K.L.N College of Engineering

Department of Information Technology

Regulation-2013

Course Outcomes

Sl.No	Semester	Course	CODE
1	I SEM	HS6151/TECHNICAL ENGLISH – I	C101
2		MA6151/MATHEMATICS I	C102
3		PH6151/ ENGINEERING PHYSICS I	C103
4		CY6151 / ENGINEERING CHEMISTRY – I	C104
5		GE 6151/ COMPUTER PROGRAMMING	C105
6		GE6152/ ENGINEERING GRAPHICS	C106
7		GE6161/ COMPUTER PRACTICES LABORATORY	C107
8		GE6162 ENGINEERING PRACTICE LABORATORY	C108
9		GE6163 /PHYSICS AND CHEMISTRY LAB I	C109

HS6151/TECHNICAL ENGLISH – I (C101)	
C101.1	Apply the collaborative and social aspects of research and writing processes
C101.2	Comprehend that research and writing is a series of tasks, including accessing, retrieving, evaluating, analyzing, and synthesizing appropriate data and information from sources that vary in content, format, structure, and scope
C101.3	Use appropriate technologies to organize, present, and communicate information to address a range of audiences, purposes, and genres.
C101.4	Explain the relationships among language, knowledge, and power including social, cultural, historical, and economic issues related to information, writing, and technology.
C101.5	Demonstrate the role of a variety of technologies/media in accessing, retrieving, managing, and communicating information.

MA6151/MATHEMATICS I (C102)	
C102.1	Find the eigen values and eigen vectors to diagonalise and reduce a matrix to quadratic form.
C102.2	Check the converges, diverges of infinite series
C102.3	Obtain the evaluate and envelopes of a given curves by means of radius and centre of curvature
C102.4	Calculate the maxima and minima value functions of two variables
C102.5	Find the area of plain curves and volume of solid using double and triple integrals.

PH6151/ ENGINEERING PHYSICS I (C103)	
C103.1	Classify the Bravais lattices, and different types of crystal structures & growth techniques.
C103.2	Demonstrate the properties of elasticity and heat transfer of objects.
C103.3	Explain Black body Radiation and properties of matter waves and Schrodinger wave equations.
C103.4	Illustrate the acoustic requirements, production and application of ultrasonic.
C103.5	Examine the characteristics of laser and optical fiber.
CY6151 / Engineering Chemistry – I (C104)	
C104.1	Classify the polymers and their utility in the industries and describe the techniques of polymerization and properties of polymers.
C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constants and its significance.
C104.3	Explain the photophysical processes such as fluorescence and phosphorescence and various components of UV and IR spectrophotometer.
C104.4	Illustrate the phase transitions of one component and two component systems and the types of alloys and their applications in industries.
C104.5	Outline the synthesis, characteristics and the applications of nano materials.

GE 6151/ Computer Programming (C105)	
C105.1	Demonstrate the Organization of a Computer and number systems.
C105.2	Explain the attributes of algorithm and programming basics
C105.3	Illustrate simple programs by using arrays and string functions
C105.4	Explain functions and pointers for solving problems
C105.5	Develop simple applications using structure and union

GE6152/ ENGINEERING GRAPHICS (C106)	
C106.1	Sketch the conic sections, special curves and draw orthographic views from pictorial views and models.
C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures
C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders and cones and extent its lateral surfaces.
C106.5	Sketch perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.

GE6161/ Computer practices Laboratory(C107)	
C107.1	Make use of Office package for documentation, presentation and visualization charts.
C107.2	Sketch the flow chart for simple problems using problem solving skills
C107.3	Utilize decision making and looping statements for problem solving
C107.4	Apply the concept of array and string manipulation to implement sorting and searching
C107.5	Develop simple applications using structure and union

GE6162 Engineering Practice Laboratory (C108)	
C108.1	A) Apply the knowledge of pipeline connections to household fittings and Industrial buildings. B) Use wiring circuit for Residential House, Fluorescent Lamp and Stair Case.
C108.2	A) Prepare the different joints in roofs, doors, windows and furniture. B) Identify electrical Quantities of V,I& PF in RLC and Energy with Single Phase Energy meter.
C108.3	A) Perform step turning operation in a lathe. B) Demonstrate Logic Gates and Electronic components.
C108.4	A) Perform the various building processes and know about its applications B) Demonstrate PCB with Electronic components, devices, circuits for general purposes.
C108.5	A) Produce a funnel using sheet metal. B) Demonstrate HWR & FWR with ripple factor & test for generation of clock signal.

