

**KLN COLLEGE OF ENGINEERING**  
**B.E. Computer Science and Engineering**  
**Choice Based Credit System Regulation–2017**  
**I-VIII Semesters Course Outcomes**

S.No.	Sem	Course Code	Subject Code	Course Title
1.	I	C101	HS8151	Communicative English
2.		C102	MA8151	Engineering Mathematics - I
3.		C103	PH8151	Engineering Physics
4.		C104	CY8151	Engineering Chemistry
5.		C105	GE8151	Problem Solving and Python Programming
6.		C106	GE8152	Engineering Graphics
7.		C107	GE8161	Problem Solving and Python Programming Laboratory
8.		C108	BS8161	Physics and Chemistry Laboratory
9.	II	C109	HS8251	Technical English
10.		C110	MA8251	Engineering Mathematics - II
11.		C111	PH8252	Physics for Information Science
12.		C112	BE8255	Basic Electrical, Electronics and Measurement Engineering
13.		C113	GE8291	Environmental Science and Engineering
14.		C114	CS8251	Programming in C
15.		C115	GE8261	Engineering Practices Laboratory
16.		C116	CS8261	C Programming Laboratory
17.	III	C201	MA8351	Discrete Mathematics
18.		C202	CS8351	Digital Principles and System Design
19.		C203	CS8391	Data Structures
20.		C204	CS8392	Object Oriented Programming
21.		C205	EC8395	Communication Engineering
22.		C206	CS8381	Data Structures Laboratory
23.		C207	CS8383	Object Oriented Programming Laboratory
24.		C208	CS8382	Digital Systems Laboratory
25.		C209	HS8381	Interpersonal Skills/Listening & Speaking
26.	IV	C210	MA8402	Probability and Queueing Theory
27.		C211	CS8491	Computer Architecture
28.		C212	CS8492	Database Management Systems
29.		C213	CS8451	Design and Analysis of Algorithms
30.		C214	CS8493	Operating Systems
31.		C215	CS8494	Software Engineering
32.		C216	CS8481	Database Management Systems Laboratory
33.		C217	CS8461	Operating Systems Laboratory
34.		C218	HS8461	Advanced Reading and Writing

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S.No.	Sem	Course Code	Subject Code	Course Title
1.	V	C301	MA8551	Algebra and Number Theory
2.		C302	CS8591	Computer Networks
3.		C303	EC8691	Microprocessors and Microcontrollers
4.		C304	CS8501	Theory of Computation
5.		C305	CS8592	Object Oriented Analysis and Design
6.		CE306	OEC552	Soft Computing (Open Elective I)
7.		C307	EC8681	Microprocessors and Microcontrollers Lab
8.		C308	CS8582	Object Oriented Analysis and Design Laboratory
9.		C309	CS8581	Networks Laboratory
10.	VI	C310	CS8651	Internet Programming
11.		C311	CS8691	Artificial Intelligence
12.		C312	CS8601	Mobile Computing
13.		C313	CS8602	Compiler Design
14.		C314	CS8603	Distributed Systems
15.		CE315	-	Professional Elective I
16.		C316	CS8661	Internet Programming Laboratory
17.		C317	CS8662	Mobile Application Development Laboratory
18.		C318	CS8611	Mini Project
19.		C319	HS8581	Professional Communication
20.	VII	C401	MG8591	Principles of Management
21.		C402	CS8792	Cryptography and Network Security
22.		C403	CS8791	Cloud Computing
23.		CE404	-	Open Elective II
24.		CE405	-	Professional Elective II
25.		CE406	-	Professional Elective III
26.		C407	CS8711	Cloud Computing Laboratory
27.		C408	IT8761	Security Laboratory
28.	VIII	CE409	-	Professional Elective IV
29.		CE410	-	Professional Elective V
30.		C411	CS8811	Project Work

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**PROFESSIONAL ELECTIVES (PE)**

**SEMESTER VI**

**ELECTIVE – I**

S.No.	Subject Code	Course Title
1.	CS8075	Data Warehousing and Data Mining
2.	IT8076	Software Testing
3.	IT8072	Embedded Systems
4.	CS8072	Agile Methodologies
5.	CS8077	Graph Theory and Applications
6.	IT8071	Digital Signal Processing
7.	GE8075	Intellectual Property Rights

**SEMESTER VII**

**ELECTIVE – II**

S.No.	Subject Code	Course Title
1.	CS8091	Big Data Analytics
2.	CS8082	Machine Learning Techniques
3.	CS8092	Computer Graphics and Multimedia
4.	IT8075	Software Project Management
5.	CS8081	Internet of Things
6.	IT8074	Service Oriented Architecture
7.	GE8077	Total Quality Management

**ELECTIVE – III**

S.No.	Subject Code	Course Title
1.	CS8083	Multi-core Architectures and Programming
2.	CS8079	Human Computer Interaction
3.	CS8073	C# and .Net Programming
4.	CS8088	Wireless Adhoc and Sensor Networks
5.	CS8071	Advanced Topics on Databases
6.	GE8072	Foundation Skills in Integrated Product Development
7.	GE8074	Human Rights
8.	GE8071	Disaster Management

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**SEMESTER VIII**

**ELECTIVE – IV**

<b>S.No.</b>	<b>Subject Code</b>	<b>Course Title</b>
1.	EC8093	Digital Image Processing
2.	CS8085	Social Network Analysis
3.	IT8073	Information Security
4.	CS8087	Software Defined Networks
5.	CS8074	Cyber Forensics
6.	CS8086	Soft Computing
7.	GE8076	Professional Ethics in Engineering

**ELECTIVE – V**

<b>S.No.</b>	<b>Subject Code</b>	<b>Course Title</b>
1.	CS8080	Information Retrieval Techniques
2.	CS8078	Green Computing
3.	CS8076	GPU Architecture and Programming
4.	CS8084	Natural Language Processing
5.	CS8001	Parallel Algorithms
6.	IT8077	Speech Processing
7.	GE8073	Fundamentals of Nano Science

