EINSTEIN ACADEMY OF TECHNOLOGY AND MANAGEMENT	
At: Baniatangi, PO: Bajapur, Khurdha, Bhubaneswar, PIN: 752060	
Department of Computer Science & engineering	
COs of Subjects (2016-20 Batch Students)	

C101-ENGLISH COMMUNICATION SKILL

After Completion of this Course a student will be able to ..

CO1	Define the role of communication in the present day world.
CO2	Understand the fundamentals of Grammar for error free written communication.
CO3	Use basic knowledge in Phonetics and Pronunciation skills for better Communication.
CO4	Illustrate the diversified traditions and cultures through interpersonal communication.
CO5	Evaluate student's competency through various writing skills.
CO6	Develop the confidence to make communication in all the situations with knowledge on soft skills.

C123-APPLIED MATHEMATICS-I

After Completion of this Course a student will be able to ..

CO1	Apply the knowledge of calculus, Gamma and Beta functions for analyzing engineering problems.
CO2	Analyze the first order differential equations using standard methods and its application in engineering fields.
CO3	Demonstrate various physical models through higher order differential equation
CO4	Explain linear differential equations with variation of parameters.
CO5	Describe series solution of differential equations and explain application of Bessel's function.
CO6	Develop the essential tool of different matrices with matrix algebra and to compute eigen values and eigen vectors required for matrix diagonalization process.

C124-APPLIED PHYSICS

After Completion of this Course a student will be able to ..

CO1	Solve the classical and wave mechanical problems.
CO2	Demonstrate various types of oscillation and their application in various processes
CO3	Formulate and solve the engineering problems on electromagnetism.
CO4	Correlate the different ideas in solving the problems of classical physics in their parent streams.
CO5	Learn physics behind various types of lasers and their characteristics.
CO6	Analyze the quantum physics and their importance in engineering platform

C129-BASICS OF CIVIL ENGINEERING

After Completion of this Course a student will be able to ..

CO1	Understand the property, use, advantage and disadvantage of diffent material used for construction.
CO2	Analyse different types of materials will be used for construction, their proportions, different types of test & experiments and importance of quality.

CO3	Analyse the importance of surveying, its requirements and applications in civil engineering.
CO4	Differentiate the types of soil and its classifications, their properties, strengths and Types of foundations.
CO5	Explain the ideas of Irrigation engineering and types of irrigation structures like: canals, siphons, weirs, dams etc.
CO6	Learn about construction materials, role of transportation as well as of water and its conservation.

C125-ENVIRONMENTAL STUDIES & HEALTH CARE ENGINEERING

After Completion of this Course a student will be able to ..

CO1	Understand the ecological system along with the processes involved in it
CO2	Evaluate the effect of the pollutants on the atmosphere, water and soil.
CO3	Analyze strategies to control , reduce and monitor pollution
CO4	Apply the knowledge gained by studying the sources, properties to manage the solid and hazardous wastes.
CO5	Understand the occupational health and safety measures taken in some industries
CO6	Summarize the causes, prevention and control of some diseases.

C113-ENGLISH COMMUNICATION SKILL LAB

After Completion of this Course a student will be able to ..

CO1	Explain and facilitate computer-aided multi-media instruction enabling individualized and independent language learning.
CO2	Interpret the students to the nuances of English speech sounds, word accent, intonation and rhythm.
CO3	Change a consistent accent and intelligibility in their pronunciation of English by providing an opportunity for practice in speaking.
CO4	Develop the fluency in spoken English and neutralize mother tongue influence.
CO5	Compare the abilities of students with real life situations faced by the students.
CO6	Modify students to use language appropriately for interviews, group discussion and public speaking.

C132-APPLIED PHYSICS LAB

After Completion of this Course a student will be able to ..

CO1	Explain the value of g on various places.
CO2	Summarize the elasticity of various materials.
CO3	Analyses the characteristics of various diode.
CO4	Interpret the law of string.
CO5	Determine the wavelength of light.
CO6	Illustrate the viscosity of liquid.

C133-BASICS OF CIVIL ENGINEERING LAB

After Completion of this Course a student will be able to ..

CO1	Determine the shape, size and Compressive strength of brick.
CO2	Learn the testing of chain and measurement of correct length of the line, Bearing of a line.