GE6163 /Physics and Chemistry Lab I (C109)	
C109.1	Evaluate the wavelength of spectral lines using spectrometer and the wavelength of laser, particle size, acceptance angle of an optical fiber using semiconductor diode laser.
C109.2	Appraise the Young's modulus of the beam by non-uniform bending method, the velocity of sound and compressibility of the liquid using ultrasonic interferometer and thermal conductivity for bad conductors using Lee's disc apparatus.
C109.3	Determine the DO content in water sample by winkler's method and molecular weight of polymer by Ostwald viscometer.
C109.4	Find the strength of an acid using pH meter and conductometer
C109.5	Estimate the amount of weak and strong acids in a mixture by conductometer

Sl.No	Semester	Course	CODE
1	II SEM	**HS 6251 Technical English-II**	**C110**
2		**MA6251-MATHEMATICS II**	**C111**
3		**PH6251/ ENGINEERING PHYSICS II**	**C112**
4		**CY6251 / Engineering Chemistry – II**	**C113**
5		**CS6201-Digital Principles and System Design**	**C114**
6		**CS6202 – Programming and Data Structures I**	**C115**
7		**GE6262 /Physics and Chemistry Lab II**	**C116**
8		**IT6211- Digital Lab**	**C117**
9		**IT6212 /Programming Data Structures Lab I**	**C118**

HS 6251 Technical English-II (C110)	
C110.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies
C110.2	Write cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.
C110.3	Read different genres of texts adopting various reading strategies
C110.4	Listen/view and comprehend different spoken discourses/excerpts in different accents
C110.5	Recognize, understand, and analyze the context within which language, information, and knowledge are produced, managed, organized, and disseminated

MA6251-MATHEMATICS II (C111)	
C111.1	Find solenoidal, irrotational vectors and explain the concept of Green's, Gauss divergence, Stoke's theorem to evaluate single, double and triple integrals.
C111.2	Obtain the P.I of Cauchy and Legendre equation, explain the method of variation of parameters and solve simultaneous linear equations.
C111.3	Evaluate Laplace Transforms of periodic functions and solve ODE using Inverse Laplace Transforms.
C111.4	Recall the properties of analytic function for verifying C-R equations and determine Bilinear Transformation.
C111.5	Expand functions of two variables as Taylor's and Laurent's series and evaluate contour integrals using Cauchy's formulas

PH6251/ ENGINEERING PHYSICS II (C112)	
C112.1	Illustrate Classical and Quantum free electron theory& calculate carrier concentration in metals.
C112.2	Describe the carrier concentration in semiconductors and identify the P-type & N-type semiconductor using Hall Effect.
C112.3	Classify the different types of magnetic and superconducting materials
C112.4	Explain the dielectrics, types of polarization, losses and breakdowns
C112.5	Discuss the properties, preparation and applications of Metallic Alloys, SMA, Nanomaterials, NLO, and Biomaterials.

CY6251 / Engineering Chemistry – II (C113)	
C113.1	Explain the problems of using hard water in boilers and methods of treatment of water for boiler use.
C113.2	Design the electro chemical cells and to identify the types of corrosion and the methods of prevention.
C113.3	Illustrate the methods of harnessing energy from non-conventional energy sources.
C113.4	Classify various engineering materials and their important.
C113.5	Relate the significance of solid, liquid and gaseous fuel and to calculate the calorific values of fuels and the requirement of air for combustion in furnaces.

CS6201-Digital Principles and System Design (C114)	
C114.1	Apply Arithmetic operations in any number system and various techniques to simplify the Boolean functions.
C114.2	Build Combinational & Sequential logic Circuits that perform arithmetic & Shift operations correspondingly.
C114.3	Analyze Combinational & Sequential logic design.
C114.4	Model Memory arrays for the appropriate problem.
C114.5	Develop HDL code for Combinational & Sequential logic circuits.