## YEAR – I SEMESTER – I

Course Code &amp;Name: C101- HS8151 &amp; Communicative English

C101.1	Listen and recognize main ideas from different discourses in different accents.
C101.2	Speak clearly, confidently, comprehensively, and communicate with one or many listeners using appropriate communicative strategies.
C101.3	Read different genres of text adopting various reading strategies
C101.4	Write cohesively and coherently by using a wide range of vocabulary and organize ideas logically on a topic without grammatical errors
C101.5	Determine the main and subordinate ideas, draw conclusions and summarize information from written material

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101.1	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.2	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.3	-	-	-	-	-	-	-	-	2	3	-	2	-	-
C101.4	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.5	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101	-	-	-	-	-	-	-	-	3	3	-	2	-	-



## Course Code &amp;Name: C103- PH8151&amp; Engineering Physics

C103.1	Discuss the properties of elasticity and measure the different moduli of elasticity.
C103.2	Explain the characteristics of waves, Laser and optical fiber
C103.3	Summarize the different modes of heat transfer through objects.
C103.4	Explain the black body radiation, properties of matter waves and schrodinger equations.
C103.5	Distinguish the bravais lattices, crystal structures, crystal imperfections and crystal growth techniques

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C103.1	2	1		-	-	-	-	1	1	1	-	-	1	-
C103.2	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C103.3	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C103.4	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C103.5	1	1	-	-	-	-	-	1	1	1	-	-	1	-
C103	2	1	1	-	-	-	-	1	1	1	-	-	1	-

## Course Code &amp;Name: C104- CY8151&amp; Engineering Chemistry

C104.1	Explain the hardness of water, its types and estimation, boiler troubles and treatment of boiler feed water.
C104.2	Explain adsorption, types and theories of adsorption isotherm and its application in pollution abatement, theories of catalysis and applications.
C104.3	Describe the basic concepts of phase rule and its application to one and two component system, properties, significance and applications of alloys.
C104.4	Relate the significance of solid, liquid and gaseous fuels and to calculate the calorific value of fuels.
C104.5	Illustrate the methods of harvesting energy from non-conventional energy sources.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C104.1	2	1	-	-	-	1	1	-	-	-	-	-	-	-
C104.2	2	1	-	-	-	1	1	-	-	-	-	-	-	-
C104.3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C104.4	2	1	-	-	-	1	-	-	-	-	-	-	-	-
C104.5	2	1	-	-	-	1	1	-	-	-	-	-	-	-
C104	2	1	-	-	-	1	1	-	-	-	-	-	-	-



**COURSE CODE / SUBJECT CODE & NAME : C105 / GE8151 / PROBLEM SOLVING & PYTHON PROGRAMMING**

C105.1	Develop algorithmic solutions to simple computational problems.
C105.2	Develop programs using simple Python statements and expressions.
C105.3	Explain control flow and functions concept in Python for solving problems.
C105.4	Apply Python data structures – lists, tuples & dictionaries for representing compound data.
C105.5	Explain files, exception, modules and packages in Python for solving problems.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C105.1	3	2	1	-	-	-	-	1	1	-	-	2	3	1
C105.2	3	2	1	-	-	-	-	1	1	-	-	2	3	1
C105.3	2	1	-	-	-	-	-	1	1	1	-	2	3	1
C105.4	3	2	1	-	-	-	-	1	1	-	-	2	3	1
C105.5	2	1	-	-	-	-	-	1	1	1	-	2	3	1
C105	3	2	1	-	-	-	-	1	1	1	-	2	3	1

## COURSE CODE / SUBJECT CODE &amp; NAME : C106 / GE8152/ Engineering Graphics

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

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	<b>K3</b>	<b>K4</b>	<b>K5</b>	<b>K6</b>										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>C106.1</b>	3	2	1	-	1	-	-	-	1	-	-	-	-	-
<b>C106.2</b>	3	2	1	-	1	-	-	-	1	-	-	-	-	-
<b>C106.3</b>	3	2	1	-	1	-	-	-	1	-	-	-	-	-
<b>C106.4</b>	3	2	1	-	1	-	-	-	1	-	-	-	-	-
<b>C106.5</b>	3	2	1	-	1	-	-	-	1	-	-	-	-	-
<b>C106</b>	3	2	1	-	1	-	-	-	1	-	-	-	-	-

**COURSE CODE / SUBJECT CODE & NAME : C107 / GE8161 / PROBLEM SOLVING & PYTHON PROGRAMMING LABORATORY**

C107.1	Develop solutions to simple computational problems using Python programs.
C107.2	Solve problems using conditionals and loops in Python.
C107.3	Develop Python programs by defining functions and calling them.
C107.4	Apply Python lists, tuples and dictionaries for representing compound data.
C107.5	Develop Python programs using files.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C107.1	3	2	1	-	-	-	-	1	1	2	-	2	3	1
C107.2	3	2	1	-	-	-	-	1	1	2	-	2	3	1
C107.3	3	2	1	-	-	-	-	1	1	2	-	2	3	1
C107.4	3	2	1	-	-	-	-	1	1	2	-	2	3	1
C107.5	3	2	1	-	-	-	-	1	1	2	-	2	3	1
C107	3	2	1	-	-	-	-	1	1	2	-	2	3	1

## Course Code &amp;Name: C108- BS8161&amp; Chemistry Laboratory

C108.1	Determine and estimate the types of alkalinity & hardness of a given water sample.
C108.2	Estimate the amount of copper content present in a water sample.
C108.3	Determine the strength of an acid by using pH meter.
C108.4	Determine the strength of a pure acid and mixture of acids by using conductivity meter.
C108.5	Estimate the amount of iron content present in a given solution by means of potentiometric titration.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C108.1	3	2	1	-	-	-	-	1	2	1	-	-	-	-
C108.2	3	2	1	-	-	-	-	1	2	1	-	-	-	-
C108.3	3	2	1	-	-	-	-	1	2	1	-	-	-	-
C108.4	3	2	1	-	-	-	-	1	2	1	-	-	-	-
C108.5	3	2	1	-	-	-	-	1	2	1	-	-	-	-
C108	3	2	1	-	-	-	-	1	2	1	-	-	-	-

