

Course Outcomes

Course Outcomes of I Year B. E. Computer Science and Engineering

Course Code	Course Title	Course Outcomes
BE-101	Engineering Chemistry	1. To impart the knowledge of engineering application of chemistry. To provide the knowledge of water treatment & analysis.
		2. To make students familiar with the concept of fuel & combustion & testing methods.
		3. To impart the basic knowledge of lubricants, properties & testing methods. To provide the knowledge to students classification, Manufacturing process & applications
		4. To introduce the students with general types, classification & applications of polymers.
		5. To get acquaintance of students with the use of instrumental techniques in chemical analysis.
BE-102	Engineering Mathematics-I	1. Students are able to understand basic principles of Differentiation calculus in engineering problems
		2. Students are able to understand basic principles of Integral calculus.
		3. Students are able to apply concepts of Differential Equations in Mathematical Modeling of engineering problems.
		4. Students are able to understand the role of Linear Algebra, Matrices and its applications in engineering.
		5. Students are able to apply the concepts of Logics, Boolean algebra and Fuzzy logic in engineering problems.
BE-103	Communication Skills	1. Ability to gain proficiency in language & skills of communication.
		2. Learn application of linguistic ability in daily life.
		3. Students able to communicate one's point of view with clarity in formal and informal situations in both written and verbal format.
		4. Be able to express themselves clearly and appropriately in social and professional fields and strengthen professional etiquette.
		5. Ability to develop awareness in writing paragraphs, reports, formal and informal letters
BE-104	Basic Electrical & Electronics Engineering	1. Student will be able to understand the fundamentals of DC and AC circuit analysis.
		2. Student will be able to understand about the fundamental of magnetic circuits and the construction, principle, working, calculation of different parameters and tests on transformer.
		3. Student will understand the construction & principle of A.C. &

		D.C. machine.
		4. Student will be able to understand about number system, logic gates, flip-flop and adders.
		5. Student will be able to understand about basics of semiconductors and different types of electronic components and circuits.
BE-105	Engineering Graphics	1. Understand the purpose of engineering graphics and technology & Identify and use appropriate drawing instruments and equipments.
		2. Know about the types of scales used to produce engineering drawings
		3. Understand basic concepts related to geometrical shape applications in geometrical constructions (ellipse, parabola, etc).
		4. Understand the principles of first and third angle projection and use of this principle in drawing.
		5. Draw two-dimensional view and three-dimensional view of engineering components & use of drawing software's.
BE-106	Workshop Practice	1. To know and strictly adhere to the rules and safety regulations for workshop in the mechanical workshop.
		2. Get ability to properly operate the basic Marking, Measuring and Cutting tools
		3. Ability to perform work on carpentry ,smithy, welding and forging
		4. Ability to select proper tools and cutting process for a given material.
BE-201	Engineering Physics	1. Knowledge about Quantum physics and applications of Schrödinger wave equation.
		2. Knowledge of Interference, diffraction and polarization of light.
		3. Ability to understand nuclear model and different particle accelerators.
		4. Knowledge of semi-conductor physics and its application in electronics.
		5. Knowledge of lasers, fiber optics in field of communications
BE-202	Energy, Environment, Ecology & Society	1. Identifies and relates their importance about renewable and non-renewable resources
		2. Knowledge about types of pollution and pollutants.
		3. Having knowledge about society and development of human values.
		4. To work on principle of recycle, reuse and reduce.
		5. Able to know about EIA, various acts and codes related to environmental issue.
BE-203	Basic Mech. Engineering	1. Understanding various engineering materials based on their composition, properties and uses of engineering materials with concepts of their formation and testing.
		2. Understand the theoretical and practical concepts behind working of measuring Instruments and their application with understanding of various types of machining operations.

