Program Objectives

B.Tech(Computer Science and engineering)
(Under graduate programs offered by the department)

1. Name of the program: Bachelor of Computer Science and Engineering
2. Program Specifications:
School of Studies: School of Engineering and Technology
Department: Computer Science and Engineering
Program: BTech CBCS Scheme
Head of the Department: Mr Nishant Behar
Date of Approval in Board of Studies: 30.05.2019
Date of Last revision: 2019
Next revision due: 2020

3. Mode of Study: Full time (Semester system):
Class room teaching; experiential learning; Tutorials;
Experimental laboratory training; Project assignments;

Purpose of the Course:

B.Tech. (CSE) is the branch of engineering which deals with the design,planning, analysis, construct, operate and maintenance of the system related to hardware and software studies. The course enables students to understand the intrinsic details involved in the study of core concepts of computers systems ,operations, algorithms and applications in different sectors. Through its study and methods students are trained and enriched with skills of analyzing systems and interpretation for the problem-solving.

The curriculum is designed in a manner to deepen the knowledge of computer science and engineering thus building a strong foundation for students to undertake future qualifications of advanced level learning in Masters degrees and research orientation for Ph.Ds. Students are also introduced to the various programming languages, software engineering, hardware designs, network related issues, multimedia tools ,which increases their employability.

The course study comprises from basic to latest subjects and includes seminars, tutorials projects, and assignments, with experiments in the diverse field of computer science. After completion of the program, candidates have a wide area of opportunities in areas of IT sector, automobile, communications, electronics, processing industries and so on, enabling them to handle higher positions based on further additional qualifications. Choice based credit systems (CBCS) and continuation evaluation methods also adds flexibility to this curriculum.

Programme specific Objectives

To produce technically strong engineers with the latest knowledge and thinking.
• To build decision-making , design skills
• To develop research and innovative thinking
• To promote for students higher studies and life learning thinking
• To make students to serve IT industries

Programme Specific Outcomes

• Problem Solving: Students will be able to understand the root cause of Problem and serve a solution in the form of research out come or engineering solutions. Providing exposure of all basic engineering subjects to latest choice based computer engineering courses.

• Design: Students will understand various software engineering aspects and modelling, design issues ,databases ,Computer architecture and the underlying processing of the software and hardware

• Use Research-based : Students will be able for the scientifically applying their thoughts and knowledge, creative thinking, innovative approach , planning , management, understanding radical and advanced thinking for the offering newest solutions for sustainable development

• Students will get the knowledge for appearing in the National and International level Exams GATE/NET, Public-Private sectors and further higher studies in inside India and abroad.

• Professional conducts and disciplined engineer : Student will have professional skills and latest technical knowledge by time to time conducting Board of Studies (BOS), updating syllabuses for providing maximum opportunity of employable. Students will have ability to do experimental

BTech Ist year (AICTE)

Objectives:

The main objectives of first year syllabus are as follows: • To teach basic subjects of engineering. • To enable students to performs basic engineering experiments. • To teach the fundamentals of engineering.

Code	Subject Name	Course Out come
Ist Semester		
CS01TBS01	Physics	Gain basic understanding of the combined effect of electric and magnetic fields their application for designing various electromagnetic and semiconductor devices. • Acquire fundamentals of Optics, especially wave nature of light (e.g., interference etc.) and its applications towards telescopes, microscopes, astronomy and fibre optics. • Develop basic knowledge on the historical development and time-to-time applications of quantum mechanics in electronic devices (e.g., Photovoltaic cell, Hall sensor etc.). • Obtain basic understanding of the particle nature of light (e.g., Photoelectric effect, Compton scattering etc.) and their applications. • Gain basic knowledge on the properties, production and applications of X-rays. f Understand the fundamentals of atomic structure and related theory & experiments. • Attain basic knowledge on different types of LASERs and their applications. • Develop an ability to conduct experiments, as well as to analyse and interpret data related to the Electromagnetism, Optics, Modern and Laser Physics
CS01TES01	Basic Electrical Engineering	To understand and analyze basic electric and magnetic circuits • To study the working principles of electrical machines and power converters. • To introduce the components of low voltage electrical installations
CS01TBS02	Mathematics-I	Develops skill of higher derivative, expansion of functions in ascending power of variable & value of the function in neighboured of some points. • Able to determine limits of indeterminate function. Applicable to already word problems & Engineering Problems. • Gain the knowledge to solve differential equation arising in different Engineering branch and able to form mathematical & physical interpretation of its solution which place important role in all branches of Engineering. • Learn the