CS6202 – Programming and Data Structures I (C115)	
C115.1	Develop Programs using functions and Pointers.
C115.2	Explain the File handling concept in C language
C115.3	Discuss about the various Linear Data Structure Operations and applications using ADT.
C115.4	Explain the various algorithms for sorting and searching
C115.5	Demonstrate the indexing techniques in data structures

GE6262 /Physics and Chemistry Lab II (C116)	
C116.1	Appraise the Young's modulus of the beam by uniform bending method, the moment of inertia and Rigidity Modulus for thin wire using Torsion Pendulum.
C116.2	Use Poiseuille's method for determining the coefficient of viscosity of the liquid.
C116.3	Evaluate the refractive index of spectral lines for determining the dispersive power of prism and the thickness of a thin wire through interference fringes using Air wedge apparatus.
C116.4	Determine the type, amount of alkalinity , hardness in a given water sample and evaluate the amount of copper using EDTA method
C116.5	Examine the potentiometric redox titration and Conductometric precipitation titration

IT6211- Digital Lab (C117)	
C117.1	Apply Boolean simplification techniques to construct combinational logic circuits
C117.2	Build combinational logic circuits to perform arithmetic operations.
C117.3	Construct Sequential logic circuits to perform Count & Shift operations.
C117.4	Develop HDL Code to model Combinational & Sequential logics.
C117.5	Develop a simple digital system.

IT6212 /Programming Data Structures Lab I (C118)	
C118.1	Develop simple C Programs using pointers and Functions.
C118.2	Develop C program for linear data structure operations and its applications
C118.3	Experiment with File Manipulation concepts.
C118.4	Develop programs using various sorting algorithms.
C118.5	Develop programs using different searching methods.

Sl.No	Semester	Course	CODE
1	III SEM	**MA6351- Transforms and Partial Differential Equations**	C201
2		**CS6301 - Programming & Data Structures II**	C202
3		**CS6302 -Database Management System**	C203
4		**CS6303 -Computer Architecture**	C204
5		**CS6304 -Analog And Digital Communication**	C205
6		**GE6163 -Environmental Science and Engineering**	C206
7		**IT6311 - Programming & Data Structures Lab II**	C207
8		**IT6312- Database Management System Lab**	C208
9		**IT6313 – Digital Communication Lab**	C209

MA6351& Transforms and Partial Differential Equations (C201)	
C201.1	Solve First, Second order homogeneous and non homogeneous partial differential equations
C201.2	Find the Fourier series of a given function satisfying Dirchlet's condition.
C201.3	Apply Fourier series to solve one dimensional way, one and two dimensional heat equations
C201.4	Determine Fourier transform for a given function and use them to evaluate certain definite Integrals
C201.5	Determine z transforms of standard functions and use them to solve difference equations

CS6301 & Programming & Data Structures II(C202)	
C202.1	Explain the fundamentals of Object Oriented Programming.
C202.2	Demonstrate the concepts of data abstraction, encapsulation and inheritance.
C202.3	Outline the concepts of Exception handling and templates.
C202.4	Summarize about tree preliminaries.
C202.5	Demonstrate different Non-linear data structures algorithms

CS6302 Database Management System (C203)	
C203.1	Illustrate the database design for applications.
C203.2	Make use of ER diagram and normalization techniques in database application.
C203.3	Apply concurrency control & recovery mechanism for database problems.
C203.4	Apply the various concepts in query processing.
C203.5	Compare various storage techniques in data mining.

CS6303 / Computer Architecture (C204)	
C204.1	Explain The Computer Organization Components, Instructions And Addressing Modes.
C204.2	Demonstrate Arithmetic Operations
C204.3	Interpret the basic of MIPS implementation and pipelining
C204.4	Outline the concept of Parallelism and multi-core Processor.
C204.5	Classify the Memory Technologies and I/O Systems

CS6304 – ANALOG AND DIGITAL COMMUNICATION (C205)	
C205.1	Illustrate analog communication techniques.
C205.2	Explain digital communication techniques.
C205.3	Illustrate data and pulse communication techniques.
C205.4	Make use of various error control coding techniques to Identify/correct errors.
C205.5	Outline multi-user radio communication.

GE6163 Environmental Science and Engineering(C206)	
C206.1	Explain the issues of scientific, social and economic environmental problem.
C206.2	Apply the solutions for environmental issues.
C206.3	Infer the importance of environment by accessing the human world
C206.4	Explain the dynamic processes and features of earth's interior and surface.
C206.5	Analyze the impact of Environmental integrated themes and social issues.