CO3	Know the importance of total station and its application.	
CO4	Determine Setting time of cement	
CO5	Evaluate the tensile strength of reinforcing steel.	
CO6	Calculate Compressive strength of concrete.	

C134-COMPUTER LAB-I

After Completion of this Course a student will be able to ..

CO1	Analyze problems, design and implementing algorithmic solutions.
CO2	Understand and trace the execution of programs written in C language.
CO3	Write the C code using a modular approach and recursive concepts.
CO4	Explain the dynamics of memory by the use of pointers and create/update basic data files.
CO5	Design C Programs for problems.
CO6	Write and execute C programs for simple applications.

C121-ENGINEERING WORKSHOP

After Completion of this Course a student will be able to ..

CO1	Get a good knowledge and experience about the working conditions at shop floor level.
CO2	Practice on fabrication of components through various operations in fitting and welding.
CO3	Identify and apply suitable tools for various operations in lethe machine.
CO4	Get the knowledge of working in machine shop such as milling machine, shapper etc.
CO5	Study and practice on machine tools and their operations
CO6	Acquire the Knowledge about safety in workshop and industry.

C126-PROFESSIONAL ETHICS

After Completion of this Course a student will be able to ..

CO1	Analize the basic terms of moral ethics and ethical delemma by reading the theories of kohlberg and piaget.
CO2	Differentiate between profession and Professionalism.
CO3	Correlate the role and responsibilities of professionals and their duties towards organization
CO4	Plan the safty risk by discussing the risk benefit analysis with different case studies
CO5	Identifing the causes of an accident and preventive measures to be taken
CO6	Rewrite the meaning and significance of ethical code and its limitation.

C127 -APPLIED MATHEMATICS-II

After Completion of this Course a student will be able to ..

CO1	Apply the knowledge of Laplace transformation and its use in getting solution to differential equations.
CO2	Use of periodic functions and Fourier series, Fourier intergral
CO3	Describe Fourier transform to analyze circuit and system communication.
CO4	Illustrate the concept of vector differential calculus to understand the solenoidal and irrotational vectors
CO5	Illustrate the concept of tangent and arclength,gradient.
CO6	Solve the Vector differential and integral calculus problem.

C128-APPLIED CHEMISTRY

After Completion of this Course a student will be able to ..

CO1	Understand the basics of quantum mechanical concept.
CO2	Apply the principles of spectroscopy in predicting absorption and relative terms in diatomic molecule.
CO3	Evaluate the phase diagram of some one and two component systems by applying Phase Rule.
CO4	Classify the organometallics .
CO5	Analyse the quantitative aspects of fuel combustion by understanding the fundamental concepts of fuels.
CO6	Evaluate the corrosion of a material by using the the fundamental concepts of corrosion chemistry.

C130-BASICS OF MECHANICAL ENGINEERING

After Completion of this Course a student will be able to ..

CO1	Understand basics of thermodynamics
CO2	Application of basics of thermodynamics
CO3	Illustrate basics of heat transfer, refrigeration and internal combustion engine
CO4	Understand basics of Robotics
CO5	Understand the basics of Mechanical measuring instruments
CO6	Mechanism of power transfer through belt,rope,chain and gear drives

C131-ELECTRICAL & ELECTRONICS ENGINEERING

After Completion of this Course a student will be able to ..

CO1	Anlyze the basic properties of electrical circuit elements and evaluate circuit parameters using network theorems.
CO2	Explain the fundamentals relating to AC circuit and solve AC circuit problems along with resonating conditions.
CO3	Explain the basic properties of electromagnetic circuit and their applications.
CO4	Apply the basic concept of MOS FET,biasing of BJT and FET for analysis and design of the basic transistor amplifier circuits,FET circuits.
CO5	Implement knowledge of OP-AMP with basic circuits.
CO6	Apply basic knowledge of Boolean algebra,basicgates,logic circuits.

C135-APPLIED CHEMISTRY LAB

After Completion of this Course a student will be able to ..

CO1	Determine the amount of a compound / ion present in a given mixture / compound.
CO2	Understand the Iodometric titrations.
CO3	Analyse water sample to know some of its characteristics.
CO4	Evaluate the suitability of a lubricant/fuel by determining some general property.
CO5	Create a drug.
CO6	Aplly the knowledge gained to determine the strength of a solution.

C136-BASICS OF MECHANICAL ENGINEERING LAB

After Completion of this Course a student will be able to ..