		evaluation policy of some special function like gamma & Beta function. & their relation which is helpful to evaluate some definite integral arising in various branch of Engineering. • Able to calculate rank of matrix, characteristic equation & characteristic roots & use the applicability of Caylay Hamilton Theorem to find inverse of matrix which is very important in many engineering application. • Develops the ability to trace the curve for a given equation of a curve & its nature. • Gain knowledge to find radius of curvature & torsion of given curve which is helpful in civil Engineering , Mechanical Engineering & Rods and Building Construction & it is also useful in Research & development.
CS01THS01	English	Ability to prepare and make small presentations • Ability to write effective business letters, emails, CV and reports • Comprehend answering strategies in group discussions and interviews • Ability to voice opinion in discussions and convey ideas • Comprehend different types of communication and importance of effective communication in a work place
CS01TMC01	Environmental Sciences	A clear appreciation and understanding of the scope of environmental engineering and the types of problems and issues that are involved • An understanding of the interdisciplinary nature of problems associated with environmental engineering and the environment, and the broad range of skills and expertise that are required • The global climate system and human interactions of major biogeochemical cycles sufficiently to critically evaluate forecasts for global change • To describe and apply the fundamentals of air and water pollution to solve basic environmental engineering problems • The objectives of water and wastewater treatment and to the most important regulations for sustainable development.
CS01PBS01	Physics Lab	Engineering Physics graduates must have demonstrated a working knowledge of fundamental physics and basic electrical and/or mechanical engineering principles to include advanced knowledge in one or more engineering disciplines; • the ability to formulate, conduct, analyze and interpret

		experiments in engineering physics; and • The ability to use modern engineering physics techniques and tools, including laboratory instrumentation. • Communicate their ideas effectively, both orally and in writing; and function effectively in multidisciplinary teams
CS01PES01	Basic Electrical Engineering Lab	Get an exposure to common electrical components and their ratings. • Make electrical connections by wires of appropriate ratings. • Understand the usage of common electrical measuring instruments. • Understand the basic characteristics of transformers and electrical machines. • Get an exposure to the working of power electronic converters.
CS01PES02	Engineering Graphics Lab	Introduction to engineering design and its place in society • Exposure to the visual aspects of engineering design • Exposure to engineering graphics standards • Exposure to solid modeling • Exposure to computer-aided geometric design • Exposure to creating working drawings • Exposure to engineering communication
CS01PMC01	Induction program	We always organize induction training programme as per AICTE programe in the beginning of the first semester to familiar them with the ,departmental ,institutional objectives ,visiting various departments canteen ,labs and places were they require to visit time to time during their study periods.
IInd Semester(AICTE)		
CS02TBS03	Mathematics -II	Learning Basic Probability • Learning continuous Probability Distributions • Learning Bivariate Distributions • Learning Basic Statistics, Applied Statistics
CS02TBS04	Chemistry	Gain knowledge about types of boiler problems, various physical and chemical techniques for water treatment and its analysis, desalination process used to produce potable water from brackish water. • Differentiate between air and water pollution. Posses the knowledge about their adverse effect on the environment and their preventive measures. • Gain chemical knowledge on concepts of polymers, their structural properties and moulding techniques required for solving interdisciplinary problems in polymer

