



IDHAYA ENGINEERING COLLEGE FOR WOMEN

CHINNASALEM-606 201, VILLUPURAM DISTRICT, TAMIL NADU, INDIA.

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai.

An ISO 9001: 2015 Certified Institution

A Christian Minority Institution run by the Franciscan Sisters of the Immaculate Heart of Mary Society, Puducherry.

Phone: 04151-258325, 258326

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COURSE OUTCOMES FOR B.E. COMPUTER SCIENCE AND ENGINEERING



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HS8151 – COMMUNICATIVE ENGLISH	
C101.1	Enable students to frame sentences, enrich vocabulary and develop basic LSRW Skills
C101.2	Relate synthesis of sentences and enhance LSRW skills for general purposes
C101.3	Apply coherence and sequence expressions and substitutes for advanced task
C101.4	Refine tense sense and word enrichment techniques for more complex and demanding social activities
C101.5	Develop usage of language to ensure development in the LSRW Skills
MA 8151 - ENGINEERING MATHEMATICS I	
C102.1	Able to understand the various techniques in differentiation
C102.2	Able to solve the maxima, minima of functions of two variables and applications of Lagrange's method
C102.3	Acquire skills in analyzing and solving the Integral problems
C102.4	Able to solve the problems based on multiple integration
C102.5	Acquire skills in analyzing and solving the ordinary differential equations.
PH8151/ ENGINEERING PHYSICS	
C103.1	Retrieve the basics of properties of matter
C103.2	Summarize the concepts of waves, optical devices and analyze their applications in fiber optics.
C103.3	Understand the concepts of thermal properties of materials and assess their applications in expansion joints and heat exchangers
C103.4	Extend the physics concepts of quantum theory and apply in tunneling microscopes
C103.5	Retrieve the basics of crystals, their structures and experimenting the preparation of different growth techniques.
CY8151 - ENGINEERING CHEMISTRY	
C104.1	Understand the concept of hard water, its problems and water treatment techniques.
C104.2	Categorize the concepts of adsorption, its isotherms and catalytic reaction
C104.3	Apply the phase rule to the one and two component system and to understand the significance of alloys.
C104.4	Summarize the different types of fuels and its manufacturing process and able to calculate the calorific value of the fuel
C104.5	Apply the principles of generation of energies in batteries, nuclear reactors and solar cells.
GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING	
C105.1	Explain algorithmic solutions to simple computational problems
C105.2	Read , write, execute by simple Python programs.
C105.3	Describe simple Python programs for solving problems. Decompose a Python program into



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	functions.
C105.4	Use compound data with Python lists, tuples and dictionaries.
C105.5	Describe read and write data from/to files in Python.
	GE8152 - ENGINEERING GRAPHICS
C106.1	Understand the fundamentals and standards of Engineering graphics
C106.2	Perform freehand sketching of basic geometrical constructions and multiple views of objects
C106.3	Understand the concept of orthographic projections of lines and plane surfaces
C106.4	Draw the projections of section of solids and development of surfaces
C106.5	Visualize and to project isometric and perspective sections of simple solids
	GE8161 - PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY
C107.1	Understand how to write, test, and debug simple Python programs.
C107.2	Describe Python programs with conditionals and loops.
C107.3	Implement Python programs step-wise by defining functions and calling them.
C107.4	Use Python lists, tuples, dictionaries for representing compound data.
C107.5	Implement read and write data from/to files in Python.
	BS8161 - PHYSICS CHEMISTRY LABORATORY
C108.1	Acquire the skills in the determination hardness of the water by EDTA method
C108.2	Analyze the alkalinity present in water by titrimetric method
C108.3	Determine the molecular weight of a polymer.
C108.4	Deduce the amount substance present by pH metry and Potentiometry method.
C108.5	Calculate the amount of acid and base present in the solution and inthe mixture Conductometric method.
	HS8251 TECHNICAL ENGLISH
C109.1	Enables students to acquire competence in LSRW for basic general and technology-based professional requirements.
C109.2	Develop ability in LSRW to achieve more demanding tasks in technical fields
C109.3	Apply more strategies and skills to enhance LSRW to produce quick, effective and coherent responses in the professional fields
C109.4	Build communication employment-based communication competence by making students self reliant and analytical
C109.5	Foster LSRW ability to respond effectively and competently for job-based demands