CO1	Study the fundamental of IC engine
CO2	Demonstrate pressure measuring instruments of fluid.
CO3	Study on analytical knowledge about refrigerator and air conditioner.
CO4	Demonstrate fundamental knowledge of automobile transmission system.
CO5	Understand about the construction and function of gear and gear train.
CO6	Understand the working and construction of steam power plant.

C137-COMPUTER LAB-II

After Completion of this Course a student will be able to ..

CO1	Design a document using MS_WORD.
CO2	Demonstrate and compute the data using Spread Sheet
CO3	Implement the basic elements of a C program including arithmetic and logical operators, functions, control structures, and arrays
CO4	Execute a walk-through of a program containing pointers,Structures, Unions and File Concepts.
CO5	Design a program related to challenging questions.
CO6	Write and execute C programs for simple applications

C138-ENGINEERING GRAPHICS LAB

After Completion of this Course a student will be able to ..

CO1	Develop adequate competence in visualization, interpretation and expression of drawing of engineering parts and objects.
CO2	Perform free hand sketching of basic geometrical constructions and multiple views of objects.
CO3	Gain knowledge on universally accepted conventions and symbols for their usage in technical drawings.
CO4	Draw orthographic projection of lines and plane surfaces.
CO5	Draw projection of solids and perform development of surfaces.
CO6	Gain knowledge about Computer aided drafting.

C139-NSS

After Completion of this Course a student will be able to ..

CO1	Understand themselves in relation to their community.
CO2	Identify the needs and problems of the community and involve them in problem solving process.
CO3	Develop among themselves a sense of social and civic responsibility.
CO4	Utilize their knowledge in founding practical solution to individual and community problems.
CO5	Acquire leadership qualities and democratic attitude.
CO6	Develop capacity to meet emergencies and natural disasters.

C203-ENGINEERING ECONOMICS

After Completion of this Course a student will be able to ..

CO1	Define the basic concept of micro and macroeconomics, engineering economics and their application in engineering economy.

CO2	Understand the law of demand and law of supply.
CO3	Understand the environment and financial systems of the country and its impact on business, society and enterprise.
CO4	Analyze time value of money using engineering economy factors.
CO5	Gain knowledge of economics and engineering principles to solve engineering problems and to evaluate engineering projects considering upon depreciation, taxes and inflation.
CO6	Apply depreciation methods for individual/industrial/ public alternatives

C221-DISCRETE STRUCTURES

After Completion of this Course a student will be able to ..

CO1	Demonstrate the ability to write and evaluate a proof or outline the basic structure of and give examples of each proof technique described.
CO2	Understand the basic principles of sets and operations in sets
CO3	Apply counting principles to determine probabilities
CO4	Demonstrate an understanding of relations and functions and be able to determine their properties.
CO5	Demonstrate different traversal methods for trees and graphs
CO6	Model problems in Computer Science using graphs and trees.

C222-SWITCHING THEORY & LOGIC DESIGN

After Completion of this Course a student will be able to ..

CO1	Apply basic knowledge of Boolean algebra, basic gates, logic circuits.
CO2	Apply the basic knowledge about K-Map to minimize different Boolean functions.
CO3	Implement and analyse different combinational circuits such as adders, subtractors, decoders, encoders, multiplexers, and demultiplexers.
CO4	Implement and analyse different flip-flops.
CO5	Implement and analyse different counters and registers with a basic knowledge about flip-flops.
CO6	Design different combinational and sequential circuits using state machines.

C219- OBJECT ORIENTED PROGRAMMING USING JAVA

After Completion of this Course a student will be able to ..

CO1	List and use various Object Oriented Programming concepts for problem solving.
CO2	Describe various fundamental tokens as well as linear data structure using object oriented programming.
CO3	Solve problems on string and inheritance by applying different library function.
CO4	Analyze and Design program based on concept of multithreading and abstraction
CO5	Evaluate various GUI component using Applet and AWT to solve real world problem.
CO6	Design & Create various application based on swing by using javafx.

C212-SYSTEM PROGRAMMING

After Completion of this Course a student will be able to ..

CO1	Identify the role played by system software such as assembler, interpreter, linker, loader and compiler in the development of IT solution.
CO2	Explain the machine structure, memory register, data, instruction, and machine language.