		industries. • Gain basic knowledge about biomolecules, nanomaterials, fullerenes, super conductors, and brass alloy, and also able to apply them in multi- disciplinary engineering branches. • Acquire knowledge on dyes and drugs, methods of dyeing, color theory, synthesis of antimalarial and antibiotic drugs. • Perform the experiments on pH-metry, Potentiometry, Conductometry, Colorimetry and chromatography as well as to analyze and interpret the data to address issues related to engineering problems. • Acquire the knowledge of various types of Corrosion, their significance and preventive measures. • Acquire the basics of non conventional sources of energy and green chemistry.
CS02TES02	Programming for Problem Solving	Understand the flowchart, algorithm and programming logic. Understand the concept of array, pointer, function and structure in C programming. Learn the logic, structure, syntax and functions to write C Programs. Write the program on a computer, edit, compile, correct, recompile, and execute it. Student can identify situation where computer and programming language is useful.
CS02THS03	Humanities-I	The student will acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills.
CS02PBS02	Chemistry Lab	The chemistry laboratory course will consist of experiments illustrating the principles of chemistry relevant to the study of science and engineering. The students will learn to: • Estimate rate constants of reactions from concentration of reactants/products as a function of time • Measure molecular/system properties such as surface tension, viscosity, conductance of solutions, redox potentials, chloride content of water, etc • Synthesize a small drug molecule and analyse a salt sample
CS02PES03	Programming for Problem Solving Lab	Familiarization with programming environment • Learning c programming
CS02PES04	Workshop & manufacturing Practices	Acquire knowledge of the safety measures which are followed in workshop while using hand tools and general purpose machine tools. • Develop creativity, craftsmanship,

		approach to work and planning capabilities within students. • Given a drawing of a product/part such as carpentry job, fitting job, sheet metal job, assembly of system and pipe fitting, apply the various hand tools and general purpose machine tool to make or assemble the product/part. • Select and use various measuring and gauging instrument which are required for different types of jobs.

BTech IInd year (CBCS)

Objectives:

The main objectives of second year syllabus are as follows: • To start core branch subjects of computer Science and engineering , technology and other required disciplines. • Experiments are conducted of various subject to give the practical exposures • To provide the approach and programming skills.

CS3THS01	Engineering Economics	To make an undergraduate student of IT aware of the basic theoretical framework underlying the field of Microeconomics, Macroeconomics, Indian Economy, Public Finance etc. A clear understanding of the operations of money and banking and their interaction with the rest of the economy is essential to realize how monetary forces operate through a multitude of channels — market, non-market, institutions and among others. In addition, the purpose of this course is enabling students to have an understanding of the various issues/components of the Indian economy so that they are able to comprehend and critically appraise current Indian economic problems. For this, it is essential to have a good deal of understanding about the major developments in the Indian economy before Independence, at the time of Independence and during the post-Independence period.
CS3THS02	Electronic Devices and Circuits	This subject is considered as a fundamental subject in understanding the concept of diode ,transistor ,FET etc , their applications. This subject helps the students to understand Low frequency amplifier, High frequency amplifier , concept of signal generators and feedback, Basics and

		application of Op-amp.
CS3THS03	Digital logic and Design	This system facilitates the design of electronic circuits that convey information, including logic gates. Digital Logic gate functions include and, or and not. The value system translates input signals into specific output. Digital Logic facilitates computing, robotics and other electronic applications. Digital Logic is a subject where we learn about the designing of combinational and sequential logic circuits (Hardware components of a computer), Boolean Algebra, Basic gates etc. which in turn is helpful in designing of a computer. Concepts like counters(asynchronous, synchronous), flip flop, registers, and multiplexers, de-multiplexers, encoder, decoder, ROM etc
CS3TBS03	Engineering Mathematics -III	On completion of this course, students are able To know how root finding techniques can be used to solve practical engineering problems. To apply the concept of numerical analysis to find the relative strengths and weaknesses of each computation method and know which are most applicable for given problem. To apply the analytical technique to express periodic function as a Fourier sine and cosine series. To apply partial differential techniques to solve the physical engineering problems. To implement integration technique to determine the extreme values of a functional.
CS3TPC03	Object Oriented Programming with C++	Course outcomes are : Understanding the basic concepts of Object oriented programming ,design issues, Re-usability ,file input out put handing etc. OOPs Programming aspects.
CS3LPES01	Electronic Devices and Circuits Lab	Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. To understand and examine the structure of various number systems and its application in digital design. The ability to understand, analyze and