		3. Understanding of fluid properties, fluid behavior in rest and motion and different types of hydraulic machines
		4. Understanding of basic concepts and laws of thermodynamics, Steam properties and application of steam in boilers and steam engine and various refrigeration system.
		5. Understanding the working of heat engines and Concept of air standard cycles and their application in current automobile industry
BE-204	Basic Civil Engg. & Engg. Mechanics	1. To learn types of building materials, their applications in construction.
		2. Knowledge about Surveying and Positioning, and their applications.
		3. To learn mapping and sensing and must be able to apply practically.
		4. To understand the concept of resolution of forces.
		5. To understand concept of equilibrium, moment and centre of gravity.
BE-205	Basic Computer Engineering	1. Students will able to understand the basics of Computer and Operating System.
		2. Students will know the fundamental of algorithm; flow-chart formation, description of Procedure Oriented Programming and Object Oriented programming with C++ introduction.
		3. Students will able to implement the concepts of Object Oriented Programming
		4. Students will able to learn the fundamentals of Computer Networks and Security fundamentals. They can also aware about Cyber Laws
		5. Students will get the Knowledge of DBMS and also the basics of Cloud Computing.
BE206	Language Lab & Seminars	1. Able to introduce oneself and family and work on Non verbal Communication
		2. Learn to work on oral skills like conversational practices, extempore and role play.
		3. Able to comprehend the paragraphs and improve reading skill.
		4. Learn to translate the common words and sentences from English to Hindi and vice versa.
		5. Learn the oral presentation techniques (planning preparation practice and presenting)

Course Outcomes of II Year B. E. Computer Science and Engineering

Course Code	Course Title	Course Outcomes
BE -301	Mathematics II	<ol style="list-style-type: none"> 1. Students are able to understand the role of Fourier series and Fourier transform and its applications in engineering. 2. Students are able to apply concepts of Laplace transform in engineering problems. 3. Students are able to understand basic principles of solution of differential equations. 4. Students are able to understand basic principles of solution of partial differential equations. 5. Students are able to understand the role of Vector calculus and its applications in engineering.
CS-302	Discrete Structure	<ol style="list-style-type: none"> 1. Students are able to understand set theory, relation Function, mathematics induction Techniques. 2. Students are able to understand group and ring theory. 3. Students are able to understand Propositional Logic and finite automata. 4. Students are able to understand about the various types of graphs. 5. Students are able to understand lattice, recurrence and recursive algorithm.
CS-303	Digital Circuit & System	<ol style="list-style-type: none"> 1. Student is able to understand the Number system, arithmetic operation & minimize any complex Boolean function. 2. Student is able to understand the logic gates & combinational circuits. 3. Student is able to understand the Function of different types of Logic families such as RTL, DTL TTL , multivibrator. Clock generating circuits & flip-flops 4. Student is able to understand the different types of semiconductor memories& combinational Circuits, counters & Registers. 5. Student is able to understand the different methods of Analog to Digital & Digital to Analog Converters.
CS -304	Electronic Devices and Circuit	<ol style="list-style-type: none"> 1. Students should learn about basic concept of Semiconductor device, Transistors BJT, FET, MOSFET & types of amplifier. 2. Students should understand concepts of feedback amplifier, oscillators & Power amplifiers. 3. Students get knowledge about process Multivibrators, clipper & clamper ,calculation of differential & Cascade and cascode amplifier. 4. Students should understand Operational amplifier characteristics & 555 timer. 5. Students get knowledge about Regulated power supplies.

CS-305	Data Structures	1. Students are able to understand basic concepts of algorithm, Array and recursion.
		2. Students are able to understand implementation of stack, Queue and link list.
		3. Students are able to understand about the different types of tree their real application.
		4. Students learns about the different sorting techniques their comparison & effectiveness.
		5. Students learn about the graph, tree, types, operations & real time examples.
CS-306	Computer programming(Java Technologies)	1. Students are able to understand about the basic fundamental of Java & their use in programming.
		2. Student are able to understand about Data Structures like queue, stack, tree, link list, about Collection & their Algorithm like interface, list, Algorithm of sorting, binary search, max and min.
		3. Students are able to understand about Multithreading and their application, Networking & Database like SQL, MySQL, and Oracle.
		4. Students are able to understand about the Servlets, Applets, Jas and their use in programming.
		5. Students are able to understand about Advance Web/Internet Programming like J2ME, J2EE, and EJB.
CS-307	Self Study	1. Objective of Self Study is to induce the student to explore things.
		2. To make them able to read technical aspects of his area of interest.
		3. To make students independent.
		4. To make students able so that they can materialize things learned in classes.
CS-308	Seminar/Group Discussion	1. Objective of GD and seminar is to improve the mass communication.
		2. It is to give student an opportunity to exercise their rights to Express them.
		3. To enhance understanding skills of students.
		4. To improve convincing power of students.
CS-401	Mathematics-III	1. Students are able to understand the role of Functions of Complex variables and its applications in engineering.
		2. Students are able to understand basic principles of numerical solution of equations.
		3. Students are able to apply concepts of Numerical analysis, Interpolation and extrapolation in engineering problems.
		4. Students are able to understand basic principles of Numerical solution of ordinary differential equations and Statistics.
		5. Students are able to apply the concepts of probability and testing of hypothesis methods in engineering problems.