CO3	Develop an elementary assembler and describe various concepts of assembler and macro processor.
CO4	Analyze how linker and loader create and executable program from an object module.
CO5	To understand how linker and loader create an executable program from an object module created by assembler and compiler. e) To know various editors and debugging techniques.
CO6	To know various editors and debugging techniques

C220- SOFTWARE ENGINEERING

After Completion of this Course a student will be able to ..

CO1	Assess professional and ethical responsibility, software engineering principles and activities involved in building large software programs
CO2	Demonstrate process of requirements gathering, classification, specification & validation.
CO3	Design models for software system, component and process within realistic constraints.
CO4	Apply cost estimation and time scheduling for quality project activities.
CO5	Apply, design, implement, verify, validate and maintain software systems with metrics.
CO6	Recognize the need for agile software development

C225- COMPUTER ORGANIZATION & ARCHITECTURE

After Completion of this Course a student will be able to ..

CO1	Visualize the basic building blocks of computer.
CO2	Analyze the programs as sequence of machine instructions.
CO3	Explore different ways of communicating with I/O devices and interfaces
CO4	Design and evaluate the performance of memory systems.
CO5	Demonstrate arithmetic and logical operations with integer and floating point operands.
CO6	Analyze the basic functional units of processor

C210- DESIGN & ANALYSIS OF ALGORITHMS

After Completion of this Course a student will be able to ..

CO1	Demonstrate Quick sort and Merge sort and calculate the time required to sort the elements
CO2	Implement the topological ordering of vertices, travelling salesman problem and Knapsack problem
CO3	Construct programs to check graph is connected or not using BFS and DFS methods
CO4	Experiment finding the minimum cost of spanning tree using Prim's algorithms and shortest path using Dijkstra' algorithm.
CO5	Analyze the efficiency of algorithms using time and space complexity theory
CO6	Implement programs on divide and conquer, decrease and conquer

C224- FORMAL LANGUAGE & AUTOMATA THEORY

After Completion of this Course a student will be able to ..

CO1	Understand, design and convert FA for a given RL
CO2	design RE for given language and convert RE to FA.
CO3	design grammars, and simplify the grammar.
CO4	Analyze and design CFL and CFG.

CO5	Understand the working and the applications of TM.
CO6	Classify a problem with respect to different models of Computation.

C223- DATABASE SYSTEM

After Completion of this Course a student will be able to ..

CO1	Represent database with different data modeling concepts.
CO2	Design simple database systems.
CO3	Use Structured Query Language (SQL) for building and manipulating database.
CO4	Develop application to interact with databases.
CO5	Demonstrate the use of concurrency control and transaction processing.
CO6	Understand the objectives of data and information management.

C226- OBJECT ORIENTED PROGRAMMING USING JAVA LAB

After Completion of this Course a student will be able to ..

CO1	Able to write programs for solving real world problems using java collection framework
CO2	Able to write programs using abstract classes.
CO3	Able to write multithreaded programs.
CO4	Able to write GUI programs using swing controls in Java
CO5	Demonstrate the Multithreaded programs.
CO6	Demonstrate event handling mechanism.

C227-SYSTEM PROGRAMMING LAB

After Completion of this Course a student will be able to ..

CO1	Understand the structure and design of assemblers, linkers and loaders.
CO2	Develop programs to create symbol table for assembly and high level language program.
CO3	Implement Single Pass Assembler.
CO4	Explore features of debug command.
CO5	Use of LEX and YACC Tools.
CO6	Study the architecture of a hypothetical machine, its assembly language, macro language.

C228- SOFTWARE ENGINEERING LAB

After Completion of this Course a student will be able to ..

CO1	Able to understand mix proportioning techniques for field applications.
CO2	Able to apply mix proportion principles to design a concrete mix for field applications.
CO3	Able to analyse characteristics of mix constituents and design a concrete mix for field applications.
CO4	To impart state-of-the-art knowledge on Software Engineering and UML in an interactive manner through the Web
CO5	Present case studies to demonstrate the practical applications of different concepts
CO6	Provide a scope to the students where they can solve small, real life problems

C204-ORGANISATIONAL BEHAVIOUR

After Completion of this Course a student will be able to ..

CO1	Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.	
CO2	Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.	
CO3	Analyze the complexities associated with management of the group behavior in the organization.	
CO4	Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.	
CO5	Evaluate the impact of different cultures with in an organization	
CO6	Develop a new technique to implement organizational change for the achievement of organizational goal.	