IT6311 & Programming & Data Structures Lab II(C207)	
C207.1	Select good programming design methods for program development.
C207.2	Develop C++ programs for object oriented concepts
C207.3	Develop C++ programs for handling exceptions
C207.4	Develop C++ programs for practical problems using non-linear data structures
C207.5	Develop recursive programs using trees and graphs.

IT6312 Database Management System Lab (C208)	
C208.1	Infer database language commands to create simple database.
C208.2	Analyze the database using queries to retrieve records.
C208.3	Applying PL/SQL for processing database.
C208.4	Analyze front end tools to design forms, reports and menus.
C208.5	Develop solutions using database concepts for real time requirements.

IT6313 – Digital Communication Lab (C209)	
C209.1	Explain the concepts of Sampling& reconstruction. AM modulation & demodulation.
C209.2	Describe FM modulation & demodulation, PCM
C209.3	Compare Delta modulation & Adaptive delta modulation, Line coding schemes.
C209.4	Analyze BPSK, BFSK modulation & demodulation using simulation & kit based.
C209.5	Explain FSK, PSK, DPSK, Error control schemes.

Sl.No	Semester	Course	CODE
1	IV SEM	**MA6453 - Probability and Queuing Theory**	C210
2		**EC6504- Microprocessor and Microcontroller**	C211
3		**CS6402 - Design and Analysis of Algorithms**	C212
4		**CS6401 - Operating Systems**	C213
5		**CS6403 – Software Engineering**	C214
6		**IT6411 – Microprocessor & Microcontroller Lab**	C215
7		**IT6412 - Operating Systems Laboratory**	C216
8		**IT6413 – Software Engineering Laboratory**	C217

MA6453 & **Probability and Queuing Theory (C210)**	
C210.1	Identify the functions of discrete and continuous random variables, moments and moment generating function
C210.2	Solve problems in marginal conditional distribution, using the concepts of correlation, regressions and transformation of two dimensional random variables.
C210.3	Determine the process is either SSS or WSS, find the TPM of Markov chain and its classifications.
C210.4	Analyze the concepts of queuing models.
C210.5	Apply non Markovian queues to open and closed networks.

EC6504- Microprocessor and Microcontroller (C211)	
C213.1	Explain about the architecture of microprocessor and microcontroller
C213.2	Demonstrate the programs on 8086 microprocessor.
C213.3	Illustrate the Bus structure and communication of microprocessor
C213.4	Illustrate the design aspects of I/O and memory interfacing circuits
C213.5	Develop a simple microcontroller based systems

CS6402 - Design and Analysis of Algorithms (C212)	
C212.1	Interpret the fundamentals of algorithms in problem solving.
C212.2	Classify the different algorithm design techniques for problem solving.
C212.3	Develop algorithms for various computing problems.
C212.4	Analyze the time and space complexity of various algorithms.
C212.5	Identify the limitations of algorithms in problem solving.

CS6401 & OPERATING SYSTEMS (C213)	
C211.1	Explain the basic concepts and functions of Operating Systems.
C211.2	Outline various threading models, process synchronization deadlocks and CPU scheduling algorithms.
C211.3	Compare and contrast various memory management schemes.
C211.4	Explain I/O management and file systems
C211.5	Model Linux multifunction server and utilize local network services.

CS6403 – Software Engineering (C214)	
C214.1	Explain the software engineering process and project management
C214.2	Demonstrate software requirements and analysis
C214.3	Outline the software design process and user interface
C214.4	Compare and contrast various software testing
C214.5	Discuss about the software integration and project management

IT6411 – Microprocessor & Microcontroller Lab (C215)	
C215.1	Develop ALP for fixed and Floating Point and Arithmetic operations using 8086 microprocessor.
C215.2	Make use of different I/O interfacing with 8086 microprocessor
C215.3	Construct different waveforms using 8086 microprocessor
C215.4	Model serial and parallel interfacing of 8086 microprocessor
C215.5	Develop assembly language programs for various applications using 8051 microcontroller

IT6412 & OPERATING SYSTEMS LABORATORY (C216)	
C217.1	Experiment with Unix commands and shell programming
C217.2	Build ‘C’ program for process and file system management using system calls
C217.3	Choose the best CPU scheduling algorithm for a given problem instance
C217.4	Identify the performance of various page replacement algorithms
C217.5	Develop algorithm for deadlock avoidance, detection and file allocation strategies