## Course Code &amp;Name: C108- BS8161&amp; Physics Laboratory

C108.1	Calculate the moment of inertia of disc and rigidity modulus for thin wire using Torsion pendulum.
C108.2	Appraise Young's modulus of the beam by Non-Uniform bending method.
C108.3	Measure the wavelength of LASER, Particle size and basic parameter of optical fiber using Semiconductor diode LASER.
C108.4	Examine the thermal conductivity of bad conductors using Lee's disc apparatus.
C108.5	Determine the wavelength of the prominent spectral lines.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C108.1	3	2	1	-	-	-	-	1	1	1	-	-	-	-
C108.2	3	2	1	-	-	-	-	1	1	1	-	-	-	-
C108.3	3	2	1	-	-	-	-	1	1	1	-	-	-	-
C108.4	3	2	1	-	-	-	-	1	1	1	-	-	-	-
C108.5	2	1		-	-	-	-	1	1	1	-	-	-	-
C108	3	2	1	-	-	-	-	1	1	1	-	-	-	-

## YEAR – I SEMESTER II

Course Code &amp;Name: C109- HS8251 &amp; Technical English

C109.1	Read technical texts and write area- specific texts effortlessly
C109.2	Listen and comprehend lectures and talks in their area of specialization successfully
C109.3	Speak appropriately and effectively in varied formal and informal contexts
C109.4	Write reports and winning job applications.
C109.5	Use appropriate technologies to organize, present, and communicate information to address a range of audiences, purposes, genres

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C109.1	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.2	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.3	-	-	-	-	-	-	-	-	2	3	-	2	-	-
C109.4	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.5	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109	-	-	-	-	-	-	-	-	3	3	-	2	-	-



## Course Code &amp; Name: C111- PH8252 Physics for Information Science

C111.1	Explain the classical and quantum electron theories and energy band structure.
C111.2	Apply basics of semiconductor physics in various devices.
C111.3	Explain magnetic properties of materials.
C111.4	Discuss the functions of optical materials for optoelectronics.
C111.5	Summarize the basics of quantum structure applications and carbon nanotubes.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C111.1	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C111.2	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C111.3	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C111.4	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C111.5	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C111	2	1	1	-	-	-	-	1	1	1	-	-	1	-



**Course Code &Name:** C112- BE8255 & Basic Electrical, Electronics and Measurement Engineering

C112.1	Apply the fundamental laws and network theorems to solve simple and complex linear circuits
C112.2	Explain the basic principle of electrical machines and their performance
C112.3	Describe the different energy sources, protective devices and their field applications
C112.4	Discuss the fundamentals of electronic circuit using diode, transistor and Op amps.
C112.5	Explain the principles and operation of measuring instruments and transducer

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C112.1	3	2	1	-	-	-	-	1	1	-	-	-	1	-
C112.2	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C112.3	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C112.4	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C112.5	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C112	2	1	1	-	-	-	-	1	1	-	-	-	1	-

**Course Code &Name:** C113- GE8291& Environmental Science and Engineering

C113.1	Explain the values, threats and conservation of biodiversity and classify various ecosystems
C113.2	Identify and implement technological and economical solution to environmental pollution
C113.3	Develop the knowledge on various natural resources, their causes and their efforts
C113.4	Explain various environmental acts and to explain various disaster management
C113.5	Relate population growth and environment and the role of IT in environment and human health

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C113.1	-	-	-	-	-	2	3	-	-	-	-	-	-	-
C113.2	-	-	-	-	-	2	3	-	-	-	-	-	-	-
C113.3	-	-	-	-	-	2	3	-	-	-	-	-	-	-
C113.4	-	-	-	-	-	2	3	-	-	-	-	-	-	-
C113.5	-	-	-	-	-	2	3	-	-	-	-	-	-	-
C113	-	-	-	-	-	2	3	-	-	-	-	-	-	-

## Subject Code and Subject : CS8251 &amp; Programming in C

<b>C114.1</b>	Describe various basic programming constructs in C
<b>C114.2</b>	Solve simple mathematical problems using arrays and strings.
<b>C114.3</b>	Illustrate the usage of functions and pointers to develop C programs.
<b>C114.4</b>	Develop simple applications in C using structures and unions.
<b>C114.5</b>	Make use of sequential and random access operations for file handling processes.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	<b>K3</b>	<b>K4</b>	<b>K5</b>	<b>K6</b>										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>C114.1</b>	2	1	-	-	-	-	-	1	1	1	-	1	3	1
<b>C114.2</b>	3	2	1	-	-	-	-	1	1	1	-	1	3	1
<b>C114.3</b>	3	2	1	-	-	-	-	1	1	1	-	1	3	1
<b>C114.4</b>	3	2	1	-	-	-	-	1	1	1	-	1	3	1
<b>C114.5</b>	3	2	1	-	-	-	-	1	1	1	-	1	3	1
<b>C114</b>	3	2	1	-	-	-	-	1	1	1	-	1	3	1

## Course Code &amp;Name: C115- GE8261 &amp; Engineering Practices Lab

C115.1	Apply the knowledge of pipeline connections to household fittings and industrial buildings
C115.2	Prepare the different joints in roofs, doors windows and furniture
C115.3	Perform step turning operation in a lathe
C115.4	Perform the various welding processes and know about it s applications
C115.5	Produce a funnel using sheet metal