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MA8251 ENGINEERING MATHEMATICS II	
C110.1	Understand the concepts in diagonalisation of matrices
C110.2	Understands the concept of vector calculus
C110.3	Understand the uses of analytic functions. and conformal mapping
C110.4	Understand the techniques of complex integratin and contour integrals
C110.5	Understand the applications of laplace transforms
PH8252 - PHYSICS FOR INFORMATION SCIENCE	
C111.1	Retrieve the electrical properties of solid state materials and explain the theoretical aspects of mobility of electrons
C111.2	Determine the doping properties of semiconductors and determining the carrier concentration of materials
C111.3	Understand the magnetic properties of materials and to analyze their applications in data storage.
C111.4	Understand on the functioning of optical properties for opto electronics.
C111.5	Analyze the concept of electrical properties in bulk material and design novel materials
BE8255 BASIC ELECTRICAL, ELECTRONICS AND MEASUREMENT ENGINEERING	
C112.1	Discuss the essentials of electric circuits and analysis.
C112.2	Discuss the basic operation of electric machines and transformers
C112.3	State the renewable sources and common domestic loads.
C1124	Understand the fundamentals of electronic circuit constructions
C112.5	Describe the measurement and metering for electric circuits.
GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING	
C113.1	Apply Knowledge gained on types of biodiversity, conservation of biodiversity, structure, function and types of ecosystem
C113.2	Understand the sources, causes, consequences and control method of air, water, soil, noise, thermal and nuclear pollution
C113.3	Apply Knowledge gained on existence of natural resources, over utilization, problems of these resources and control techniques.
C113.4	Apply Knowledge gained on the environment and its social issues, Air Act, Water Act, Wild life protection act, Forest conservation act and public awareness.
C113.5	Apply Knowledge gained on population growth, population explosion, family welfare Program, human rights, value education, AIDS, women and child welfare, role of information technology in environment and human health.



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CS8251- PROGRAMMING IN C	
C114.1	Develop simple applications in C using basic constructs
C114.2	Design and implement applications using arrays and strings
C114.3	Develop and implement applications in C using functions and pointers
C114.4	Develop applications in C using structures.
C114.5	Design applications using sequential and random access file processing
GE8261 - ENGINEERING PRACTICES LABORATORY	
C115.1	Fabricate carpentry components and pipe connections including plumbing works, use welding equipments to join the structures and carry out the basic machining operations
C115.2	Build the models using sheet metal works
C115.3	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings
C115.4	Build basic home electrical works and appliances and measure the electrical quantities
C115.5	Elaborate on the components, gates, soldering practices
CS8261 - C PROGRAMMING LABORATORY	
C116.1	Develop C programs for simple applications making use of basic constructs, arrays and strings.
C116.2	Develop C programs involving functions, recursion
C116.3	Develop C programs involving pointers, and structures.
C116.4	Design applications using sequential and random access file processing.
C116.5	Design applications like railway reservation system.
IT8211 - INFORMATION TECHNOLOGY ESSENTIALS LABORATORY	
C117.1	Design interactive websites using basic HTML tags, different styles, links and with all Basic control elements
C117.2	Implement client side and server side programs using scripts using PHP.
C117.3	Implement dynamic web sites and handle multimedia components
C117.4	Implement applications with PHP connected to database and Implement the technologies behind computer networks and mobile communication.
C117.5	Implement Personal Information System
CS8351 - DIGITAL PRINCIPLES AND SYSTEM DESIGN	
C202.1	Design digital circuits using simplified Boolean functions
C202.2	Analyze and design combinational circuits
C202.3	Analyze and design synchronous and asynchronous sequential circuits
C202.4	Understand Programmable Logic Devices
C202.5	Explain HDL code for combinational and sequential circuits