IT6413 – Software Engineering Laboratory (C217)	
C217.1	Design and implement complex software solutions using state of the art software engineering techniques.
C217.2	Work with knowledge of UML, source control, and project management.
C217.3	Test and document the software
C217.4	Develop significant projects given deadline.
C217.5	Present their work in a professional manner

Sl.No	Semester	Course	CODE
1	V SEM	**CS6551 Computer Networks**	C301
2		**IT6501 Graphics And Multimedia**	C302
3		**CS6502 – Object Oriented Analysis and Design**	C303
4		**IT6502- Digital Signal Processing**	C304
5		**IT6503 -Web Programming**	C305
6		**EC6801 Wireless Communication**	C306
7		**IT6511 – Networks Laboratory**	C307
8		**IT6512 Web Programming Lab**	C308
9		**IT6513 - Case Tools Laboratory**	C309

CS6551 Computer Networks (C301)	
C301.1	Explain the components requirement of networks and Link layer services
C301.2	Classify the Media Access Control Protocols and different Internetworking.
C301.3	Demonstrate various types of routing techniques
C301.4	Outline the mechanisms involved in Transport Layer.
C301.5	Experiment with different application layer protocols

IT6501 GRAPHICS AND MULTIMEDIA (C302)	
C302.1	Apply algorithms to draw 2D objects and to implement 2D geometric transformations.
C302.2	Describe Projection concepts, Visibility Detection and animation techniques
C302.3	Explain the concepts of multimedia, multimedia architecture and multimedia databases.
C302.4	Examine Compression & Decompression techniques, File format and Storage and retrieval technologies
C302.5	Discuss about hypermedia messaging standards & Distributed Multimedia Systems

CS6502 – Object Oriented Analysis and Design (C303)	
C303.1	Explain OOAD concepts and use case modeling.
C303.2	Select an appropriate design pattern
C303.3	Illustrate about domain models and conceptual classes.
C303.4	Compare and contrast various testing techniques.
C303.5	Construct projects using UML diagrams.

IT6502- DIGITAL SIGNAL PROCESSING (C304)	
C304.1	Classify Discrete Time signals & Systems
C304.2	Apply frequency transforms for the signals.
C304.3	Construct IIR filters
C304.4	Construct FIR filters.
C304.5	Analyze finite word length effects in digital filters

IT6503 Web Programming (C305)	
C305.1	Relate the concepts of web programming and design web pages
C305.2	Interpret the concepts of Object Orientation and develop programs in java
C305.3	Create databases with JDBC connectivity
C305.4	Experiment with applets and server side programming
C305.5	Construct a web service with the support of XML

EC6801 Wireless Communication (C306)	
C306.1	Explain wireless channels
C306.2	Develop a cellular system
C306.3	Illustrate various signaling schemes for fading channels
C306.4	Compare multipath mitigation techniques and analyze their performance
C306.5	Construct systems with transmit/receive diversity and MIMO systems and analyze their performance

IT6511 – Networks Laboratory (C307)	
C307.1	Use the Socket Programming
C307.2	Use simulation tools
C307.3	Implement the various protocols.
C307.4	Analyze the performance of the protocols in different layers.
C307.5	Analyze various routing algorithms

IT6512 Web Programming Lab (C308)	
C308.1	Design Web pages using HTML/DHTML and style sheets
C308.2	Develop user interfaces using Java frames and applets
C308.3	Design and Implement database applications
C308.4	Construct dynamic web pages using server side scripting.
C308.5	Experiment with Client Server applications.

IT6513 - CASE TOOLS LABORATORY (C309)	
C309.1	Outline the problem statement for a given problem
C309.2	Construct USE CASE model to identify the classes and functionality of the system
C309.3	Show the objects interaction for all the system functionality
C309.4	Develop code from system design
C309.5	Examine the developed code using testing strategies

Sl.No	Semester	Course	CODE
1	VI SEM	**CS6601 - Distributed System**	C310
2		**IT6601 - Mobile Computing**	C311
3		**CS6659 -Artificial Intelligence**	C312
4		**CS6660 -Complier Design**	C313
5		**IT6602 – Software Architectures**	C314
6		**GE6757 Total Quality Management**	C315.E4
7		**IT6611 –Mobile Application Development Laboratory**	C316
8		**IT6612- Compiler Laboratory**	C317
9		**HS1301 -Communication and soft Skills Laboratory**	C318