CS-402	Computer System Organization	1. Student will be able to understand Basics of computer organization.
		2. Ability to understand CPU and ALU organization.
		3. Student understands data transfer mechanism in 8085 microprocessor and input output organization of computer.
		4. Ability to understand memory organization and all typed of memory in computer system.
		5. Ability to study pipeline and vector processing and instruction and arithmetic pipelines.
CS-403	Object Oriented Technology	1. Students should learn about the basic fundamental of object oriented programming and their features.
		2. Students should understand the various relationships between classes.
		3. Students get knowledge about some most useful concept of OOPs like Inheritance and Polymorphism.
		4. Students should learn about the concept of container class and various object oriented programming languages.
		5. Students should get knowledge of C++/JAVA as object oriented programming language.
CS-404	Analysis & Design of Algorithms	1. Students are able to do analysis of algorithms and able to find out the complexity of any algorithms
		2. Students know the Greedy strategy technique and able to solve the related problems.
		3. Students know the concept of dynamic programming and solve problems using the strategy
		4. To learn about the Backtracking concept and its examples.
		5. Students are able to create different types of tree and understand operations on tree.
CS-405	Analog & Digital Communication	1. To understand the principles of analog and digital communications and able to do the analysis of all types of signals in time domain as well as in frequency domain.
		2. To understand the working principle of analog modulation techniques (AM, FM, PM), Bandwidth comparisons of modulation techniques and need of modulation.
		3. To understand Sampling Theorem, Analog to Digital Conversion Techniques (PAM, PCM, DM, ADM) and Time division, multiplexing (TDM).
		4. Learning of Digital modulations techniques, Generation, detection, equation and Bandwidth of amplitude shift keying (ASK) Binary Phase Shift keying (BPSK), Differential phase shift keying (DPSK) etc.
		5. To understand the concept of information theory and various coding schemes like Shannon's Hartley, Shannon-Fanon, and Linear

		block code, cyclic code, convolution code and different types of line encoding.
CS-406	Computer programming-IV(.Net Technologies)	1. Students are able to understand the .NET framework, its features, architecture and its components.
		2. To learn about C# programming language, its basic features, and apply various concepts of OOPs in C#.
		3. To learn ASP.NET, its features and how to develop web form in ASP.NET. And also to learn HTML, how to write a code in HTML, and what are its controls.
		4. To learn about the ADO.NET, the feature, controls and code to connect database with front end using ODBC, OLEDB, and SQL.
		5. To learn XML, how java scripts used in web parts and what are the web services.
CS-407	Self Study	1. Objective of Self Study is to induce the student to explore things.
		2. To make them able to read technical aspects of his area of interest.
		3. To make students independent.
		4. To make students able so that they can materialize things learned in classes.
CS-408	Seminar/Group Discussion	1. Objective of GD and seminar is to improve the mass communication.
		2. It is to give student an opportunity to exercise their rights to Express them.
		3. To enhance understanding skills of students.
		4. To improve convincing power of students.

Course Outcomes of III Year B. E. Computer Science and Engineering

Course Code	Course Title	Course Outcomes
CS-501	Data Communication	1. Introduction of data communication fundamentals, data compression techniques & review of transmission methods.
		2. Students will learn the concepts of multiplexing techniques, spread spectrum and switching techniques.
		3. Students will be able to understand the details of physical layer like modem, connecting devices & topologies.
		4. Students will learn the concepts of various transmission media & telephone network.
		5. To understand various transmission error & error detection & correction techniques.
CS-502	Operating System	1. Students should learn about basic concept of operating