		design various combinational and sequential circuits. Ability to identify basic requirements for a design application and propose a cost effective solution.
CS3LPES02	Digital logic and Design Lab	Analyse and design combinational circuit. Minimize the Boolean algebra and design it using logic gates. Realise given function using combinational circuit. Design and develop sequential circuits Implement digital systems using programmable logic devices
CS3LPPC01	Object Oriented Programming with C++ Lab	At the End of the course student will learn : Practical knowledge of writing program in TC++ using oops concepts and can able to write small programs using TC++
Semester IV (CBCS)		
CS4TPC01	Data communication and Network	Students will able to: Describe the functions of each layer in OSI and TCP/IP model. Explain the functions of different layers, paradigms and Protocols. Explain the types of transmission media with real time applications
CS4TPC02	Java Programming	At the End of the course student can able to understand core JAVA concepts and write various programs using Java Language.
CS4TPC03	Data structure and Programming Methodology	They are important because, they are what you do after you've become a computer scientist. Without, data structures and algorithms, you will be only a basic level coder. As computer scientist, our job is to perform operations on data, we basically perform the following three steps :- Take some input 2) Process it 3) Give back the output. The input can be in any form, for e.g. while searching for directions on Google maps, you give the starting point and the destination as input to Google maps, while logging in to Facebook, you give your email and password as input and so on. To make this process efficient, we need to optimize all the three steps. As you can guess, the most we can optimize is the 2nd step, which is where we have Data structures and algorithms. Data structures refers to the way we organize information on our computer. With a slight thinking, you can guess that the way

		we organize information can have a lot of impact on the performance. Take for example, a library. Suppose, you want to have a book on Set Theory from a public library, to do that you have to first go to the maths section, then to set theory section. If these books are not organized in this manner and just distributed randomly then it will be really a cumbersome process to find a book on set theory. By study of this subject we improve our programming skill and algorithm writing of any problems.
CS4TOE01	OE-1(System Software)	System Software is mainly concerned with the study of various application software's and system software's.
CS4TOE02	OE-2(Computer Organization Architecture)	Discuss the basics concept of computer organization & architecture,Understand the concept of input/output organization Understand the computer arithmetic's and its implementation, Learn about various types of memory organization, Understand the concept of processor organization, Learn the concepts of pipelining, Understand the concept of multiprocessor system
CS4LPPC01	Data communication and Network Lab	Students will be able to: Understand fundamental underlying principles of computer networking Analyze performance of various communication protocols. Practice packet /file transmission between nodes and Networks.
CS4LPPC02	Java Programming Lab	At the End of the course student understand the skills for writing program in java and can able to write small programs using Java Language
CS4LPPC03	Data structure and Programming Methodology Lab	To introduce various techniques for representation of the data in the real world. To develop application using data structure algorithms. Compute the complexity of various algorithms. various data structures. Students will be able to implement Linear

		and Non-Linear data structures. Implement appropriate sorting/searching technique for given problem. Design advance data structure using Non-Linear data structure

BTech IInd year (AICTE)

Objectives:

The main objectives of second year syllabus are as follows: • To start core branch subjects of computer Science and engineering , technology and other required disciplines. • Experiments are conducted of various subject to give the practical exposures • To provide the approach and programming skills and introduction of python and Weka environment.

Code	Subject Name	Course Out come
CS03TES03	Computer Organization Architecture	Discuss the basics concept of computer organization & architecture Understand the concept of input/output organization Understand the computer arithmetic's and its implementation Learn about various types of memory organization Understand the concept of processor organization Learn the concepts of pipelining Understand the concept of multiprocessor system
CS03TPC01	Digital logic & Design	This system facilitates the design of electronic circuits that convey information, including logic gates. Digital Logic gate functions include and, or and not. The value system translates input signals into specific output. Digital Logic facilitates computing, robotics and other electronic applications. Digital Logic is a subject where we learn about the designing of combinational and sequential logic circuits (Hardware components of a computer), Boolean Algebra, Basic gates etc. which in turn is helpful in designing of a computer. Concepts like counters(asynchronous, synchronous), flip flop, registers, and multiplexers, de-multiplexers, encoder, decoder, ROM etc

