BHARAT INSTITUTE OF ENGINEERING AND TECHNOLOGY

Ibrahimpatnam - 501 510, Hyderabad

DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE OUTCOMES (COs)

B.TECH – INFORMATION TECHNOLOGY

JNTUH: R-13 REGULATIONS

Code	Course Name	Course Outcomes
I B. Tech	
A10001	English	**At the end of this course, each student should be able to:** CO1. Understand the value of English as an international language, as a Lingua-Franca and try to improve their knowledge regarding language skills and elements to be perfect in their usage. CO2. Usage of English Language, written and spoken. CO3. Enrichment of comprehension and fluency CO4. Gaining confidence in using language in verbal situations. CO5. Develop the ability to analyze the language used in descriptions and narrations.
A10002	Mathematics – I	**At the end of this course, each student should be able to:** CO1. Able to write the matrix representation of a set of linear equations and to analyze solutions of system of equations. CO2. Able to understand the methods of differential calculus to optimize single and multivariable functions. CO3. Able to evaluate the multiple integrals and can apply the concepts to find the areas, volumes, moment of inertia etc., of regions on a plane or in space. CO4. Able to identify the type of differential equation and uses the right method to solve the differential equation. Also able to apply the theory of differential equations to the real world problems. CO5. Able to solve certain differential equations using Laplace transform. Also able to transform functions on time domain to frequency domain using Laplace transforms.

Code	Course Name	Course Outcomes
A10003	Mathematical Methods	**At the end of this course, each student should be able to:** CO1. Able to predict the value of the data at an intermediate point and by curve fitting, can find the most appropriate formula for a guessed relation of the data variables. This method of analysis data helps engineers to understand the system for better interpretation decision making. CO2. Able to find a root of a given equation and will be able to find a numerical solution for a given differential equation. CO3. Helps in describing the system by an ODE, if possible. Also, suggests to find the solution as a first approximation. CO4. Able to find the expansion of a given function by Fourier series and Fourier transform of the function. CO5. Helps in phase transformation, phase change and attenuation coefficients in acoustics. CO6. Able to find a corresponding partial differential equation for an unknown function with many independent variables and to find their solution.
A10004	Engineering Physics	**At the end of this course, each student should be able to:** CO1. The student would be able to learn the fundamental concepts on behavior of crystalline solids. CO2. The knowledge on fundamentals of Quantum Mechanics, Statistical Mechanics enables the student to apply to various systems like Communications Solar Cells, Photo Cells and so on. CO3. Design, Characterization and study of properties of materials help the student to prepare new materials for various Engineering applications. CO4. This course also helps the student exposed to non-destructive testing methods. CO5. Finally, engineering physics course helps the student to develop problem solving skills and analytical skills.
A10005	Engineering Chemistry	**At the end of this course, each student should be able to:** CO1. Extrapolate the knowledge of cell, electrode, cathode, anode, electrolysis, electromotive force and reference electrode. CO2. Explore the engineering applications of polymeric materials. CO3. Develop awareness about the usage of conducting polymers as an engineering material. CO4. Justify the immense importance of basic constructional material, Portland cement in Civil Engineering works. CO5. Summarize the application of phase rule to one and two component systems.

Code	Course Name	Course Outcomes
A10501	Computer Programming	**At the end of this course, each student should be able to:** CO1. Identify and understand the working of key components of a computer system. CO2. Develop algorithms and flowcharts for solving mathematical and engineering problems. CO3. Design programs involving decision structures, loops and functions. CO4. Use structured data types and the concept of arrays in simple data processing applications. CO5. Understand the concept of recursion and describe its implementation using a stack. CO6. Understand simple data structures, use of pointers, memory allocation and data handling through files in C.
A10301	Engineering Drawing	**At the end of this course, each student should be able to:** CO1. Identify the basic concepts of Engineering Drawing. CO2. Construct various conic sections, cycloids and scales. CO3. Apply the principles of orthographic projections to projections of points and lines. CO4. Sketch different sections and sectional views of solids. CO5. Show the orthographic projection of the isometric views. CO6. Design the perspective projections of various points, lines, plane figures and simple solids.
A10581	Computer Programming Lab	**At the end of this course, each student should be able to:** CO1. Write programs in C to solve real-world problems. CO2. Choose the appropriate data structure and algorithm design method for a specified application. CO3. Implement linear data structures such as lists, stacks, queues. CO4. Implement simple searching and sorting methods. CO5. Understand which algorithm or data structure to use in different scenarios. CO6. Write complex applications using structured programming methods.