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CS8391- DATA STRUCTURES	
C203.1	Understand & Implement abstract data types for linear data structures - Lists
C203.2	Understand & Apply the different linear(Stack & Queue) data structures to problem solutions
C203.3	Understand & Apply the different Non-Linear(Tree) data structures to problem solutions
C203.4	Understand & Apply the different Non-Linear(Graph) data structures to problem solutions
C203.5	Critically analyze the various sorting algorithms and Hashing Techniques
CS8392 - Object Oriented Programming	
C204.1	Develop Java programs using OOP Principles.
C204.2	Develop Java programs with the concepts inheritance and interfaces.
C204.3	Build Java applications using exceptions and I/O streams.
C204.4	Develop java applications with threads and generic classes.
C204.5	Develop interactive Java program using Swings.
EC8395 - COMMUNICATION ENGINEERING	
C205.1	Ability to comprehend and appreciate the significance and role of this course in the present contemporary world
C205.2	Apply analog and digital communication techniques.
C205.3	Use data and pulse communication techniques.
C205.4	Analyze Source and Error control coding.
C205.5	Design Spread spectrum and multiple access
CS8381 – DATA STRUCTURES LABORATORY	
C206.1	Gain knowledge about fundamental concepts of Linear Data Structures.
C206.2	Gain knowledge about nonlinear data structures (Tree).
C206.3	Gain knowledge about nonlinear data structures (Graphs)
C206.4	Gain knowledge about nonlinear data structures for Sorting and Searching Algorithms
C206.5	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval
CS8383 - OBJECT ORIENTED PROGRAMMING LABORATORY	
C207.1	Develop and implement Java programs for simple applications that make use of classes.
C207.2	Develop and implement Java programs for packages and interfaces.
C207.3	Develop and implement Java programs with arraylist.
C207.4	Develop and implement Java programs exception handling and multithreading.
C207.5	Design applications using file processing, generic programming and event handling.



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CS8382 DIGITAL SYSTEMS LABORATORY	
C208.1	Implement simplified combinational circuits using basic logic gates
C208.2	Implement combinational circuits using MSI devices
C208.3	Implement sequential circuits like registers and counters
C208.4	Simulate combinational and sequential circuits using HDL
C208.5	Design and implementation of a simple digital system
HS8381 - Interpersonal Skills/Listening & Speaking	
C209.1	Listen and respond appropriately especially in academic contexts
C209.2	Participate in group discussions with special emphasis on stress and intonation
C209.3	Develop lexical accuracy and fluency in articulation
C209.4	Assess conversations and offer Verbal and Non-Verbal feedbacks
C209.5	Plan and devise effective presentations
MA8402- PROBABILITY & QUEUEING THEORY	
C210.1	Gain knowledge on Probability and various distributions
C210.2	Solve the Joint distributions, Covariance, Correlation and Linear regression Problems.
C210.3	Gain knowledge on Stationary process, Markov process, Poisson process and its Applications.
C210.4	Acquire skills in analyzing and Solving the Various types of Morkovian Queue Problems.
C210.5	Gain knowledge on General Queueing Models (Non Morkovian)
CS8491 – COMPUTER ARCHITECTURE	
C211.1	Understand the basics structure of computers, operations and instructions.
C211.2	Design arithmetic and logic unit.
C211.3	Understand pipelined execution and design control unit.
C211.4	Understand parallel processing architectures. I
C211.5	Understand the various memory systems and I/O communication
CS8492- DATABASE MANAGEMENT SYSTEMS	
C212.1	Learn the fundamentals of Data Models and to represent a database system using ER diagrams.
C212.2	Study SQL and Relational Database design.