CS03TPC02	IT workshop (C++ /python)	Course outcomes are : Understand the basic concepts of Object oriented programming , design issues, Reusability's ,file input output handing i. OOPs Programming aspects. The research tools basics. and introduction of basics of python and Weka
CS03TPCO3	Computer Network	Students will able to: Describe the functions of each layer in OSI and TCP/IP model. Explain the functions of different layers, paradigms and Protocols. Explain the types of transmission media with real time applications .
CS03TBS05	Mathematics III	Students will found the mathematical knowledge of functions of Complex variables, Fourier series, Laplace and Fourier Transformations, Wavelet transformations
CS03PPC01	IT workshop (C++ /python)	At the End of the course student understand the skills for writing program in TC++ using oops concepts and can able to write small programs using TC++. Students will also know the environments of python and Weka.
CS03PPC02	Digital Logic & Design Lab	Analyse and design combinational circuit. Minimize the Boolean algebra and design it using logic gates. Realise given function using combinational circuit. Design and develop sequential circuits Implement digital systems using programmable logic devices
CS03PES05	Computer Network Lab	Students will be able to: Understand fundamental underlying principles of computer networking Analyze performance of various communication protocols. Practice packet /file transmission between nodes and Networks.
Semester IV (AICTE)		

CS04TPC04	Discrete Mathematics	Upon completion of this course, the students will be able to Analyze the problem and identify the structures required to generate the mathematical solution. Apply the mathematical logic, predicate rules to design an abstract system for theorem proof. Apply mathematical foundations, algorithmic principles in modelling and design in computer based system.
CS04TES04	Electronic Device & Circuits	This subject is considered as a fundamental subject in understanding the concept of diode ,transistor ,FET etc , their applications. This subject helps the students to understand Low frequency amplifier, High frequency amplifier , concept of signal generators and feedback, Basics and application of Op-amp.
CS04TPC05	Operating System	The students will be able to Master functions, structures and history of operating systems Master understanding of design issues associated with operating systems Master various process management concepts including scheduling, synchronization, deadlocks Be familiar with multithreading Master concepts of memory management including virtual memory Master issues related to file system interface and implementation, disk management
CS04TPC06	Data Structure & Algorithms	They are important because, they are what you do after you've become a computer scientist. Without, data structures and algorithms, you will be only a basic level coder. As computer scientist, our job is to perform operations on data, we basically perform the following three steps :- Take some input 2) Process it 3) Give back the output. The input can be in any form, for e.g. while searching for directions on Google maps, you give the starting point and the destination as input to Google maps, while logging in to Facebook, you give your email and password as input and so on. To make this process efficient, we need to optimize all the three steps. As you can

		guess, the most we can optimize is the 2nd step, which is where we have Data structures and algorithms. Data structures refers to the way we organize information on our computer. With a slight thinking, you can guess that the way we organize information can have a lot of impact on the performance. Take for example, a library. Suppose, you want to have a book on Set Theory from a public library, to do that you have to first go to the maths section, then to set theory section. If these books are not organized in this manner and just distributed randomly then it will be really a cumbersome process to find a book on set theory. By study of this subject we improve our programming skill and algorithm writing of any problems.
CS04TPC07	System Software	System Software is mainly concerned with the study of various application software's and system software's.
CS03PPC01	Data Structure & Algorithms	To introduce various practical's on techniques for representation of the data in the real world. To develop application using data structure algorithms. Compute the complexity of various algorithms. various data structures. Students will be able to implement Linear and Non-Linear data structures. Implement appropriate sorting/searching technique for given problem. Design advance data structure using Non-Linear data structure
CS03PPC02	Operating System	Practical understanding of the concepts, structure and design of operating Systems. Practical of operating system design and its impact on application system design and

		performance. Practical competence in recognizing and using operating system features.
CS03PES05	Electronic Device & Circuits	Practical experiments and demonstration on the basis of Theory studied. Feed back emplifier ,bipolar junctions, Operational Amplifiers

BTech IIIrd year (CBCS)
Objectives:
The main objectives of third year syllabus are as follows: • To provide bases for the development of software ,Designing, modelling and complete life cycle . To first exposure for projects handling in Database and GUI managements ,Java etc • Basic understanding of necessary knowledge of core subjects operating systems ,Theory of Computations ,underlying analysis of computer processing. Study of subjects important for GATE and for technical examinations.