		<p>system, evolution and types of operating system and differences among them.</p> <p>2. Students should understand concepts of file management, file system and device driver.</p> <p>3. Students get knowledge about process scheduling, interprocess communication and deadlock.</p> <p>4. Students should understand memory management mechanism with paging and segmentation.</p> <p>5. Students get knowledge about distributed operating system and security mechanism in operating system</p>
CS-503	Data Base Management System	<p>1. Students get basic knowledge of Database concepts, architecture and models.</p> <p>2. Student learns Sql query and various Relation algebra operation</p> <p>3. Students understand concepts of Normalization and Query optimization technique.</p> <p>4. Student learns Transaction processing concepts and recovery from transaction failures.</p> <p>5. Students Study the DBMS through Oracle/Mysql /Postgres.</p>
CS- 504	Computer Graphics & Multimedia	<p>1. Student are able to understand concept of computer graphics, Display Devices, Graphics Primitives and Line & Circle Drawing Algorithms.</p> <p>2. Student get knowledge about 2D transformation, World & View Coordinate System and Clipping Algorithms .</p> <p>3. Student are able to learn 3D transformation, Hidden surface elimination algorithm, Back face detection algorithm and different Color Models .</p> <p>4. Student are able to understand concept of Multimedia, Text, Audio & Video file formats and components.</p> <p>5. Student are able to learn Animation Concept, File formats, softwares and Compression Techniques</p>
CS-505	Theory of Computation	<p>1. Students are able to understand basic concept finite automata and their capabilities.</p> <p>2. Students learn context-free languages and its Normal Forms.</p> <p>3. Students know the pushdown automata concept & why it used in computation.</p> <p>4. Students are able to understand basic concept of Turning Machine.</p> <p>5. Students are able to understand P, NP hard and NP Complete problems.</p>

CS506	Computer Programming V (Unix/Linux Lab.)	1. Students are able to understand Basics Unix/Linux Operating Systems. They will be able for how to install Unix/Linux and concepts of shell programming. Students can understand features of Linux/Unix Operating System.
		2. Students will get knowledge of the architecture of Unix/Linux and Virtual File System.
		3. Students are able to understand Scheduling Priorities and Change the Priority of a time-sharing process.
		4. Students know about File Access Commands or about Access Control List (ACLs), Setting ACL Entries, Modifying ACL entries on a file, Deleting ACL entries on a file.
		5. Students are able to understand DHCP and its working, configuration etc.
CS507	Self Study	1. Objective of Self Study is to induce the student to explore things.
		2. To make them able to read technical aspects of his area of interest.
		3. To make students independent.
		4. To make students able so that they can materialize things learned in classes.
CS508	Seminar/Group Discussion	1. Objective of GD and seminar is to improve the mass communication.
		2. It is to give student an opportunity to exercise their rights to Express them.
		3. To enhance understanding skills of students.
		4. To improve convincing power of students.
CS-601	Micro Processor and Interfacing	1. Students can understand basic definition and difference between Microprocessor and microcontroller, their history and evolution and their applications.
		2. Students are able to understand basic concepts of 8085 Microprocessor Architecture and its programming.
		3. Students are able to understand the basic concepts and principles of 8086 Microprocessor Architecture with pin diagram and description of each pin and get the in-depth knowledge of Multiprocessor Systems and programming.
		4. Students get the basic Knowledge of microprocessor interfacing with different devices like 8279, 8253, 8255, 8257, 8259, 8251, etc and different buses.
		5. Students are able to get basic Knowledge of