Code	Course Name	Course Outcomes
A10081	Engineering Physics/Engineering Chemistry Lab	**At the end of this course, each student should be able to:** **Physics Lab:** CO1. Understand the concept of error and its analysis. CO2. Compare the theory and correlate with experiment. CO3. Understand the applications of physics experiments in day to day life **Chemistry Lab:** CO4. Develop experimental skills to design new experiments in Engineering. c. Exposure to these experiments the student can compare the theory and correlate with experiment. CO5. Estimate the number of free ions, charge & mobility of ions in the mixture of acids using conductivity meter and also gets an idea about titrations without using any indicator. CO6. Determine the presence and quantity of impurities in water and he can estimate amount of metal in metalores.
A10083	English Language Communication Skills Lab	**At the end of this course, each student should be able to:** CO1. Ability to discuss role and importance of communication skills and learn to make use of various forms of communication in their respective professional fields. CO2. Ability to use communication tool to be an effective team leader or team member. CO3. Ability to use communication modes as a tool for success in career progression. CO4. Ability to present in various social and professional situations formally. CO5. Ability to analyze and share the ideas by various media of information transfer. CO6. Ability to design various behavioral aspects in relation to problem solving.
A10082	IT Workshop/ Engineering Workshop	**At the end of this course, each student should be able to:** **Engineering Workshop** CO1. Prepare various jobs with carpentry trade and fitting trade. CO2. Prepare various jobs with Black smithy trade. CO3. Produce various patterns with foundry techniques. CO4. Combine various metal pieces with the techniques of welding. CO5. Identify various power tools in construction, wood working, electrical and mechanical engineering. CO6. Recognize the methods of plumbing. **IT Workshop** CO1. Understand various aspects of information technology. CO2. Demonstrate capability to work with LaTeX. CO3. Perform upgrading and repairing of PC's.

Code	Course Name	Course Outcomes
		II B. Tech I Semester
A30008	Probability and Statistics	**At the end of this course, each student should be able to:** CO1. Identify distribution in certain realistic situation. CO2. Differentiate among many random variables involved in the probability models. CO3. Calculate mean and proportions (small and large sample) and to make important decisions from few samples which are taken out of unmanageably huge populations. CO4. Find the expected queue length, the ideal time, the traffic intensity and the waiting time. CO5. Understand the random process, Markov process and Markov chains which are essentially models of many time dependent processes such as signals in communications, time series analysis, queuing systems. CO6. Find the limiting probabilities and the probabilities in nth state.
A30504	Mathematical Foundations of Computer Science	**At the end of this course, each student should be able to:** CO1. Visualize data numerically and/or graphically. CO2. Understand and be able to use the notions of propositions and predicate formulae, satisfiability, and formal proof. CO3. Illustrate by examples the basic terminology of functions, relations, and sets and demonstrate knowledge of their associated operations. CO4. Demonstrate in practical applications the use of basic counting principles of permutations, combinations, inclusion/exclusion principle and the pigeonhole methodology. CO5. Represent and apply graph theory in solving computer science problems.
A30502	Data Structures	**At the end of this course, each student should be able to:** CO1. Learn how to use data structure concepts for realistic problems. CO2. Identify appropriate data structure for solving computing problems in respective language. CO3. Solve problems independently and think critically. CO4. Describe the usage and operations for maintaining various data structures. CO5. Describe various data structures like Stacks, Queues, Linked lists, Trees and Graphs are represented in memory and used by algorithms. CO6. Apply basic algorithm strategies and to design algorithms for concrete problems of reasonable difficulty.