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C212.3	Understand the internal storage structures using different File and Indexing techniques which will help in physical DB design.
C212.4	Understand the fundamental concept of transaction processing-concurrency control techniques and recovery procedures.
C212.5	Understand an introductory knowledge about the storage and Query processing technique.
CS8451 - DESIGN AND ANALYSIS OF ALGORITHMS	
C213.1	Design algorithms for various computing problems.
C213.2	Analyze the search and sorting complexity of algorithms.
C213.3	Analyze the time and space complexity of algorithms.
C213.4	Critically analyze the different algorithm design techniques for a given problem.
C213.5	Modify existing algorithms to improve efficiency.
CS8493-OPERATING SYSTEM	
C214.1	Understand the basic concepts and functions of operating systems.
C214.2	Understand and analyze Processes, Threads and Scheduling algorithms.
C214.3	Understand the concept of Deadlocks.
C214.4	Analyze various memory management schemes and understand I/O management and File systems.
C214.5	Understand Linux basic concepts and Mobile OS like iOS and Android.
CS8494 SOFTWARE ENGINEERING	
C215.1	Identify the key activities in managing a software project.
	Compare different process models.
C215.2	Compare different process models.
C215.3	Concepts of requirements engineering and Analysis Modeling.
C215.4	Apply systematic procedure for software design and deployment.
C215.5	Compare and contrast the various testing and maintenance and Manage project schedule, estimate project cost and effort required
CS8481- DBMS LABORATORY	
C216.1	Use typical data definitions and manipulation commands.
C216.2	Design applications to test Nested, Join Queries and views
C216.3	Implement applications that require a Front-end Tool.
C216.4	Critically analyze the use of Tables, Views, Functions and Procedures
C216.5	Design and implement real time applications.
CS8461 - OPERATING SYSTEMS LABORATORY	
C217.1	Compare the performance of various CPU Scheduling Algorithms



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C217.2	Implement page replacement algorithms, file organization and allocation techniques
C217.3	Implement Deadlock avoidance and Detection Algorithms
C217.4	Implement Semaphores and to Create processes and implement IPC
C217.5	Analyze the performance of the various Page Replacement Algorithms and Implement File Organization and File Allocation Strategies
HS8461 ADVANCED READING AND WRITING	
C218.1	Strengthen the reading and writing skills of the students
C218.2	Comprehend and interpret data into coherent paragraphs
C218.3	Evaluate texts critically
C218.4	Draft winning Job applications
C218.5	Write impressive project proposals with critical acumen
MA8551 ALGEBRA AND NUMBER THEORY	
C301.1	Apply the basic notions of groups, rings, fields which will then be used to solve related problems.
C301.2	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
C301.3	Demonstrate accurate and efficient use of advanced algebraic techniques
C301.4	Demonstrate their mastery by solving non - trivial problems related to the concepts, and by proving simple theorems about the, statements proven by the text.
C301.5	Apply integrated approach to number theory and abstract algebra, and provide a firm basis for further reading and study in the subject.
CS8591 - COMPUTER NETWORKS	
C302.1	Understand the basic layers and its functions in computer networks.
C302.2	Evaluate the performance of a network.
C302.3	Understand the basics of how data flows from one node to another.
C302.4	Analyze and design routing algorithms.
C302.5	Design protocols for various functions in the network and Understand the working of various application layer protocols
EC8691 MICROPROCESSORS AND MICROCONTROLLERS	
C303.1	Understand and execute programs based on 8086 microprocessor.
C303.2	Design Memory Interfacing circuits.
C303.3	Design and interface I/O circuits.
C303.4	Design and implement 8051 microcontroller based systems.
C303.5	Design and develop Traffic Light control, LED display, LCD display and Alarm Controller.