Code	Subject Name	Course Out come
CS5TPC01	RDBMS	Understand database concepts and structures and query language. Understand the E R model and relational model. To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS. Understand Functional Dependency and Functional Decomposition. Apply various Normalization techniques
CS5TPC02	Foundations of Computer Sciences	Student will lear, how problems can be solved using algorithms. These studies are used to understand the way an algorithm is meant to work, and to actually prove it works through analyzing problems that may arise with the technique used and finding solutions to these problems
CS5TPE01	PE-II(VB.NET)	Understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic. Describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE). Create applications using Windows Forms.
CS5TPE02	PE-I(Parallel Computing)	After knew that Students shall be spontaneously able to design the multiprocessor system with various

		hardware electronics circuit like CU, ALU, RAM etc. After knew and will be able to design new interconnection network which connects the processors and other devices like input and output devices (I/O) After knew that students shall be spontaneously try and invented a new type of pipeline processor architecture in which throughput can be as better as possible than all other. Students shall be capable to how to combine the techniques of parallelism to obtain a more power full architecture as a outcome. Course outcomes are skills and abilities to make parallel algorithm and program to enhance the speed up.
CS5TOE01	OE-1(MIS)	Understand the use of Information System in the area of Management and can be able to apply it in better way. At the End of the course student knows how to work Effectively in their profession.
CS5LPC01	RDBMS Lab	Understand database concepts and structures and SQL query language. To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.
CS5LPC02	Advance Programming Lab	Students will be able to understand write Fortran Programs and can conduct practical's on computer Oriented Numerical methods
CS5LPR01	Mini Project Lab-1 in VB.Net	Students will be familiar with Practical aspects software development specially using VB.Net as front end.
Semester VI(CBCS)		
CS6TPC01	Operating System	Role of operating system in their management policies and algorithms. Understand the process management policies and scheduling of processes by CPU Evaluate the requirement for process synchronization and coordination handled by operating system Describe and analyze the memory management and its

		allocation policies. Identify use and evaluate the storage management policies with respect to different storage management technologies.
CS6TPC02	Design and Analysis of Algorithm	After knew that students shall be calculate and obtain the running time complexity and space complexity of any kind of algorithm. After knew that students shall be design divide and conquer and greedy algorithm for problems and at the same time they will able to know that which data structure are adequate to enhance the running time complexity. After knew that Students shall be spontaneously able to described and analyze the dynamic-programming (DP) algorithm moreover when an algorithmic design situation calls for it and can construct a new DP algorithm for given a particular problem. After knew that Students shall be spontaneously able to construct and design branch and bound and backtracking algorithm for a particular problem on the basis of the problem nature analysis and requirement. After knew that Students shall be spontaneously able to identified which problems are P,NP,NPC and NPH. Also implement the string matching program.
CS6TPE01	PE-I (Microprocessor and Interfaces)	To present the fundamental concepts of microprocessors and their architecture. Illustrate the techniques of interfacing between the processor and peripheral device so that they themselves can design and develop a complete microprocessor based system. To enable the students to write efficient programs in assembly level language of the 8086. To present to the students the utility of faster modes of data transfer and techniques.
CS6TPC02	PE-II(Software Engineering)	At the end of the course students can able to develop small software
CS6TOE01	OE-I (Computer	Interactive computer graphics allows the

	Graphics)	physician to interpret this large volume of data in new and useful ways. Computer graphics has also expanded the boundaries of art and entertainment. The importance of computer graphics lies in its applications. In engineering applications (e.g. automotive and aeorspace), the ability to quickly visualize newly designed shapes is indispensible. Before the advent of computer graphics, designers built expensive prototypes and time-consuming clay models. Now, designers can interactively view and modify models of their shapes using a computer. Medical imaging is another application where computer graphics has proven valuable. Recent advances in imaging technology such as computer tomography and magnetic resonance imaging allow physicians to take 3D Xrays of the human body. Interactive computer graphics allows the physician to interpret this large volume of data in new and useful ways. Computer graphics has also expanded the boundaries of art and entertainment. Movies such as *Jurassiac Park* make extensive use of computer graphics to create images that test the bounds of imagination. The development of computer graphics has made possible virtual reality, a synthetic reality that exists only inside a computer. Virtual reality is fast becoming an indispensable tool in education. Flight simulators are used to train pilot for extreme conditions. Surgical simulators are used to train novice surgeons without endangering patients.
CS6LPC01	Operating System Lab	Students can do practical's on UNiX command and windows environment. Further practical's on process management policies and scheduling of processes by CPU.,Linux /Unix /windows /DoS commands
CS6LPC02	Design and Analysis Lab	Students shall be able to implement recursive algorithm with array and stack data structure in programming language. Students shall implement divide and