Code	Course Name	Course Outcomes
A30402	Digital Logic Design and Computer Organization	**At the end of this course, each student should be able to:** CO1. Understand number systems, binary addition and subtraction, 2's complement representation and operations with this representation. CO2. Identify the importance of SOP and POS canonical forms in the minimization or other optimization of Boolean formulas in general and digital circuits. CO3. Evaluate functions using various types of minimizing algorithms like Boolean algebra, Karnaugh map or tabulation method. CO4. Understand bi-stable elements and different types of latches and flip-flops. CO5. Analyze the design procedures of Combinational and Sequential logic circuits. CO6. Analyze memory organizations, PAL, PLA and memory hierarchy concepts
A30404	Electronic Devices and Circuits	**At the end of this course, each student should be able to:** CO1. Understand and analyze the different types of diodes, operation and its characteristics. CO2. Understand the function of diode as rectifier. CO3. Design and analyze the DC bias circuitry of BJT and FET. CO4. Design biasing circuits using diodes and transistors. CO5. Analyze and design diode application circuits, amplifier circuits and oscillators employing BJT, FET devices.
A30202	Basic Electrical Engineering	**At the end of this course, each student should be able to:** CO1. Explain basic electrical concepts, including electric charge, current, electrical potential, electrical Power and energy. CO2. Apply Kirchhoff's voltage and current laws to the analysis of electric circuits. CO3. Differentiate different types of instruments and their application. CO4. Describe the electrical machines based on real time system. CO5. Analyze simple problems of AC circuits.
A30282	Electrical and Electronics Lab	**At the end of this course, each student should be able to:** CO1. Understand the circuit theorems and various electrical components. CO2. Understand applications of DC and AC machines. CO3. Understand identification and selection of various electronic components. CO4. Analyze the characteristics of various electronics components. CO5. Understand the conversion of AC power to DC power.

Code	Course Name	Course Outcomes
A30582	Data Structures Lab	**At the end of this course, each student should be able to:** CO1. Identify the appropriate data structure for given problem. CO2. Design and analyze the time and space complexity of algorithm or program. CO3. Effectively use compilers includes library functions, debuggers and trouble shooting.
II B. Tech II Semester		
A40511	Principles of Programming Languages	**At the end of this course, each student should be able to:** CO1. Express syntax and semantics in formal notation. CO2. Apply suitable programming paradigm for the application. CO3. Gain knowledge and comparison of the features programming languages. CO4. Use of functional programming languages like LISP, ML, Haskell. CO5. Apply scripting languages in web design and real-time applications.
A40507	Database Management Systems	**At the end of this course, each student should be able to:** CO1. Demonstrate the basic elements of a relational database management system. CO2. Identify data models for relevant problems. CO3. Design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data. CO4. Apply normalization for the development of application software's. CO5. Design and implement a full real size database system.
A40503	Java Programming	**At the end of this course, each student should be able to:** CO1. List and use Object Oriented Programming concepts for problem solving. CO2. Write programs using Java collection API as well as the java standard class library. CO3. Solve the inter-disciplinary applications using the concept of inheritance. CO4. Apply JDBC to provide a program level interface for communicating with database using java programming. CO5. Apply the garbage collection for saving the resources automatically.

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A40009	Environmental Studies	**At the end of this course, each student should be able to:** CO1. Apply Knowledge regarding environment and its components. CO2. Understand various ecosystems, their biodiversity and Scientific methods to protect them. CO3. Comprehend different types of pollutions and their control measures. CO4. Enhance their ability for effective methods of waste management CO5. Understand about global environmental problems and come out with best possible solutions. CO6. Create awareness about environmental laws, Environmental Impact assessments.
A40409	Data Communication	**At the end of this course, each student should be able to:** CO1. Understand and explore the basis of computer networks and various protocols. She/he will be in a position to understand the World Wide Web concepts. CO2. Administrate a network and flow of information further he/she can understand easily the concepts of network security, mobile and ad hoc networks CO3. Enumerate the layers of the OSI model and TCP/IP, explain the function(s) of each layer. CO4. Analyze different MAC mechanisms (Aloha, Slotted Aloha, TDMA, and FDMA) and understand their pros and cons. CO5. Predict ethical, legal, security and social issues related to computer networks
A40508	Design and Analysis of Algorithms	**At the end of this course, each student should be able to:** CO1. Analyze algorithms and improve the efficiency of algorithm. CO2. Apply different designing methods for development of algorithms realistic problems, such as divide and conquer, greedy and etc. CO3. Understand to construct minimal spanning trees and find shortest path between source and sink. CO4. Understand and estimate the performance of algorithm. CO5. Describe the notions of P, NP, NP-complete, and NP-hard.
A40585	Java Programming Lab	**At the end of this course, each student should be able to:** CO1. Implement basics of java programming, multi-threaded programs and exception handling. CO2. Apply OOP in java programming in problem solving. CO3. Access data from a DB with java programs. CO4. Simulate dynamic and interactive programs using applets. CO5. Use of GUI components (console and GUI based).