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CS8501 - THEORY OF COMPUTATION	
C304.1	Build automata for any pattern.
C304.2	Construct regular expression for any pattern.
C304.3	Write Context free grammar for any construct and Develop PDA for any CFL.
C304.4	Design Turing machines for any language and Propose computation solutions using it.
C304.5	Derive whether a problem is decidable or not.
CS8592 - OBJECT ORIENTED ANALYSIS AND DESIGN	
C305.1	Express software design with UML diagrams
C305.2	Design software applications using OO concepts.
C305.3	Identify various scenarios based on software requirements
C305.4	Transform UML based software design into pattern based design using design patterns
C305.5	Understand the various testing methodologies for OO software
OCE552 GEOGRAPHIC INFORMATION SYSTEM	
C306.1	Have basic idea about the fundamentals of GIS.
C306.2	Understand the types of data models
C306.3	Get knowledge about data input and topology
C306.4	Gain knowledge on data quality and standards
C306.5	Understand data management functions and data output
EC8681 MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	
C307.1	Write ALP Programmes for fixed and Floating Point and Arithmetic operations
C307.2	Interface different I/Os with processor
C307.3	Generate waveforms using Microprocessors
C307.4	Execute Programs in 8051
C307.5	Explain the difference between simulator and Emulator
CS8582 OBJECT ORIENTED ANALYSIS AND DESIGN LAB	
C308.1	Perform OO analysis and design for a given problem specification.
C308.2	Identify and map basic software requirements in UML mapping.
C308.3	Improve the software quality using design patterns and to explain the rationale behind applying specific design patterns
C308.4	Test the compliance of the software with the SRS.
C308.5	Implement the forward and reverse engineering
CS8581 NETWORKS LABORATORY	
C309.1	Implement various protocols using TCP and UDP.



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C309.2	Compare the performance of different transport layer protocols.
C309.3	Use simulation tools to analyze the performance of various network protocols.
C309.4	Analyze various routing algorithms.
C309.5	Implement error correction codes.
CS 8651 INTERNET PROGRAMMING	
C310.1	Construct a basic website using HTML and Cascading Style Sheets.
C310.2	Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
C310.3	Develop server side programs using Servlets and JSP.
C310.4	Construct simple web pages in PHP and to represent data in XML format.
C310.5	Use AJAX and web services to develop interactive web applications
CS8691 ARTIFICIAL INTELLIGENCE	
C311.1	Use appropriate search algorithms for any AI problem
C311.2	Represent a problem using first order and predicate logic
C311.3	Provide the apt agent strategy to solve a given problem
C311.4	Design software agents to solve a problem
C311.5	Design applications for NLP that use Artificial Intelligence
CS8601 – MOBILE COMPUTING	
C312.1	Understand the basic concepts of mobile computing
C312.2	Learn the basics of mobile telecommunication system
C312.3	Familiar with the network layer protocols and Ad-Hoc networks
C312.4	Understand the basis of transport and application layer protocols
C312.5	Gain knowledge about different mobile platforms and application development
CS 8602 COMPILER DESIGN	
C313.1	Understand the different phases of compiler and Design a lexical analyzer for a sample language.
C313.2	Apply different parsing algorithms to develop the parsers for a given grammar.
C313.3	Understand syntax-directed translation and run-time environment.
C313.4	Learn to implement code optimization techniques and a simple code generator.
C313.5	Design and implement a scanner and a parser using LEX and YACC tools.
CS8603– DISTRIBUTED SYSTEM	
C314.1	Elucidate the foundations and issues of distributed systems Understand the various synchronization issues and global state for distributed systems
C314.2	Understand the various synchronization issues and global state for distributed systems



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C314.3	Understand the Mutual Exclusion and Deadlock detection algorithms in distributed systems
C314.4	Describe the agreement protocols and fault tolerance mechanisms in distributed systems
C314.5	Describe the features of peer-to-peer and distributed shared memory systems
IT8076 SOFTWARE TESTING	
C315.1	Design the test cases suitable for a software development for different domains
C315.2	Prepare test planning based on the document. Identify suitable tests to be carried out
C315.3	Explain the various level of testing
C315.4	Design test plans and test cases.
C315.5	Develop and validate a test plan. Make use of automatic testing tools.
CS8661 Internet Programming Laboratory	
C316.1	Construct Web pages using HTML/XML and style sheets.
C316.2	Build dynamic web pages with validation using Java Script objects and by applying different event handling mechanisms.
C316.3	Develop dynamic web pages using server side scripting.
C316.4	Use PHP programming to develop web applications.
C316.5	Construct web applications using AJAX and web services
CS8662 Mobile Application Development Laboratory	
C317.1	Develop mobile applications using GUI and Layouts.
C317.2	Develop mobile applications using Event Listener.
C317.3	Develop mobile applications using Databases.
C317.4	Develop mobile applications using RSS Feed, Internal/External Storage, SMS, Multi-threading and GPS.
C317.5	Analyze and discover own mobile app for simple needs.
HS8581 Professional Communication	
C318.1	Make effective presentations
C318.2	Participate confidently in Group Discussions.
C318.3	Attend job interviews and be successful in them.
C318.4	Develop adequate Soft Skills required for the workplace
C318.5	Implement the protocols for career management
MG8591- PRINCIPLES OF MANAGEMENT	
C401.1	Able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management
C401.2	Enable the students to study the evolution of Management
C401.3	To study the functions and principles of management