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C115.1	3	2	1	-	-	-	-	-	2	-	-	-	-	-
C115.2	3	2	1	-	-	-	-	-	2	-	-	-	-	-
C115.3	3	2	1	-	-	-	-	-	2	-	-	-	-	-
C115.4	3	2	1	-	-	-	-	-	2	-	-	-	-	-
C115.5	3	2	1	-	-	-	-	-	2	-	-	-	-	-
C115	3	2	1	-	-	-	-	-	2	-	-	-	-	-

## Subject Code and Subject: CS8261 &amp; C Programming Laboratory

<b>C116.1</b>	Develop simple programs in C using basic constructs
<b>C116.2</b>	Develop programs in C using arrays and strings to solve simple mathematical problems.
<b>C116.3</b>	Apply functions and pointers to develop C programs
<b>C116.4</b>	Make use of structures to implement simple applications in C.
<b>C116.5</b>	Apply sequential and random access file processing to develop simple applications.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	<b>K3</b>	<b>K4</b>	<b>K5</b>	<b>K6</b>										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>C116.1</b>	3	2	1	-	-	-	-	1	1	2	-	1	3	1
<b>C116.2</b>	3	2	1	-	-	-	-	1	1	2	-	1	3	1
<b>C116.3</b>	3	2	1	-	-	-	-	1	1	2	-	1	3	1
<b>C116.4</b>	3	2	1	-	-	-	-	1	1	2	-	1	3	1
<b>C116.5</b>	3	2	1	-	-	-	-	1	1	2	-	1	3	1
<b>C116</b>	3	2	1	-	-	-	-	1	1	2	-	1	3	1



## Course Code &amp; Name : C202 – CS8351 &amp; Digital Principles and System Design

C202.1	Apply Arithmetic operations in any number system and various techniques to simplify the Boolean function
C202.2	Build combinational circuits that perform arithmetic operations & code Conversions
C202.3	Construct synchronous sequential circuits
C202.4	Construct Asynchronous sequential circuits
C202.5	Model memory arrays for Boolean functions

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C202.1	3	2	1	-	-	-	-	1	1	-	-	1	2	-
C202.2	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C202.3	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C202.4	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C202.5	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C202	3	2	1	-	-	-	-	1	1	-	-	1	2	-

## Course Code &amp; Name : C203 - CS8391&amp; Data Structures

C203.1	Explain the fundamental data structures concept and ADT
C203.2	Apply various linear data structure operations to solve simple applications
C203.3	Construct different tree structures and applications
C203.4	Construct various graph operations and applications like spanning tree and topological sort
C203.5	Illustrate the sorting, searching and hashing techniques in Data Structures

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C203.1	2	1	-	-	-	-	-	1	1	1	-	1	3	1
C203.2	3	2	1	-	-	-	-	1	1	1	-	1	3	1
C203.3	3	2	1	-	-	-	-	1	1	1	-	1	3	1
C203.4	3	2	1	-	-	-	-	1	1	1	-	1	3	1
C203.5	3	2	1	-	-	-	-	1	1	1	-	1	3	1
C203	3	2	1	-	-	-	-	1	1	1	-	1	3	1



## Course Code &amp; Name : C204 - CS8392&amp; Object Oriented Programming

C204.1	Explain the basic concepts of Object Oriented Programming
C204.2	Explain the Principles of inheritance and interfaces.
C204.3	Discuss the Concept of Exception handling mechanism and I/O Streams.
C204.4	Use the Concept of multi-threading and generics classes in java programming
C204.5	Apply the AWT & Swing concepts to build GUI application

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C204.1	2	1	-	-	-	-	-	-	-	-	-	1	2	-
C204.2	2	1	-	-	-	-	-	1	1	-	-	1	2	-
C204.3	2	1	-	-	-	-	-	1	1	-	-	1	2	-
C204.4	3	2	1	-	-	-	-	1	1	-	-	1	2	1
C204.5	3	2	1	-	-	-	-	1	1	-	-	1	2	1
C204	2	1	1	-	-	-	-	1	1	-	-	1	2	1

Course Code &amp; Name : C205- EC8395 &amp; Communication Engineering

C205.1	Illustrate Analog Modulation Techniques.
C205.2	Explain Pulse Modulation Techniques.
C205.3	Illustrate digital Modulation & Transmission Techniques
C205.4	Make use of various error control coding techniques to identify / correct errors.
C205.5	Outline time spread spectrum & multiple Access Techniques.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C205.1	2	1	-	-	-	-	-	1	1	1	-		1	-
C205.2	2	1	-	-	-	-	-	1	1	1	-		1	-
C205.3	2	1	-	-	-	-	-	1	1	1	-		1	-
C205.4	3	2	1	-	-	-	-	1	1	1	-		1	-
C205.5	2	1	-	-	-	-	-	1	1	1	-		1	-
C205.	2	1	2	-	-	-	-	1	1	1	-		1	-

## Course Code &amp; Name : C206 - CS8381 &amp; Data Structures Laboratory

C206.1	Compute array implementation of Stack, Queue and List ADT's using C Program
C206.2	Develop linked list implementation of List Stack and Queue ADT
C206.3	Manipulate binary Trees, Binary search trees and AVL Tree and its operations
C206.4	Compute Graph representation and traversal algorithms
C206.5	Examine searching, sorting and hashing algorithms

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C206.1	3	2	1	-	-	-	-	1	1	3	-	2	3	1
C206.2	3	2	1	-	-	-	-	1	1	3	-	2	3	1
C206.3	3	2	1	-	-	-	-	1	1	3	-	2	3	1
C206.4	3	2	1	-	-	-	-	1	1	3	-	2	3	1
C206.5	3	2	1	-	-	-	-	1	1	3	-	2	3	1
C206	3	2	1	-	-	-	-	1	1	3	-	2	3	1

## Course Code &amp;Name : C207 - CS8383 &amp; Object Oriented Programming Lab

C207.1	Apply the concepts of classes, Packages, interface and inheritance in programming
C207.2	Develop java program for practicing exception handling of files
C207.3	Develop application using generic programming and event handling
C207.4	Built software development skills in java
C207.5	Develop a java program for real world application