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A40584	Database Management Systems Lab	**At the end of this course, each student should be able to:** CO1. Design and implement a database schema for given problem. CO2. Capable to design and build a GUI application. CO3. Apply the normalization techniques for development of application software to realistic problems. CO4. Formulate queries using SQL DML/DDL/DCL commands.
III B. Tech I Semester		
A50513	Automata and Compiler Design	CO1. Understand the design of a compiler and the phases of program translation from source code to executable code and the files produced by these phases CO2. Use the powerful compiler generation tools such as Lex and YACC for generating the parser. CO3. Identify the analysis phase, similarities and differences among various parsing techniques and grammar transformation techniques. CO4. Implement major parsing techniques ranging from the recursive decent methods to the computationally more intensive LR techniques that have been used in parser generator CO5. Apply the several algorithms for collecting and optimizing the information using data flow analysis CO6. Gain knowledge of powerful compiler generation tools.
A50517	Linux Programming	**At the end of this course, each student should be able to:** CO1. Identify and use Linux utilities to create and manage simple file processing operations, organize directory structures with appropriate security. CO2. Work confidently in Linux environment. CO3. Work with shell script to automate different tasks as Linux administration. CO4. Illustrate file processing operations such as standard I/O and formatted I/O. CO5. Design various client server applications using TCP or UDP protocols.
A50518	Software Engineering	**At the end of this course, each student should be able to:** CO1. Identify the minimum requirements for the development of application. CO2. Develop, maintain, efficient, reliable and cost effective software solutions. CO3. Understand the role of project management including planning, scheduling and risk management. CO4. Illustrate the managing time, processes and resources effectively by prioritizing competing demands. CO5. Critically thinking and evaluate assumptions and arguments.

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A50510	Operating Systems	**At the end of this course, each student should be able to:** CO1. Understand the difference between different types of modern operating systems, virtual machines and their structure of implementation and applications. CO2. Apply optimization techniques for the improvement of system performance. CO3. Understand the synchronous and asynchronous communication mechanisms in their respective OS. CO4. Learn about minimization of turnaround time, waiting time and response time and also maximization of throughput with keeping CPU as busy as possible. CO5. Illustrate different protection and security mechanisms in operating system.
A50515	Computer Networks	**At the end of this course, each student should be able to:** CO1. Understand and explore the basis of computer networks and various protocols. She/he will be in a position to understand the World Wide Web concepts. CO2. Administrate a network and flow of information further he/she can understand easily the concepts of network security, mobile and ad hoc networks. CO3. Enumerate the layers of the OSI model and TCP/IP, explain the function(s) of each layer. CO4. Analyze different MAC mechanisms (Aloha, Slotted Aloha, TDMA, and FDMA) and understand their pros and cons. CO5. Predict ethical, legal, security and social issues related to computer networks.
A50010	Managerial Economics and Financial Analysis	CO1. Identify the significance of demand, its analysis, measurement of demand and its forecasting CO2. Introduce the different structures of market covering how price is determined under different market structures. CO3. Differentiate different forms of business organizations existing in the modern business can be very well understood under its scope CO4. Learn the allocation of capital which plays a vital role in a business organization CO5. . Build exposure to the double entry book keeping and to the maintenance of books of records and allocation of profits in an enterprise.
A50589	Operating Systems Lab	**At the end of this course, each student should be able to:** CO1. Understand and implement basic services and functionalities of the operating system using system calls. CO2. Use modern operating system calls and synchronization libraries in software/ hardware interfaces. CO3. Analyze and simulate CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority. CO4. Implement memory management schemes and page replacement schemes.

Code	Course Name	Course Outcomes
A50588	Computer Networks Lab(Through Linux)	**At the end of this course, each student should be able to:** CO1. Understand the encryption and decryption concepts in Linux environment CO2. Apply appropriate algorithms for the finding of shortest route. CO3. Configure the routing table
III B. Tech II Semester		
A60512	Web Technologies	**At the end of this course, each student should be able to:** CO1. Gain knowledge of client side scripting, validation of forms and AJAX programming. CO2. Have understanding of server side scripting with PHP language. CO3. Have understanding of what is XML and how to parse and use CO4. Create applications by using the concepts like JSP and Servlet
A60018	Human Values and Professional Ethics (Open Elective)	**At the end of this course, each student should be able to:** CO1. Aware of significance of Human values for the development of individual as well as the society at large. CO2. An ability to understand the engineering ethical theories and models which guides an individual in overall personality development CO3. Significance of Code of ethics plays a vital role in job performance. CO4. Able to identify the global ethical issues and ability to prevent those issues at organizational and individual level. CO5. Acquires knowledge on safety, responsibilities and rights through case studies.
A60521.1	Introduction to Analytics (Open Elective)	**At the end of this course, each student should be able to:** CO1. Demonstrate knowledge of statistical data analysis techniques used in decision making. CO2. Apply principles of Data Science to the analysis of large-scale problems. CO3. Use data mining software to solve real-world problems. CO4. Employ cutting edge tools and technologies to analyze Big Data.
A60521.2	Information Security Management (Open Elective)	**At the end of this course, each student should be able to:** CO1. Have an understanding of the key themes and principles of information security management and be able to apply these principles in designing solutions to managing security risks effectively; CO2. Understand how to apply the principles of information security management in a variety of contexts; CO3. Have an appreciation of the interrelationship between the various elements of information security management and its role in protecting organisations.