C201-APPLIED MATHEMATICS - III

After Completion of this Course a student will be able to ..

CO1	Identify, formulate formula and analyze complex engineering problems and they can solve it.
CO2	Understand the processes of Interpolation of a polynomial by Lagrange, Newton divided, forward and backward difference.
CO3	Gain knowledge to analyze and formulate the formula to compare the exact and approximate value of an integral by different rules.
CO4	Solve an ordinary differential equation and a system of ordinary differential equations by using numerical Methods and extract the value of variables.
CO5	Evaluate the probabilistic problems by defining the probability formula and use them to solve Probability problems.
CO6	Gain knowledge about the Statistical hypothesis and analyze the regression and related them into estimate

C229- SWITCHING THEORY & LOGIC DESIGN LAB

After Completion of this Course a student will be able to ..

CO1	Apply knowledge about logic gates to investigate the behaviour of different logic gates and analyse the gate level minimization.
CO2	Design and implement different combinational circuits using NAND/NOR gates only or using minimized number of logic gates.
CO3	Design and implement different sequential circuits such as flip-flops, registers.
CO4	Design and implement different sequential circuits such as counters.
CO5	Design, test, and implement a binary multiplier.
CO6	Implement different combinational and sequential circuits using VHDL/Verilog/C/C++.

C230- DATABASE SYSTEM LAB

After Completion of this Course a student will be able to ..

CO1	To explain basic database concepts, applications, data models, schemas and instances.
CO2	To demonstrate the use of constraints and relational algebra operations.
CO3	To emphasize the importance of normalization in databases.
CO4	To facilitate students in Database design
CO5	To familiarize issues of concurrency control and transaction management

CO6	Design a commercial relational database system (Oracle, MySQL) by writing SQL using theystem

C231- FORMAL LANGUAGE & AUTOMATA THEORY LAB

After Completion of this Course a student will be able to ..

CO1	To understand set theory and countability.
CO2	To understand and apply finite automata and regular languages.
CO3	To understand and apply push-down automata and context-free languages.
CO4	To understand and appreciate the issues of computability
CO5	To develop improved communication and collaborative skills.
CO6	To understanding of regular and context-free languages (Comprehension)

C232- COMPUTER ORGANIZATION & ARCHITECTURE LAB

After Completion of this Course a student will be able to ..

CO1	Simulation of Verilog models for digital systems (including data path and control path design of a simple hypothetical CPU) using proprietory/open source simulation tools
CO2	simulation of ARM/MIPS32 programs using emuARM/SPIM simulator. It is expected that students perform the lab assignments seriously to have a more refined knowledge of the topics.
CO3	Practical experience on Xlinx
CO4	An ability to apply knowledge of mathematics, science, and engineering
CO5	An ability to use Xlinx tool
CO6	Design combinational circuits for basic components of computer system .

C216- DESIGN & ANALYSIS OF ALGORITHMS LAB

After Completion of this Course a student will be able to ..

CO1	Solve problems by applying appropriate algorithms
CO2	Analyze the efficiency of various algorithms.
CO3	Apply techniques of stacks and queues to solve problems
CO4	Develop a program that can be solved in many ways using different techniques
CO5	Identify and evaluate complex problems using principles of mathematics and engineering science
CO6	Design algorithms using divide and conquer, greedy and dynamic programming

C233- SKILL PROJECT AND HANDS ON

After Completion of this Course a student will be able to ..

CO1	Understand professional writing by studying management communicationcontexts and genres, researching contemporary business topics, analyzing quantifiable data discovered by researching, and constructing finished professional workplace documents
CO2	Participate actively in writing activities that model effective scientific and technical communication in theworkplace
CO3	Recognize, explain, and use the formal elements of specific genres of organizational communication: white papers, recommendation and analytical reports, proposals, memorandums, web pages, wikis, blogs, business letters, and promotional documents

CO4	Understand the ethical, international, social, and professional constraints of audience, style, and content for writing situations among managers or coworkers and colleagues of an organization, and between organizations, or between an organization and the public.
CO5	To identify promising new directions of various cutting edge technologies
CO6	To enable the students to develop comprehensive solution to issues identified in previous semester work and to meet the requirements as stated in project brief.

C321- CLOUD COMPUTING

After Completion of this Course a student will be able to ..