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C207.1	3	2	1	-	-	-	-	1	1	3	-	1	3	1
C207.2	3	2	1	-	-	-	-	1	1	3	1	1	3	1
C207.3	3	2	1	-	-	-	-	1	1	3	1	1	3	1
C207.4	3	2	1	-	-	-	-	1	1	3	3	1	3	1
C207.5	3	2	1	-	1	-	-	1	1	3	3	1	3	1
C207	3	2	1	-	1	-	-	1	1	3	2	1	3	1

## Course Code &amp; Name : C208 - CS8382 &amp; Digital Systems Laboratory

C208.1	Apply Boolean simplification techniques to construct combinational logic circuits
C208.2	Build combinational logic circuits to perform arithmetic operations
C208.3	Construct sequential logic circuits to perform Count & Shift operations
C208.4	Develop HDL Code to Model Combinational & Sequential logics
C208.5	Develop a simple digital system

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C208.1	3	2	1	-	-	-	-	1	1	3	-	1	2	-
C208.2	3	2	1	-	-	-	-	1	1	3	1	1	2	-
C208.3	3	2	1	-	-	-	-	1	1	3	1	1	2	-
C208.4	3	2	1	-	-	1	-	1	1	3	1	1	2	-
C208.5	3	2	1	-	-	1	-	1	1	3	1	1	2	-
C208	3	2	1	-	-	1	-	1	1	3	1	1	2	-

## Course Code &amp; Name : C209 - HS8381 &amp; Interpersonal Skills / Listening &amp; Speaking

C209.1	Listen and respond appropriately.
C209.2	Speak clearly, confidently, comprehensively, and communicate with one or many listeners using appropriate communicative strategies.
C209.3	Participate in group discussions
C209.4	Make effective presentations
C209.5	Participate confidently and appropriately in conversations both formal and informal

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C209.1	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C209.2	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C209.3	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C209.4	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C209.5	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C209	-	-	-	-	-	-	-	-	2	3	-	3	-	-



## Course Code &amp; Name : C211 - CS8491 &amp; Computer Architecture

C211.1	Explain the computer organization components, instructions and addressing modes
C211.2	Compute different arithmetic operations like addition, subtraction and multiplication
C211.3	Discuss the basic of MIPS implementation and pipelining
C211.4	Explain the concept of parallelism and multi-core processor
C211.5	Generalize the memory technologies and I/O systems

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C211.1	2	1	-	-	-	-	-	1	1	-	-	1	2	-
C211.2	3	2	1	-	-	-	-	1	1	1	-	1	2	-
C211.3	2	1	-	-	-	-	-	1	1	1	-	1	2	-
C211.4	2	1	-	-	-	-	-	1	1	1	-	1	2	-
C211.5	2	1	-	-	-	-	-	1	1	1	-	1	2	-
C211	2	1	1	-	-	-	-	1	1	1	-	1	2	-



## Course Code &amp; Name : C212 – CS8492 &amp; Database Management Systems

C212.1	Summarize database design for real time applications
C212.2	Apply ER diagram and normalization techniques for database applications
C212.3	Apply concurrency control & recovery mechanism for database problems
C212.4	Compare and control various indexing strategies in different database systems
C212.5	Classify advanced database design

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C212.1	2	1	-	-	-	-	-	1	1	-	-	1	2	1
C212.2	3	2	1	-	-	-	-	1	1	1	-	1	2	1
C212.3	3	2	1	-	-	-	-	1	1	1	-	1	2	1
C212.4	3	3	2	1	-	-	-	1	1	1	-	1	2	1
C212.5	3	2	1	-	-	-	-	1	1	1	-	1	2	1
C212	3	2	1	1	-	-	-	1	1	1	-	1	2	1

Course Code & Name : C213 – CS8451 & Design and Analysis of Algorithms

C213.1	Interpret the fundamental needs of algorithms in problem solving
C213.2	Classify the different algorithm design techniques for problem solving
C213.3	Develop algorithms for various computing problems
C213.4	Analyze the time and space complexity of various algorithms
C213.5	Identify the limitations of algorithms in problem solving

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C213.1	2	1	-	-	-	-	-	1	1	-	-	3	3	1
C213.2	3	2	1	-	-	-	-	1	1	1	-	1	3	1
C213.3	3	2	1	-	-	-	-	1	1	1	-	3	3	1
C213.4	3	3	2	1	-	-	-	1	1	1	-	3	3	1
C213.5	3	2	1	-	-	-	-	1	1	1	-	1	3	1
C213	3	2	1	1	-	-	-	1	1	1	-	2	3	1

## Course Code &amp; Name : C214 – CS8493 &amp; Operating Systems

C214.1	Explain the basic concepts and functions of Operating Systems
C214.2	Explain various threading models, process synchronization and deadlocks
C214.3	Analyze the performance of various CPU scheduling algorithms
C214.4	Discuss various memory management schemes
C214.5	Explain I/O management and file systems
C214.6	Explain administrative tasks on Linux servers and distinguish iOS and Android OS

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C214.1	2	1	-	-	-	-	-	-	-	-	-	1	3	1
C214.2	2	1	-	-	-	-	-	1	1	-	-	-	3	1
C214.3	3	3	2	1	-	-	-	1	1	-	-	-	3	1
C214.4	2	1	-	-	-	-	-	1	1	-	-	1	3	1
C214.5	2	1	-	-	-	-	-	1	1	-	-	1	3	1
C214.6	2	1	-	-	-	-	-	1	1	-	-	1	3	1
C214	2	1	1	1	-	-	-	1	1	-	-	1	3	1

## Course Code &amp; Name : C215 – CS8494 &amp; Software Engineering

C215.1	Explain the software process and agile development
C215.2	Illustrate the software requirements and analysis
C215.3	Apply the software design procedure
C215.4	Compare and contrast various the various software testing and implementation techniques
C215.5	Estimate the software project cost and effort