		conquer algorithm and greedy in any programming language by using graph, stack and array data structure. Students shall implement the some problems which are based on dynamic programming technique. Students shall implement some problems like travelling sales man problem and heap sorting by using adequate data structure like heap, Fibonacci and graph Students shall be understand and able to implement some non deterministic problem like clique and TSP etc
CS6LPR01	Mini Project Lab	Know the processes of problem Identification ,Designing and analysis documents E-R diagram, DFD, Flow Chart, documentations, also they can classify different types of software requirements and their gathering techniques.

BTech IV th year (CBCS)
Objectives :

To offer latest subjects necessary for their further studies ,employability or research. Comprehensive projects given and presentation skills. Final finishing and preparing students for their successful carrier .

Code	Subject Name	Course Out come
CS7TPC01	Compiler Designing	At the end of the course Student can able to understand the compiler construction skill
CS7TPC02	Artificial Intelligence	knowledge of the building blocks of AI as presented in terms of intelligent agents. Various real life problem domains using logic based techniques and use this to perform inference or planning.
CS7TPE01	PE-1(Data Mining)	Students will be able to apply various algorithms to calculate frequent sets, To form various clusters using various clustering based algorithms. It is basically used to solve practical problems, analyse the problem domain and use the data collected in enterprise and apply the appropriate data mining technique, interpret and visualize the result.

CS7TPE02	PE-2(WSN)	Students will able to: Explain the basic concepts of wireless network. Explain the design considerations for deploying the wireless network infrastructure. Differentiate and support the security measures, standards. Services and layer wise security considerations.
CS7TOE01	OE-1(Web Technologies)	Web technology is the establishment and use of mechanism that make it possible for different computers to communicate. You can also share resources or the building blocks of an effective computer networking system. Well as you know that now everything needs internet to get access in many things. Of course the web technology being very important in this modern world. Some web technologies may be complicated but without it a website wouldn't be nice and having a good UI. Web technologies including mark-up languages such as HTML, CSS, XML, CGI, JavaScript, and HTTP. Programming language, web servers, databases, and business applications are also parts of web technologies. There are some benefits that we can get from web technologies. For example it can make you easier to update your content from anywhere at any time. You can also improve your own website with the SEO (Search Engine Optimization) right on the same page where you edit the page. And its reduces your cost , it takes much less time to build a site and it means a lower cost to you. Web technology is use by many different people. But these days teachers rely on it to keep their lesson plans. And to teach their classes without web technology some lessons couldn't be taught. Understanding what a web server is , how web pages are produced and how computers communicate can help companies visualise their challenges and work productively towards solving them.

CS7LPC01	Compiler Design Lab	At the end of the course Student will able to construct an executable Compiler.
CS7LPC01	Artificial Intelligence Lab	Students get practicle exposures on the concepts of ANN, Genetic Programming ,pattern recognition
CSTLPR01	Seminar	To improve the student's understanding ,software knowledge by involving practically/ internship, communication and presentation of knowledge and technical skills of the students.
CS7LPR02	Minor Project Lab	Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.
Semester VIII (CBCS)		
CS8TPC01	Network Security	Understanding the Model for Network Security Services Comprehend different block ciphers and the data encryption standard algorithms e.g. DES,AES , blowfish,RC5. Apprehend the principles of public key cryptography Understand different WEB & IP Security protocol. Showcase different Intrusion Techniques.
CS8TPE01	PE-1(TCP/IP)	**Students will able to:** Describe the functions of each layer of TCP/IP model. Explain the functions of different layers, paradigms and Protocols. Explain the types of transmission media with real time applications Explain the Quality of Services provided by Network layers. Explain the congestion control mechanism provided by Network layers.
CS8TOE01	OE-1(ERM)	Understand the basic concepts of ERP. Identify different technologies used in ERP. Understand and apply the concepts of Information flows Discuss the benefits of ERP Understand and implement the ERP life cycle. Case studies.
CS8LPR01	Major Project	To enable students to use all concepts of IT in creating a solution for a problem Formulate and propose a plan for creating a solution for the research plan identified To report

		and present the findings of the study conducted in the preferred domain
CS8LPCO1	Network Security Lab	Understanding the Model for Network Security Services Comprehend different block ciphers and the data encryption standard algorithms e.g. DES,AES , blowfish,RC5. Apprehend the principles of public key cryptography Understand different WEB & IP Security protocol.