CO1	Implement different types of Virtualization technologies and Service Oriented Architecture systems
CO2	Elucidate the concepts of Cloud Computing architecture and its design challenges
CO3	Analyse the issues in Resource provisioning and Securizty governance in clouds
CO4	Choose among various cloud technologies for implementing applications
CO5	Install and use current cloud technologies
CO6	Describe the principles of Parallel and Distributed Computing and evolution of cloud computing from existing technologies

C322- ADVANCED COMPUTER ARCHITECTURE

After Completion of this Course a student will be able to ..

CO1	Understand, classify & evaluate performance of various computer architectures.
CO2	Analyze various techniques to enhance processors ability to exploit Instruction-level parallelism and its challenges.
CO3	Understand and analyze thread-level parallelism.
CO4	Analyze cache coherence problem and measure its performance.
CO5	Illustrate the memory organization, cache optimization and memory technology.
CO6	Perceive and enhance parallelism in modern computers.

C309- OPERATING SYSTEMS

After Completion of this Course a student will be able to ..

CO1	Identify the functionalities of OS and their categories
CO2	Evaluate multithread techniques and process scheduling algorithms
CO3	Demonstrate suitable techniques for resource management
CO4	Evaluate file system allocation and memory management techniques.
CO5	Review the protection mechanisms in processing environment
CO6	Explore the case studies on Operating Systems

C319- COMPUTER GRAPHICS

After Completion of this Course a student will be able to ..

CO1	Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
CO2	Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.

CO3	Use of geometric transformations on graphics objects and their application in composite form
CO4	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.
CO5	Extract scene with different clipping methods and its transformation to graphics display device.
CO6	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.

C320- ADVANCED JAVA PROGRAMMING

After Completion of this Course a student will be able to ..

CO1	Interpret enumerations and collections in advanced Java.
CO2	Build programs using collection framework.
CO3	Illustrate and develop String Handling methods in JAVA.
CO4	Apply Servlets to develop web applications.
CO5	Demonstrate database access using JDBC API.
CO6	Design reusable software components using JSP.

C325- COMPUTER NETWORK AND DATA COMMUNICATION

After Completion of this Course a student will be able to ..

CO1	Demonstrate the principles of application layer protocols.
CO2	Distinguish transport layer services and protocols.
CO3	Classify IP and Routing Algorithms in network layer.
CO4	Characterize the Wireless and Mobile Networks covering IEEE 802.11Standard.
CO5	Demonstrate streaming and working of Distribution servers.
CO6	Exemplify Network support for multimedia.

C308- COMPILER DESIGN

After Completion of this Course a student will be able to ..

CO1	Visualize the different phases of compilation.
CO2	Design of Lexical analyzers.
CO3	Design Parsers(LL, LR, CLR & LALR) and write yacc programs
CO4	Develop skills in generating syntax directed translation and different methods of intermediate representation.
CO5	Building an environment for compilation and generating intermediate code.
CO6	Analyze how to develop code & design a compiler for concise programming language.

C333- GREEN TECHNOLOGIES

After Completion of this Course a student will be able to ..

CO1	Enlist different concepts of green technologies in a project

CO2	Understand the principles of Energy efficient technologies
CO3	Ability to communicate effectively with a range of audiences
CO4	Identify the importance of life cycle assessment
CO5	Estimate the carbon credits of various activities
CO6	Recognize the benefits of green fuels with respect to sustainable development.

C327-ADVANCE LAB - I

After Completion of this Course a student will be able to ..

CO1	Analyze the pros and cons of applying the different design paradigms in different Contexts.
CO2	Exposure to randomization as a tool for developing algorithms.
CO3	Relevance of analysis to the design of efficient computer algorithms
CO4	Identify the computational issues and apply suitable algorithms to solve it effectively
CO5	Conceptualize and design efficient and effective algorithmic solutions for different realworld problems.
CO6	Given a computational problem, identify and abstract the programming task involved

C328- COMPUTER NETWORK AND DATA COMMUNICATION LAB

After Completion of this Course a student will be able to ..

CO1	Understand error detection technique using CRC.
CO2	Analyze and compare different routing protocols.
CO3	Implement connection-oriented and connectionless protocols in the network.
CO4	Analyze techniques to avoid congestion in the network.
CO5	Implement, analyze and evaluate networking protocols using NS-3 Tool.
CO6	Demonstrate security features in networks using RSA algorithm.

C324- WIRELESS SENSOR NETWORKS

After Completion of this Course a student will be able to ..