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C215.1	2	1	-	-	-	-	-	-	-	-	-	-	1	-
C215.2	3	2	1	-	-	-	-	1	1	1	-	1	1	-
C215.3	3	2	1	-	-	-	-	1	1	1	-	1	1	-
C215.4	3	3	2	1	-	-	-	1	1	1	-	1	1	-
C215.5	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C215	3	2	1	1	-	-	-	1	1	1	-	1	1	-

## Course Code &amp; Name : C216 – CS8481 &amp; Database Management Systems Laboratory

C216.1	Describe the various data base commands for the data definition, data manipulation and transaction control statements
C216.2	Discuss the data base queries by using Simple queries, Nested queries, Sub queries, Joins, Views, Sequences, Synonyms and cursors
C216.3	Use the procedures, functions, triggers and exception handling of the database
C216.4	Analyze the database design by using ER modeling and normalization concepts
C216.5	Develop solutions using database concepts for real time requirements

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C216.1	2	1	-	-	-	-	-	-	-	-	-	-	1	-
C216.2	2	1	-	-	-	-	-	1	1	3	-	1	2	-
C216.3	3	2	1	-	-	-	-	1	1	3	-	1	2	-
C216.4	3	3	2	1	-	-	-	1	1	3	1	1	2	-
C216.5	3	2	1	-	-	-	-	1	1	3	3	-	2	-
C216	3	2	1	1	-	-	-	1	1	3	1	1	2	-

## Course Code &amp; Name : C217 – CS8461 &amp; Operating Systems Laboratory

C217.1	Use various Unix commands and develop simple shell programming
C217.2	Develop program for CPU scheduling problems
C217.3	Develop programs for Semaphores, deadlock avoidance and detection algorithms
C217.4	Operate on processes, Threads and implement IPS
C217.5	Analysis various memory management and file management techniques

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C217.1	3	2	1	-	-	-	-	1	1	3	-	-	2	1
C217.2	3	2	1	-	-	-	-	1	1	3	-	1	2	1
C217.3	3	2	1	-	-	-	-	1	1	3	-	1	2	1
C217.4	3	2	1		-	-	-	1	1	3	-	1	2	1
C217.5	3	3	2	1	-	-	-	1	1	3	1	-	2	1
C217	3	2	1	1	-	-	-	1	1	3	1	1	2	1

## Course Code &amp; Name : C218 – HS8461 &amp; Advanced Reading and Writing

C218.1	Write different types of essays
C218.2	Write winning job applications
C218.3	Read and evaluate texts critically
C218.4	Display critical thinking in various professional contexts
C218.5	Read technical texts and write area- specific texts effortlessly

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C218.1	-	-	-	-	-	-	-	2	2	3	-	3	-	-
C218.2	-	-	-	-	-	-	-	2	2	3	-	3	-	-
C218.3	-	-	-	-	-	-	-	2	2	3	-	3	-	-
C218.4	-	-	-	-	-	-	-	2	2	3	-	3	-	-
C218.5	-	-	-	-	-	-	-	2	2	3	-	3	-	-
C218	-	-	-	-	-	-	-	2	2	3	-	3	-	-





Course Code &amp; Name : C302 – CS8591 &amp; Computer Networks

C302.1	Explain about the protocol layering and physical level communication.
C302.2	Illustrate the Data link layer and Media Access Control Protocols
C302.3	Illustrate various types of routing techniques
C302.4	Describe the mechanisms involved in Transport Layer.
C302.5	Analyze the different application layer protocols

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C302.1	2	1		-	-	-	-	1	1	-	-	-	2	-
C302.2	2	1		-	-	-	-	1	1	1	-	-	2	-
C302.3	2	1		-	-	-	-	1	1	1	-	-	2	-
C302.4	2	1		-	-	-	-	1	1	1	-	-	2	-
C302.5	3	3	2	1	-	-	-	1	1	1	-	-	2	-
C302	3	2	1	1	-	-	-	1	1	1	-	-	2	-

## Course Code &amp; Name : C303 – EC8691 &amp; Microprocessor and Microcontroller

C303.1	Explain about the architecture of microprocessor and microcontroller
C303.2	Develop the programs on 8086 microprocessor for simple functions
C303.3	Illustrate the Bus structure and communication of microprocessor
C303.4	Illustrate the design aspects of I/O and memory interfacing circuits
C303.5	Develop a simple microcontroller based systems

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C303.1	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C303.2	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C303.3	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C303.4	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C303.5	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C303	2	1	2	-	-	-	-	1	1	1	-	-	1	-

Course Code &amp; Name : C304 – CS8501 &amp; Theory of Computation

C304.1	Construct finite automata and regular expression for any pattern
C304.2	Develop context free grammar and push down automaton model for the given language
C304.3	Translate the context free grammar into its various normal forms
C304.4	Solve simple computational problems by using Turing machine
C304.5	Explain decidability or undecidability of various problems

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C304.1	3	2	1	-	-	-	-	1	1	-	-	-	3	-
C304.2	3	2	1	-	-	-	-	1	1	1	-	-	3	-
C304.3	3	2	1	-	-	-	-	1	1	-	-	-	3	-
C304.4	3	2	1	-	-	-	-	1	1	-	-	-	3	-
C304.5	2	1	-	-	-	-	-	1	1	1	-	-	2	-
C304	3	2	1	-	-	-	-	1	1	1	-	-	3	-

Course Code & Name : C305 – CS8592 & Object Oriented Analysis and Design

C305.1	Explain OOAD concepts and various UML diagrams
C305.2	Select an appropriate design pattern
C305.3	Illustrate about domain models and conceptual classes
C305.4	Compare and contrast various testing techniques
C305.5	Construct projects using UML diagrams