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A60524	Object Oriented Analysis and Design	**At the end of this course, each student should be able to:** CO1. Demonstrate the Conceptual model of UML and SDLC. CO2. Define classes modeling techniques and instances modeling techniques. CO3. Describe interaction diagrams and their modeling techniques. CO4. Demonstrate activity diagram and their modeling techniques. CO5. Demonstrate component and deployment diagram.
A60520	Data Warehousing and Data Mining	CO1. Understand why the data warehouse in addition to database systems CO2. Perform the pre-processing of data and apply mining techniques on it. CO3. Identify the association rules, classification and clusters in large data sets CO4. Solve real world problems in business and scientific information using data mining
A60525	Software Testing Methodologies	**At the end of this course, each student should be able to:** CO1. Understand the importance and purpose of testing and its applications in software development life cycle. CO2. Understand the model for testing by taking a project, environment, program and bugs. CO3. Apply the process of testing and various methodologies in testing for developed software. CO4. Write test cases for given software to test it before delivery to the customer.
A60519	Cloud Computing	**At the end of this course, each student should be able to:** CO1. Understand the virtualization and cloud computing concepts CO2. Understand the architecture, deployment models, and infrastructure models of Cloud Computing CO3. Demonstrate knowledge on the cloud computing security CO4. Familiar with open source cloud computing software, and free/commercial cloud services. CO5. Understand the privacy policy of cloud providers
A60592	Data Mining and Web Technologies Lab	**At the end of this course, each student should be able to:** CO1. Learn to execute data mining tasks using a data mining toolkit (such as WEKA) and visualize the results CO2. Demonstrate the working of algorithms for data mining tasks such association rule mining, classification, clustering and regression CO3. Design web pages with HTML & DHTML CO4. Design dynamic web pages using server side component Servlets

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A60086	Advanced Communication Skills Lab	**At the end of this course, each student should be able to:** CO1. Understanding the sounds of RP and apply them to transcribe words. CO2. Listen, speak, read & write the sounds of English using correct stress, tone and rhythm. CO3. Language Skills- Grammar Exercises, Jumbled Sentences & correcting errors. CO4. Role-Play- enacting ideas, themes(short duration & one-on-one activity) CO5. Introducing Self & Others- Learning the nuances of Introduction, Asking questions and Overcoming stage fright
IV B. Tech I Semester		
A70522	Information Security	**At the end of this course, each student should be able to:** CO1. Understand basic cryptographic algorithms, message and web authentication and security issues. CO2. Identify information system requirements for both of them such as client and server. CO3. Understand the process of combining security association and key management. CO4. Analyze how security is provided for many applications through SNMP. CO5. Understand the current legal issues towards information security.
A70530	Design Patterns	**At the end of this course, each student should be able to:** CO1. Understand and apply common design patterns to incremental/iterative development. CO2. Identify appropriate patterns for design of given problem. CO3. Categorize and maintain a catalog of the available design patterns that will be selected & used more easily. CO4. Demonstrate knowledge on available reusable mechanisms that will reduce the reengineering cost. CO5. Identify the code qualities are essential for writing maintainable code.
A70535	Mobile Application Development	**At the end of this course, each student should be able to:** CO1. Evaluate and select appropriate solution to the mobile computing platform CO2. Develop the user interface CO3. Design a simple mobile phone game