CO1	Understand and explain common wireless sensor node architectures.
CO2	Be able to carry out simple analysis and planning of WSNs
CO3	Demonstrate knowledge of MAC protocols developed for WSN
CO4	Understand and explain mobile data-centric networking principles.
CO5	Be familiar with WSN standards.
CO6	Evaluate the performance of transport control protocols for congestion detection and avoidance, reliability and control packet overhead parameters.

C312- INTERNET & WEB TECHNOLOGY

After Completion of this Course a student will be able to ..

CO1	Build dynamic web pages using JavaScript (Client side programming)
CO2	Create XML documents and Schemas.
CO3	Create web pages using XHTML and Cascading Style Sheets
CO4	Analyze a web page and identify its elements and attributes.
CO5	Create XML documents and Schemas.
CO6	Integrate java and server side scripting languages to develop web applications.

C326- COMPUTER GRAPHICS LAB

After Completion of this Course a student will be able to ..

CO1	Understand the basics of computer graphics, different graphics systems and applications of computer graphics.
CO2	Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CO3	Use of geometric transformations on graphics objects and their application in composite form.
CO4	Extract scene with different clipping methods and its transformation to graphics display device
CO5	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.
CO6	Render projected objects to naturalize the scene in 2D view and use of illumination models for this

C323- ADVANCED COMPUTER ARCHITECTURE LAB

After Completion of this Course a student will be able to ..

CO1	To become familiar with the architecture and organization of recent superscalar and VLIW processors and multicores.
CO2	To be able to select, given functional and non-functional requirements, the most appropriate computer architecture.
CO3	To be able to optimize code for a particular processor using, e.g., code scheduling and loop unrolling.
CO4	To become familiar with parallel computer architectures, cache coherence, memory consistency, etc.
CO5	To be able to design a memory hierarchy that optimizes latency, throughput, and or energy dissipation.
CO6	To be able to study recent advances in computer architecture, classify recent research articles, and report about it, both verbally and in writing.

C317- OPERATING SYSTEMS LAB

After Completion of this Course a student will be able to ..

CO1	Experiment with Unix commands and shell programming
CO2	Build 'C' program for process and file system management using system calls
CO3	Choose the best CPU scheduling algorithm for a given problem instance
CO4	Identify the performance of various page replacement algorithms
CO5	Develop algorithm for deadlock avoidance, detection and file allocation strategies
CO6	Able to build shell program for process and file system management with system calls.

C329-COMPILER DESIGN LAB

After Completion of this Course a student will be able to ..

CO1	Demonstrate a working understanding of the process of lexical analysis, parsing and other compiler design aspects.
CO2	Realize basics of compiler design and apply for real time applications
CO3	Introduce different translation languages

CO4	Understand the importance of code optimization
CO5	Know about compiler generation tools and techniques
CO6	Design a compiler for a simple programming language

C330-BUSINESS COMMUNICATION & SKILL FOR INTERVIEW

After Completion of this Course a student will be able to ..

CO1	Understand the purpose of professional interviews.
CO2	Identify the different types of professional interviews that leads to get a good job.
CO3	Obtain important tips on preparing for the professional interview.
CO4	Articulate the importance of oral-presentation.
CO5	Identify key principles in public speaking for business communication.
CO6	Create various types of business reports for corporate transactions.

C331-INDUSTRIAL LECTURE

After Completion of this Course a student will be able to ..

CO1	Generate a report based on the experiences and projects to be carried out
CO2	Demonstrate the ability to apply knowledge of Mathematics, Science, and Engineering Fundamentals.
CO3	Demonstrate competency in relevant engineering fields through problem identification, formulation and solution
CO4	Implement skills effectively in communication, in writing and using multimedia tools.
CO5	Organise and manage as an effective team member
CO6	Develop the ability to work as an individual and in group

C418- Internet Of Things (Iot)

After Completion of this Course a student will be able to ..

CO1	Describe what IoT is and how it works today
CO2	Describe different types of management information systems;
CO3	Design and program IoT devices
CO4	Use real IoT protocols for communication
CO5	Secure the elements of an IoT device
CO6	Design an IoT device to work with a Cloud Computing infrastructure.

C419- Soft Computing

After Completion of this Course a student will be able to ..