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C305.1	2	1		-	-	-	-	1	1	-	-	-	1	1
C305.2	3	2	1	-	-	-	-	1	1	1	-	-	1	1
C305.3	3	2	1	-	-	-	-	1	1	1	-	-	1	1
C305.4	3	3	2	1	-	-	-	1	1	1	-	-	1	1
C305.5	3	2	1		-	-	-	1	1	1	2	-	1	1
C305	3	2	1	1	-	-	-	1	1	1	2	-	1	1

Course Code & Name : C306 – Open Elective I OEC552 / Soft Computing

C306.1	Apply various soft computing concepts for practical applications.
C306.2	Choose and design suitable neural networks for real time problems
C306.3	Use fuzzy rules and reasoning to develop decision making and expert system
C306.4	Explain the importance of optimization techniques and genetic programming
C306.5	Review the various hybrid soft computing techniques and apply in real time problems

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C306.1	3	2	1	-	-	-	-	1	1	1	-	-	2	2
C306.2	3	2	1	-	1	-	-	1	1	1	-	-	2	2
C306.3	3	2	1	-	1	-	-	1	1	1	-	-	2	2
C306.4	2	1	-	-	1	-	-	1	1	1	-	-	2	2
C306.5	3	2	1	-	1	-	-	1	1	1	-	-	2	2
C306	3	2	1	-	1	-	-	1	1	1	-	-	2	2

## Course Code &amp; Name : C307 – EC8681 &amp; Microprocessor and Microcontroller Laboratory

C307.1	Develop ALP for fixed and Floating Point and Arithmetic operations using 8086 microprocessor.
C307.2	Make use of different I/O interfacing with 8086 microprocessor
C307.3	Construct different waveforms using 8086 microprocessor
C307.4	Model serial and parallel interfacing of 8086 microprocessor
C307.5	Develop assembly language programs for various applications using 8051 microcontroller

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C307.1	3	2	1	-	-	-	-	1	1	1	-	-	2	-
C307.2	3	2	1	-	-	-	-	1	1	1	-	-	2	-
C307.3	3	2	1	-	-	-	-	1	1	1	-	-	2	-
C307.4	3	2	1	-	-	-	-	1	1	1	-	-	2	-
C307.5	3	2	1	-	-	-	-	1	1	1	-	-	2	-
C307	3	2	1	-	-	-	-	1	1	1	-	-	2	-

Course Code & Name : C308 – CS8582 & Object Oriented Analysis and Design Laboratory

C308.1	Outline the problem statement for a given problem
C308.2	Construct USE CASE model to identify the classes and functionality of the system
C308.3	Show the objects interaction for all the system functionality
C308.4	Develop code from system design
C308.5	Examine the developed code using testing strategies

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C308.1	2	1		-	-	-	-	1	1	3	-	-	2	1
C308.2	3	2	1	-	1	-	-	1	1	3	-	2	2	1
C308.3	3	2	1	-	1	-	-	1	1	3	-	2	2	1
C308.4	3	2	1		1	-	-	1	1	3	-	2	2	1
C308.5	3	3	2	1	1	-	-	1	1	3	-	2	2	1
C308	3	2	1	1	1	-	-	1	1	3	-	2	2	1

## Course Code &amp; Name : C309 – CS8581 &amp; Networks Laboratory

C309.1	Demonstrate the Network Commands.
C309.2	Develop simple socket programming .
C309.3	Develop the code for Data link layer protocol simulation
C309.4	Examine with Congestion control algorithm using Network simulator.
C309.5	Illustrate the performance of various network protocols

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C309.1	3	2	1	-	-	-	-	1	1	3	-	-	2	1
C309.2	3	2	1	-	1	-	-	1	1	3	1	-	2	1
C309.3	3	2	1	-	1	-	-	1	1	3	1	-	2	1
C309.4	3	3	2	1	1	-	-	1	1	3	1	-	2	1
C309.5	3	2	1	-	-	-	-	1	1	3	1	-	2	1
C309	3	2	1	1	1	-	-	1	1	3	1	-	2	1



## YEAR III / SEMESTER VI

Course Code &amp; Name : C310 – CS8651 &amp; Internet Programming

C310.1	Develop a basic website using HTML and Cascading Style Sheets
C310.2	Explain Javascript and JSON for Client side programming.
C310.3	Explain servlets with database connectivity for server side programming.
C310.4	Build a simple web page in PHP with XML data format
C310.5	Explain web services and client presentation using AJAX

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C310.1	3	2	1	-	-	-	-	1	1	-	-	1	1	-
C310.2	2	1	-	-	-	-	-	1	1	1	-	1	1	-
C310.3	2	1	-	-	-	-	-	1	1	-	-	1	1	-
C310.4	3	2	1	-	-	-	-	1	1	1	1	1	1	-
C310.5	2	1	-	-	-	-	-	1	1	-	-	1	1	-
C310	2	1	1	-	-	-	-	1	1	1	1	1	1	-

## Course Code &amp; Name : C311 – CS8691 &amp; Artificial Intelligence

C311.1	Determine and formulate a given AI problem that an Intelligent System must solve
C311.2	Describe the role of heuristics and solve various types of search problems
C311.3	Apply the various knowledge representations and associated algorithms
C311.4	Explain the complications of planning and intelligent agent architecture
C311.5	Make use of fundamental concepts of machine learning and its related algorithms in the applications of NLP and agent design.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C311.1	2	1	-	-	-	-	-	1	1	1	-	-	3	-
C311.2	2	1	-	-	-	-	-	1	1	1	-	-	3	-
C311.3	3	2	1	-	-	-	-	1	1	-	-	-	3	-
C311.4	2	1	-	-	-	-	-	1	1	1	-	-	3	-
C311.5	3	2	1	-	-	-	-	1	1	-	-	-	3	-
C311	2	1	1	-	-	-	-	1	1	1	-	-	3	-