		microcontroller 8051 with external memory interfacing.
CS-602	Principles Of Programming Languages	<p>1. Students are able to understand about basics concept of language like evaluation Criteria influences of language design and compilation process of different object oriented language and BNF grammar.</p> <p>2. Students are able to understand about data types and its design issues, type casting of different programming language with their control structure and sequence statements.</p> <p>3. Students get details about subprogram structure, parameter passing techniques, generic subprograms and overloading of sub programs.</p> <p>4. Students learn about data abstraction, storage management and garbage collection of different programming language and different type of OOP languages and concepts of concurrency.</p> <p>5. About exception handling of different object oriented programming language, fundamentals of logic and functional programming, basics of prolog and introduction of 4GLS.</p>
CS-603	Software Engineering & Project managements	<p>1. Student learn about the software product and various software process models</p> <p>2. Student learn about the requirement analysis techniques and use case modeling</p> <p>3. Student get to know about software design concepts & principles and use case modeling</p> <p>4. Student get to know about the different software testing techniques</p> <p>5. Students learn about the software maintenance & software project management</p>
CS-604	Computer Networking	<p>1. Students will be able to understand the core concepts of OSI, TCP/IP Models & queuing theory.</p> <p>2. Students will be able to understand the concepts of various data link layer protocols with protocol verification models like finite state machines & pertinent.</p> <p>3. Students learn various contention schemes, collision free protocols & IEEE standards of MAC layer</p> <p>4. To understand the concepts of various types of routing protocols & IP protocol in details</p> <p>5. To understand various transport, session, presentation & application layer protocol like UDP, TCP, H.245, X.25, HTTP, FTP, DNS, SMTP, SNMP etc.</p>
CS-605	Advance Compute Architecture(ACA)	1. Students are able to understand about the architecture and designing of Computer System.

		2. Students are able to understand about the architecture and designing of Computer System.
		3. Students are able to collect the information About how to execute any instruction in Pipelined system and knowledge about various recent super pipeline processors.
		4. Student are able to understand about Cache maintenance, Message routing schemes, deadlock and virtual channel, SIMD model, Vector processing and Multithreading.
		5. Students are able to understand about various Parallel programming models, features for parallelism, s/w tools and environments.
CS-606	Minor Project – I	1. Students are able to understand basic concept of software engineering and ability to apply this concept in their projects and also know the programming language which they are using.
		2. Students are able to understand basic UML diagram for designing purpose.
		3. Students are able to understand Software development life cycle to develop the project.
CS-607	Self Study	1. Objective of Self Study is to induce the student to explore things.
		2. To make them able to read technical aspects of his area of interest.
		3. To make students independent.
		4. To make students able so that they can materialize things learned in classes.
CS-608	Seminar/Group Discussion	1. Objective of GD and seminar is to improve the mass communication.
		2. It is to give student an opportunity to exercise their rights to Express them.
		3. To enhance understanding skills of students.
		4. To improve convincing power of students.

Course Outcomes of IV Year B. E. Computer Science and Engineering

Course Code	Course Title	Course Outcomes
CS-701	Compiler Design	1. Students are able to understand overview of phase of compiler and Lexical analysis.
		2. Students are able to understand various parsing technique and syntax direct translation.
		3. Students are able to understand type checking and Run time environment.
		4. Students are able to understand different intermediate code generation techniques.
		5. Students are able to understand various code optimization techniques.
CS-702	Distributed Systems	1. Students will be able to understand the architecture of distributed system, Distributed computing models and Issues in designing Distributed System.
		2. Students will be able to learn about distributed shared memory and distributed file system.
		3. Students learn about API, Implementation of RPC Mechanism, IPC and Election algorithms.
		4. Students are able to understand about basics of distributed Scheduling, load distribution algorithms and dead lock handling strategies.
		5. Students will be able to learn about Distributed Data Base Management System and Distributed Multimedia systems.
CS-703	Cloud Computing	1. Students are able to understand Cloud Computing, It's history and applications.
		2. Students are able to understand architecture of cloud, present solutions, and Offerings.
		3. Students are able to understand various virtualization technologies, and procedure of Cloud Management.
		4. Students will get knowledge of cloud security fundamentals, management of Virtualization security and etc
		5. Students became able to familiar with available cloud solutions in market and their management.
CS-704	Information Storage and Management	1. Students are able to understand the different storage technology available, and importance of data or information over a period of time.
		2. Students are able to understand concepts of different RAID levels and understand the structure of Physical