CO1	Understand about the basics of soft computing techniques
CO2	Explain about the neural network concepts
CO3	Explain about the fuzzy logic concepts
CO4	Understand the basic concepts of genetic algorithm
CO5	Describe about hybrid soft computing techniques and its applications
CO6	identify and describe soft computing techniques and their roles in building intelligent machines

C420- Mobile Computing

After Completion of this Course a student will be able to ..

CO1	Explain the basics of mobile Computing	
CO2	Describe the functionality of Mobile IP and Transport Layer	
CO3	Classify different types of mobile telecommunication systems	
CO4	Demonstrate the Adhoc networks concepts and its routing protocols	
CO5	Make use of mobile operating systems in developing mobile applications	
CO6	Explain fundamentals of wireless communications.	

C407- Cryptography & Network Security

After Completion of this Course a student will be able to ..

CO1	Describe network security services and mechanisms
CO2	Summarize the intrusion detection and its solutions to overcome the attacks
CO3	Classify the symmetric encryption techniques
CO4	Describe Various network security applications, IPSec, Firewall, IDS, Web security, Email security, and Malicious software etc.
CO5	Evaluate the authentication and hash algorithms.
CO6	Discuss authentication application

C412-SEMINAR-I

After Completion of this Course a student will be able to ..

CO1	Apply effective strategies in literature searches for the seminar topics and its abstract.
CO2	Analyse, design and develop a system/component/ process for the required needs under the realistic constraints.
CO3	Coherent step-by-step plan for the design under guide supervision.
CO4	Evaluate data and analyse the results using critical thinking skills.
CO5	mprove on his/her own learning process and extract the new technologies and adopt the appropriate knowledge
CO6	Write technical documents and give oral and visual presentations related to the work completed.

C413-MINOR PROJECT

After Completion of this Course a student will be able to ..

CO1	Identify the issues related with the recent trends in the field of computer science and its applications
CO2	formulate the problem definition, analyze and do functional simulation of the same
CO3	design, implement, test and verify the proposed solution related to problem definition
CO4	compile, comprehend and present the work carried out
CO5	Analyze the pros and cons of applying the different design paradigms in different Contexts.
CO6	Exposure to randomization as a tool for developing algorithms.

C421- E-Commerce & ERP

After Completion of this Course a student will be able to ..

CO1	Describe the major types of E-commerce.
CO2	Describe different types of management information systems;
CO3	Analyse the processes of developing and implementing information systems;
CO4	Describe the ethical, social, and security issues of information systems;

CO5	Analyze the impact of E-commerce on business models and strategy.	
CO6	Explain the process that should be followed in building an E-commerce presence.	

C422- Expert Systems

After Completion of this Course a student will be able to ..

CO1	Describe the modern view of AI as the study of agents that receive percepts from the Environment and perform actions.
CO2	Demonstrate awareness of informed search and exploration methods.
CO3	Explain about AI techniques for knowledge representation, planning and uncertainty Management
CO4	Develop knowledge of decision making and learning methods
CO5	Describe the use of AI to solve English Communication problems.
CO6	Explain the concept of Knowledge Representation

C414- SEMINAR-II

After Completion of this Course a student will be able to ..

CO1	Apply effective strategies in literature searches for the seminar topics and its abstract
CO2	Analyse, design and develop a system/component/ process for the required needs under the realistic constraints.
CO3	Coherent step-by-step plan for the design under guide supervision.
CO4	Evaluate data and analyse the results using critical thinking skills.
CO5	mprove on his/her own learning process and extract the new technologies and adopt the appropriate knowledge
CO6	Write technical documents and give oral and visual presentations related to the work completed.

C415-MAJOR PROJECT

After Completion of this Course a student will be able to ..

CO1	Students should be able to design and construct a hardware and software system, component, or process to meet desired needs.
CO2	Students are provided to work on multidisciplinary Problems.
CO3	Students should be able to work as professionals, with portfolio ranging from data management, network configuration, designing hardware, database and software design to management and administration of entire systems
CO4	Learn to apply the knowledge gained through various courses in solving a real life problem.
CO5	Practice different phases of software/system development life cycle.
CO6	To introduce the student to a professional environment and/or style typical of a global IT industry,

1. Engineering knowledge
2. Problem analysis

3. Design/ development of solutions
4. Conduct investigations of complex problems
5. Modern tool usage
6. The engineer and society
7. Environment and sustainability
8. Ethics
9. Individual and team work
10. Communication
11. Project management and finance
12. Life-long learning