BTech IV th year (Non-CBCS)
Objectives :

To offer latest subjects necessary for their further studies ,employability or research. Comprehensive projects given and presentation skills. Final finishing and preparing students for their successful carrier .

Code	Subject Name	Course Out come
CS4101	Compiler Design	At the end of the course Student can able to understand the compiler construction skill
CS4102	Web Technologies	Web technology is the establishment and use of mechanism that make it possible for different computers to communicate. You can also share resources or the building blocks of an effective computer networking system. Well as you know that now everything needs internet to get access in many things. Of course the web technology being very important in this modern world. Some web technologies may be complicated but without it a website wouldn't be nice and having a good UI. Web technologies including mark-up languages such as HTML, CSS, XML, CGI, JavaScript, and HTTP. Programming language, web servers, databases, and business applications are also parts of web technologies. There are some benefits that we can get from web technologies. For example it can make you easier to update your content from anywhere at any time. You can also improve your own website with the SEO (Search Engine Optimization) right on the same page where you edit the page. And its reduces your cost , it takes much less

		time to build a site and it means a lower cost to you. Web technology is use by many different people. But these days teachers rely on it to keep their lesson plans. And to teach their classes without web technology some lessons couldn't be taught. Understanding what a web server is , how web pages are produced and how computers communicate can help companies visualise their challenges and work productively towards solving them.
CS4103	Network Security	Understanding the Model for Network Security Services Comprehend different block ciphers and the data encryption standard algorithms e.g. DES,AES , blowfish,RC5. Apprehend the principles of public key cryptography Understand different WEB & IP Security protocol. Showcase different Intrusion Techniques.
CS4108	Open Elective – I(MIS)	Understand the use of Information System in the area of Management and can be able to apply it in better way. At the End of the course student knows how to work Effectively in their profession.
CS4116	Professional Elective – I(soft Computing)	Outline the different process carried out in fuzzy logic, ANN and Genetic Algorithms. Explain the concepts and meta-cognitive of soft computing. Apply Soft computing techniques the solve character recognition, pattern classification, regression and similar problems.
CS4104	Compiler Design	At the end of the course Student can able to construct an executable Compiler.
CS4105	Network Security	Understanding the Model for Network Security Services Comprehend different block ciphers and the data encryption standard algorithms e.g. DES,AES , blowfish,RC5. Apprehend the principles of public key cryptography Understand different WEB & IP Security protocol.
CS4106	Project (to be cont. in VIII Sem)	To enable students to use all concepts of IT in creating a solution or research issues

		Formulate and propose a plan for creating a solution for the research plan identified To report and present the findings of the study conducted in the preferred domain
Semester VIII(Non-CBCS)		
CS4201	Data Mining	Students will be able to apply various algorithms to calculate frequent sets, To form various clusters using various clustering based algorithms. It is basically used to solve practical problems, analyse the problem domain and use the data collected in enterprise and apply the appropriate data mining technique, interpret and visualize the result.
CS4202	GUI Programming (using VB.Net)	Understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic. Describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE).Create applications using Windows Forms.
CS4203	Artificial Intelligence & Expert Systems	knowledge of the building blocks of AI as presented in terms of intelligent agents. Various real life problem domains using logic based techniques and use this to perform inference or planning.
CS4206	Professional Elective – II(ERM)	Understand the basic concepts of ERP. Identify different technologies used in ERP. Understand and apply the concepts of Information's, Discuss the benefits of ERP Understand and implement the ERP life cycle. 6. Case studies
CS4204	GUI Programming Net (using VB.Net)	Practical exposure on Graphical User Interface programming development using VB.Net ,its analysis
CS4205	Project	To give the real life exposure on software modelling and development in the relevant field or to give the exposures on research problems and analysis, solutions ,research methodology ,publishing research paper

Objectives and Outcomes