		Disk
		3. Students are able to understand different networking storage technologies and how to protect and save fixed data. They will able to know various standards, connectivity of Storages.
		4. Students became able to familiar with the principles virtualization, backup, recovery etc.
		5. Students became able to familiar with Cloud Computing concepts and security related issues in cloud.
CS-7101	Network & Web Security	1. Students master the information security governance, and related legal and regulatory issues.
		2. Students get fundamentals of secret and public cryptography.
		3. Students get exposed to the research in network security and understand the algorithm and Hash Functions etc.
		4. Student gets familiar with information security awareness and a clear understanding of its importance, also get the knowledge about Virus, Worms etc.
		5. Students are able to understand the steps of Forensic Investigation, Hacking, and Classes of Hacker etc.
CS-705	Industrial Training* (Two Weeks)	1. Student's engineering knowledge is enhanced and employment prospects are improved.
		2. To learn as much as possible from real life experiences by interacting with industry staff.
		3. Industrial training of the students is essential to bridge the wide gap between the classroom and industrial environment.
		4. This will enrich their practical learning and they will be better equipped to integrate the practical experiences with the classroom learning process.
CS-706	Major Project	1. Students analyze software problems and find their solutions.
		2. Students study and survey existing software which are already available.
		3. Students select suitable software process model for implementation.
		4. Students find appropriate engineering tools which are most suitable for implimentation work.
CS-707		1. Objective of Self Study is to induce the student to

	Self Study	<p>explore things.</p> <p>2. To make them able to read technical aspects of his area of interest.</p> <p>3. To make students independent.</p> <p>4. To make students able so that they can materialize things learned in classes.</p>
CS-708	Seminar/Group Discussion	<p>1. Objective of GD and seminar is to improve the mass communication.</p> <p>2. It is to give student an opportunity to exercise their rights to express them.</p> <p>3. To enhance understanding skills of students.</p> <p>4. To improve convincing power of students.</p>
CS-801	Soft Computing	<p>1. Students are able to understand basic of soft computing and various search problems in Artificial Intelligence.</p> <p>2. Students are able to understand Neural Network basic and various supervised learning algorithm.</p> <p>3. Students are able to understand Counter propagation network, architecture, functioning and ART.</p> <p>4. Students know about Fuzzy logic, operations, Fuzzy inference system model and its applications.</p> <p>5. Students able to understand about Genetic algorithm, Fundamentals, basic concepts, working principle, encoding, and fitness function, crossover and mutation operator.</p>
CS-802	Web Engineering	<p>1. Student will get knowledge about basics of Web Engineering and web protocols (TCP/IP, HTTP, FTP etc.), search strategies, Web server.</p> <p>2. Student will able to understand Information Architecture for web designing and web security.</p> <p>3. Student will able to understand web development languages like HTML, CSS, Java Script, PHP, and CGI etc. To develop dynamic and interactive websites.</p> <p>4. Student gets knowledge about web development languages like XHTML, SGML, XML etc for suitable model of web designing.</p> <p>5. Student must be able to understand E-commerce, Web Publishing and security issues of web documents as well as electronic payment gateways.</p>
		<p>1. Students are able to get the knowledge about the fundamentals of network management like Configuration management, Fault management, Security management etc.</p>

CS-8201	N/W Management	2. Students are capable of doing how to configure network, and understand the advanced network management concepts like Remote Monitoring and Desktop Management etc.
		3. They understand the fundamentals of network support layers like Physical Layer, Data Link Layer and Network Layer.
		4. Students will get the information about various Routing Protocols and their practical implementation.
		5. Students learn the concepts of various protocols like ICMP, IGMP, TCP, TELNET, FTP and SMTP.
CS-8303	Wireless Network	1. Student gets basic knowledge of Wireless Networks.
		2. Student gets theoretical knowledge of network planning and Network Operations. They also aware about cellular network functionality
		3. Student gets knowledge of different modulation and multiplexing technique. They also aware about mobile data network.
		4. Student gets knowledge of different kind of wireless LAN & various IEEE reference architectures.
		5. Student gets knowledge of wireless network such as Bluetooth and 2G and 3G networks.
CS-805	Major Project	1. Student design and implement software of their proposed work.
		2. This project work make student more familiar with computer software.
		3. Reduce gap between theory and experiment student enhanced their thinking and programming ability.
		4. Student learns for different problems which arise in project development and report work.
CS-806	Self Study	1. Objective of Self Study is to induce the student to explore things.
		2. To make them able to read technical aspects of his area of interest.
		3. To make students independent.
		4. To make students able so that they can materialize things learned in classes.
CS-807	Seminar/Group Discussion	1. Objective of GD and seminar is to improve the mass communication.
		2. It is to give student an opportunity to exercise their rights to Express them.
		3. To enhance understanding skills of students.

		4. To improve convincing power of students.
--	--	---