuss storage and retrieval process of text and multimedia data.

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				3. Evaluate performance of any information retrieval system.
				4. Design user interfaces.
				5. Explain importance of recommender system
69	VIII	17YCSE10	Distributed System	1. Explain principles and properties of distributed systems based on different application areas.
				2. Discuss and apply the basic theoretical concepts and algorithms of distributed systems in problem solving.
				3. Classify and recognize the inherent difficulties that arise due to distributed ness of computing resources.
				4. Identify the challenges in developing distributed applications.
				5. Explain and apply the web-based system in IT projects
70	VIII	17YCSE11	Advanced Databases	1. Learn the basics of DBMS-files, commands, storage and structure
				2. Understand modern database management system
				3. Understand and apply advance query optimization
				4. Learn and understand information retrieval and databases
				5. Understand and apply the security and privacy
71	VIII	17YCSE12	Embedded and Real Time Operating System	1. Recognize and classify embedded and real-time systems
				2. Explain communication bus protocols used for embedded and real-time systems
				3. Classify and exemplify scheduling algorithms
				4. Apply software development process to a given RTOS application
				5. Design a given RTOS based application
72	VII	17YCS811	Project Stage II	1. Test and analyze the projects results
				2. Prepare project report with detail specification

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				3. Develop project based on real life challenges

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