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C401.4	To learn the application of the principles in the organization
C401.5	To learn and understand the effective administration
	CS8792 - CRYPTOGRAPHY AND NETWORK SECURITY
C402.1	Understand the fundamentals of networks security, security architecture, threats and vulnerabilities
C402.2	Apply the different cryptographic operations of symmetric cryptographic algorithms
C402.3	Apply the different cryptographic operations of public key cryptography
C402.4	Apply the various Authentication schemes to simulate different applications
C402.5	Understand various Security practices and System security standards
	CS8791- CLOUD COMPUTING
C403.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing
C403.2	Learn the key and enabling technologies that help in the development of cloud
C403.3	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models
C403.4	Explain the core issues of cloud computing such as resource management and security
C403.5	Be able to install and use current cloud technologies
C403.6	Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud
	OEC754 - MEDICAL ELECTRONICS
C404.1	Know the human body electro-physiological parameters and recording of bio-potentials
C404.2	Comprehend the non-electrical physiological parameters and their measurement - body temperature, blood pressure, pulse, blood cell count, blood flow meter etc.,
C404.3	Interpret the various assist devices used in the hospitals viz.,pacemakers, defibrillators, dialyzers and ventilators
C404.4	Comprehend physical medicine methods eg.ultrasonic, shortwave, microwave surgical diathermies & bio-telemetry principles and methods
C404.5	Know about recent trends in medical instrumentation



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An ISO 9001: 2015 Certified Institution

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IT8075 - SOFTWARE PROJECT MANAGEMENT	
C405.1	Understand Project Management principles while developing software
C405.2	Gain extensive knowledge about the basic project management concepts, framework and the process models
C405.3	Obtain adequate knowledge about software process models and software effort estimation techniques
C405.4	Estimate the risks involved in various project activities
C405.5	Define the checkpoints, project reporting structure, project progress and tracking mechanisms using project management principles
C405.6	Learn staff selection process and the issues related to people management
CS8079 - HUMAN COMPUTER INTERACTION	
C406.1	Design effective dialog for HCI
C406.2	Design effective HCI for individuals and persons with disabilities
C406.3	Assess the importance of user feedback
C406.4	Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites
C406.5	Develop meaningful user interface
CS8711 - CLOUD COMPUTING LABORATORY	
C407.1	Configure various virtualization tools such as Virtual Box, VMware workstation
C407.2	Design and deploy a web application in a PaaS environment.
C407.3	Learn how to simulate a cloud environment to implement new schedulers
C407.4	Install and use a generic cloud environment that can be used as a private cloud
C407.5	Manipulate large data sets in a parallel environment
IT8761 - SECURITY LABORATORY	
C408.1	Develop code for classical Encryption Techniques to solve the problems
C408.2	Build cryptosystems by applying symmetric and public key encryption algorithms
C408.3	Construct code for authentication algorithms
C408.4	Develop a signature scheme using Digital signature standard
C408.5	Demonstrate the network security system using open source tools
CS8811 - PROJECT WORK	
C409.1	Identify the problem by applying acquired knowledge.
C409.2	Analyze and categorize executable project modules after considering risks.
C409.3	Choose efficient tools for designing project modules.
C409.4	Combine all the modules through effective team work after efficient testing
C409.5	Elaborate the completed task and compile the project report.

ABBREVIATIONS

- C101.1** **C stands for Course**
- 1 stands for year of study**
- 01 stands for first paper as per the curriculum**
- .1 stands for Outcomes for particular course**

***The same format is followed for remaining years and courses**