CS6601 DISTRIBUTED SYSTEM (C310)	
C310.1	Explain the distributed systems architecture.
C310.2	Outline the inter process communication in distributed systems.
C310.3	Explain the file accessing model and various services in distributed system.
C310.4	Demonstrate concurrency control and properties of transaction in Distributed systems.
C310.5	Discuss resource and process management in distributed system

IT6601 Mobile Computing (C311)	
C311.1	Explain the basics of mobile Computing
C311.2	Describe the functionality of Mobile IP and Transport Layer.
C311.3	Classify different types of mobile telecommunication systems
C311.4	Demonstrate the Adhoc networks concepts and its routing protocols
C311.5	Make use of mobile operating systems in developing mobile applications

CS6659 ARTIFICIAL INTELLIGENCE (C312)	
C312.1	Identify problems that are amenable to solution by AI methods
C312.2	Recognize appropriate AI methods to solve a given problem
C312.3	Discuss a given problem in the language/framework of different AI methods
C312.4	Develop basic AI algorithms
C312.5	Model an empirical evaluation of different algorithms on a problem formalization, and state the conclusions that the evaluation supports

CS6660 Complier Design (C313)	
C313.1	Explain the phases of a Compiler
C313.2	Illustrate the translation of regular expression into parse tree using syntax analyzer
C313.3	Construct the intermediate representation considering the type systems
C313.4	Apply the optimization techniques for the generated code
C313.5	Use the different compiler construction tools to develop a simple compiler

IT6602 – Software Architectures (C314)	
C314.1	Explain influence of software architecture on business and technical activities
C314.2	Identify key architectural structures
C314.3	Make use of views to specify architecture
C314.4	Examine the architectural styles
C314.5	Design document for a given architecture

GE6757 TOTAL QUALITY MANAGEMENT (C315.E4)	
CE314.1	Outline the Dimensions and Barriers regarding with Quality
CE314.2	Illustrate the TQM Principles
CE314.3	Demonstrate tools utilization for quality improvement
CE314.4	Explain the various types of techniques that are used to measure Quality
CE314.5	Apply various Quality Systems and auditing on implementation of TQM

IT6611 –Mobile Application Development Laboratory (C316)	
C316.1	Build a native application using GUI components and Mobile application development framework
C316.2	Develop an application using basic graphical primitives and databases
C316.3	Construct an application using multi threading and RSS feed
C316.4	Make use of location identification using GPS in an application
C316.5	Model new applications to hand held devices

IT6612 COMPILER LABORATORY (C317)	
C317.1	Apply different compiler writing tools to implement the different Phases
C317.2	Analyze the data flow and control flow
C317.3	Construct the intermediate representation
C317.4	Design the back end of a compiler for 8086 assembler
C317.5	Compare various code optimization techniques

HS1301 Communication and soft Skills Laboratory (C318)	
C318.1	Apply appropriate communication skills across settings, purposes, and audiences
C318.2	Develop Knowledge of communication using technology prominent to diverse situations
C318.3	Organize critical thinking to develop innovative and well-founded perspectives related to the students' emphases
C318.4	Make use of healthy and effective human relationships
C318.5	Demonstrate appropriate and professional ethical behavior

Sl.No	Semester	Course	CODE
1	VII SEM	IT6701 Information Management	C401
2		CS6701 - Cryptography & Network Security	C402
3		IT6702- Data Warehousing And Data Mining	C403
4		CS6703 Grid and Cloud Computing	C404
5		IT6004 -Software Testing	C405.E2
6		IT6711 -Data Mining Laboratory	C406
7		IT6712 Security Laboratory	C407
8		IT6713 – Grid and Cloud Computing Lab	C408

IT6701 Information Management (C401)	
C401.1	Explain relational database topics including logical and physical design and modeling
C401.2	Design and implement a complex information system that meets regulatory requirements, define and manage an organizations key master data entities
C401.3	Design, Create and maintain data warehouses.
C401.4	Explain about the information architecture and framework.
C401.5	Describe about recent advances in NOSQL , Big Data and related tools

CS6701 - Cryptography & Network Security (C402)	
C402.1	Outline the basics of number theory and compare various encryption techniques.
C402.2	Summarize the functionality of public key cryptography.
C402.3	Compare various message authentication functions and secure algorithms.
C402.4	Demonstrate system-level security applications and the implementation of security in various network layers.
C402.5	Identify the different types of attacks and apply security algorithms.