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A70533	Information Retrieval System	**At the end of this course, each student should be able to:** CO1. Implement algorithms like clustering, pattern searching, and stemming algorithms CO2. Possess the ability to store and retrieve textual documents using appropriate models. CO3. Possess the ability to use the various retrieval utilities for improving search CO4. Possess an understanding of indexing and compressing documents to improve space and time efficiency. CO5. Demonstrate various technologies the most appropriate one for the task of extracting such as copy/paste software functions, photocopier, scanner, audio/visual equipment.
A70352.1	Big Data Analytics (Associate Analytics-2)	**At the end of this course, each student should be able to:** CO1. Demonstrate knowledge of data management, data quality and data preprocessing for data analysis. CO2. Apply big data tools for decision making. CO3. Use big data analytics to understand the nature of available data. CO4. Apply machine learning algorithms for hypothesis testing. CO5. Prepare data for visualization and implement the product.
A70531	Human Computer Interaction	CO1. Apply HCI and principles to interaction design CO2. Design certain tools for blind or PH people CO3. Understand key aspects of human psychology which can determine user actions at and satisfaction of the interface CO4. Analyze and discuss HCI issues in groupware, ubiquitous computing, virtual reality, multimedia, and Word Wide Web-related environments CO5. . An understanding of the various software tools available to develop the good user interface
A70593	Case Tools and Software Testing Lab	CO1. Understand the history, cost of using and building CASE tools CO2. Construct and Evaluate hybrid CASE tool by integrating existing tools. CO3. Deliver the product with qualitative
A70597	Mobile Application Development Lab	CO1. Build a native application using GUI components and Mobile application development framework CO2. Develop an application using basic graphical primitives and databases CO3. Construct an application using multi threading and RSS feed CO4. Make use of location identification using GPS in an application CO5. Model new applications to hand held devices.

Code	Course Name	Course Outcomes
IV B. Tech II Semester		
A80014	Management Science	**At the end of this course, each student should be able to:** CO1. Exercise critical thinking to propose, communicate, and implement, action plan that address opportunities and issues. CO2. Integrate knowledge of the key theories across the disciplines of public administration. CO3. Compare various perspectives across organizational environments and the role of manager in core management and public policy disciplines. CO4. Demonstrate an ability to apply general management know-how in practical business situations. CO5. Demonstrate skills in interdisciplinary analysis, drawing upon different empirical sources, analytical perspectives and sub-disciplines within management studies.
A80551.1	Predictive Analytics (Associate Analytics-III) (Elective III)	CO1. Understand Basics of Predictive Analytics. CO2. Understand Logistic Regression and its components. CO3. Understand how to build decision trees. CO4. Understanding knowledge, skills and competence CO5. Extract features from the generated model as height, Average, Energy etc. and analyze prediction. CO6. Understand purpose, scope and format for the documents.
A80551.2	Information Security Incident Response and Management (Security Analyst-III) (Elective III)	CO1. Able to monitor systems and apply controls in line with information security policies, procedures and guidelines. CO2. Able to troubleshoot network devices and services. CO3. Able to develop knowledge skill and competencies to do log correlation. CO4. Able to develop knowledge skill and competencies for handling network security incidents and malicious code incidents.
A80547	Multimedia & Rich Internet Applications	CO1. Design a short films and teaching material for better understanding CO2. Apply different multimedia development tools to produce web based and stand-alone user interface CO3. Analyze Ascertain which approaches to use when implementing multimedia projects for different users CO4. Develop multimedia interfaces in accordance with the principles of multimedia authoring.
A80550	Storage Area Networks (Elective IV)	**At the end of this course, each student should be able to:** CO1. Demonstrate the storage area networks and their products. CO2. Identify and describe the functions to build data center networking for switch network. CO3. Provide the mechanisms for the backup/recovery. CO4. Describe the different role in providing disaster recovery and business continuity capabilities.

Code	Course Name	Course Outcomes
A80087	Industry Oriented Mini Project	CO1. Formulate a real world problem and develop its requirements CO2. Test and validate the conformance of the developed prototype against the original requirements of the problem CO3. Work as a responsible member and possibly a leader of a team in developing software solutions CO4. Participate in and possibly moderate, discussions that lead to making decisions CO5. Self learn new tools, algorithms, and/or techniques that contribute to the software solution of the project CO6. Generate alternative solutions, compare them and select the optimum one.
A80089	Seminar	CO1. Ability to work in actual working environment. CO2. Ability to utilize technical resources CO3. Ability to write technical documents and give oral presentations related to the work completed.
A80088	Project Work	CO1. Ability to plan and execute well defined objective CO2. Ability to work in team at component level and system level CO3. Ability to troubleshoot CO4. Ability to reuse- or integrate with- existing components CO5. Ability to derive performance metrics and assess quantitatively the performance of system CO6. Ability to report and present the findings in standard formats
A80090	Comprehensive Viva	CO1. Face any type of interviews, viva-voce, and aptitude tests. CO2. Perform well in competitive exams and group discussions CO3. Apply knowledge in building their career in particular fields. CO4. Enhance their communication skills and interactiveness.