IT6702 DATA WAREHOUSING AND DATA MINING (C403)	
C403.1	Outline data ware concepts and architecture
C403.2	Summarize the various OLAP types
C403.3	Explain the data mining techniques
C403.4	Make use of tool for association rule mining and classification
C403.5	Compare the clustering methods

CS6703 Grid and Cloud Computing (C404)	
C404.1	Outline the concept of Grid and Cloud Architectures.
C404.2	Illustrate the data intensive grid service models and grid computing techniques
C404.3	Demonstrate the concept of virtualization in cloud.
C404.4	Experiment with the programming model for Hadoop's and Globus toolkit.
C404.5	Interpret the security models in the grid and cloud environment.

IT6004 SOFTWARE TESTING (C405.E2)	
C405.E2.1	Outline the software testing criteria for developing test cases
C405.E2.2	Build the test cases for software development.
C405.E2.3	Explain the various level of testing
C405.E2.4	Discuss about the test metrics, measurements and Management process
C405.E2.5	Make use of the latest test tool for functional and performance testing

IT6711 DATA MINING LABORATORY (C406)	
C406.1	Create a Data Warehouse
C406.2	Use data mining tools.
C406.3	Implement Clustering methods
C406.4	Apply of Classification
C406.5	Apply data mining techniques and methods to large data sets.

IT6712 SECURITY LABORATORY(C407)	
C407.1	Explain the different cipher techniques.
C407.2	Implement the algorithms DES, RSA, MD5, and SHA-1
C407.3	Use tools like GnuPG, KF sensor, Net Strumbler.
C407.4	Demonstrate how to provide secure data storage,secure data transmission and for creating digital signatures.
C407.5	Employ intrusion detection system using tools.

IT6713 – Grid and Cloud Computing Lab (C408)	
C408.1	Make use of Globus Toolkit for Grid environment
C408.2	Develop a Grid Service
C408.3	Apply security mechanism for a grid service
C408.4	Develop a application in the cloud
C408.5	Experiment with hadoop's map-reduce framework

Sl.No	Semester	Course	CODE
1	VIII SEM	IT6801 – Service Oriented Architecture (C409)	C409
2		IT6008- Network Programming and Management (C410.E2)	C410.E2
3		IT6010- Business Intelligence(C411.E5)	C411.E5
4		**MG6088 - Software Project Management(C412.E5)**	C412.E5
5		**IT6811 - Project Work (C413)**	C413

IT6801 – Service Oriented Architecture (C409)	
C409.1	Infer the XML schema, name spaces and document structure.
C409.2	Build applications based on XML.
C409.3	Outline the service oriented architecture principles and service layers
C409.4	Develop web services using SOAP and UDDI technologies
C409.5	Build SOA based applications for enterprises.

IT6008- Network Programming and Management (C410.E2)	
C410.E2.1	Explain the basics of socket programming using TCP,UDP
C410.E2.2	Identify high performance scalable applications
C410.E2.3	Employ necessary basic knowledge for managing computer communication networks
C410.E2.4	Describe about raw sockets and Evaluate basic theories, processes and outcomes of network
C410.E2.5	Discuss about simple network management protocols & practical issues.

IT6010- BUSINESS INTELLIGENCE(C411.E5)	
C411.E5.1	Explain the basic rudiments of business intelligence system.
C411.E5.2	Describe the modeling aspects behind Business Intelligence.
C411.E5.3	Discuss the business intelligence life cycle and the techniques used in it
C411.E5.4	Choose different data analysis tools and techniques.
C411.E5.5	Examine analysis queries for analyzing business data.

MG6088 - SOFTWARE PROJECT MANAGEMENT(C412.E5)	
C412.E5.1	Explain the need for Software Project Management and control
C412.E5.2	Classify the various activities of project scheduling and evaluation.
C412.E5.3	Outline the risk assessment and management process
C412.E5.4	Demonstrate different models of software process and network planning
C412.E5.5	Summarize organizational behaviors and management

IT6811 & PROJECT WORK (C413)	
C413.1	Identify the problem by applying acquired knowledge.
C413.2	Analyze and categorize executable project modules after considering risks.
C413.3	Choose efficient tools for designing project modules.
C413.4	Combine all the modules through effective team work after efficient testing.
C413.5	Elaborate the completed task and compile the project report.