## Course Code &amp; Name : C312 – CS8601 &amp; Mobile Computing

C312.1	Explain the basics of mobile Computing
C312.2	Describe the functionality of Mobile IP and Transport Layer
C312.3	Classify different types of mobile telecommunication systems
C312.4	Illustrate the Adhoc networks concepts and its routing protocols
C312.5	Make use of mobile operating systems in developing mobile applications

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C312.1	2	1	-	-	-	-	-	1	1	1	-	-	1	3
C312.2	2	1	-	-	-	-	-	1	1	1	-	-	1	3
C312.3	2	1	-	-	-	-	-	1	1	1	-	-	1	3
C312.4	3	2	1	-	1	-	-	1	1	-	-	-	1	3
C312.5	3	2	1	-	1	-	-	1	1	-	-	1	1	3
C312	2	1	1	-	1	-	-	1	1	1	-	1	1	3

## Course Code &amp; Name : C313 – CS8602 &amp; Compiler Design

C313.1	Explain the structure of the compiler and tokenization in lexical analysis
C313.2	Transfer the given tokens into Parse tree in syntax analyzer
C313.3	Construct the intermediate representation considering the type systems
C313.4	Discuss the storage allocation and organization for code generation
C313.5	Apply code optimization techniques on the generated machine code

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C313.1	2	1	-	-	-	-	-	1	1	1	-	-	1	1
C313.2	3	2	1	-	-	-	-	1	1	-	-	-	1	1
C313.3	3	2	1	-	-	-	-	1	1	-	-	-	1	1
C313.4	2	1	-	-	-	-	-	1	1	1	-	-	1	1
C313.5	3	2	1	-	-	-	-	1	1	-	-	-	1	1
C313	3	2	1	-	-	-	-	1	1	1	-	-	1	1

## Course Code &amp; Name : C314 – CS8603 &amp; Distributed Systems

C 314 .1	Explain the foundations and issues of distributed systems
C314 .2	Explain the various synchronization issues and global state for distributed systems
C314 .3	Explain 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	Illustrate the features of peer-to-peer and distributed shared memory systems

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C 314 .1	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C314 .2	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C314 .3	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C314 .4	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C314 .5	3	2	1	-	-	-	-	1	1	-	-	-	1	-
C 314	2	1	1	-	-	-	-	1	1	1	-	-	1	-

**COURSE CODE / SUBJECT CODE & NAME: CE315 / IT8076 / Software Testing**

C 315 .1	Outline the software testing criteria for developing test cases
C315.2	Build the test cases for software development
C315 .3	Explain the various level of testing
C315 .4	Discuss about the test metrics, measurements and Management process
C315 .5	Make use of the latest test tool for functional and performance testing

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	<b>K3</b>	<b>K4</b>	<b>K5</b>	<b>K6</b>										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C 315 .1	2	1	-	-	-	-	-	1	1	1	-	-	-	1
C315.2	3	2	1	-	-	-	-	1	1	-	-	-	-	1
C315 .3	2	1	-	-	-	-	-	1	1	1	-	-	-	1
C315 .4	2	1	-	-	-	-	-	1	1	1	-	-	-	1
C315 .5	3	2	1	-	-	-	-	1	1	-	-	-	-	1
C 315	2	1	1	-	-	-	-	1	1	1	-	-	-	1

## Course Code &amp; Name :C316 – CS8661 &amp; Internet Programming Laboratory

C316.1	Develop web pages using HTML/XML and style sheets
C316.2	Analyze user interfaces using Java Script
C316.3	Compare and contrast dynamic web pages using server side scripting
C316.4	Develop a Client Server application using JSP.
C316.5	Build the applications using Web services.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C316.1	3	2	1	-	2	-	-	2	2	3	2	2	1	2
C316.2	3	3	2	1	2	-	-	2	2	3	-	2	1	2
C316.3	3	3	2	1	2	-	-	2	2	3	-	2	1	2
C316.4	3	2	1		2	-	-	2	2	3	2	2	1	2
C316.5	3	2	1		2	-	-	2	2	3	3	2	1	2
C316	3	2	1	1	2	-	-	2	2	3	2	2	1	2

## Course Code &amp; Name : C317 – Mobile Application Development Laboratory

C317.1	Develop mobile application for given operating system and user access specification using GUI, Layouts.
C317.2	Given the OS specification develop mobile application with event listeners.
C317.3	Given the operating system and database specification develop a mobile application with appropriate database schemes.
C317.4	Develop mobile application using RSS Feed, internal/external storage, SMS, multithreading and GPS.
C317.5	Given the requirement specification select and use appropriate techniques to develop mobile app.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C317.1	3	2	1	-	3	-	-	2	2	3	3	1	2	3
C317.2	3	2	1	-	3	-	-	2	2	3	-	1	2	3
C317.3	3	2	1	-	3	-	-	2	2	3	-	1	2	3
C317.4	3	2	1	-	3	-	-	2	2	3	3	1	2	3
C317.5	3	3	2	1	3	-	-	2	2	3	-	1	2	3
C317	3	2	1	1	3	-	-	2	2	3	3	1	2	3



## Course Code &amp; Name : C318 – CS8611 Mini Project

C318.1	Identify the problem by applying acquired knowledge
C318.2	Analyze and categorize executable project modules after considering risks
C318.3	Choose efficient tools for designing project modules
C318.4	Combine all the modules through effective team work after efficient testing
C318.5	Elaborate the completed task and compile the project report

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	<b>K3</b>	<b>K4</b>	<b>K5</b>	<b>K6</b>										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C318.1	3	2	1	-	3	2	2	3	3	3	3	3	3	2
C318.2	3	3	2	1	3	2	2	3	3	3	3	3	3	2
C318.3	3	2	1	-	3	2	2	3	3	3	3	3	3	2
C318.4	3	3	2	1	3	2	2	3	3	3	3	3	3	2
C318.5	3	3	2	1	3	2	2	3	3	3	3	3	3	2
C318	3	3	2	1	3	2	2	3	3	3	3	3	3	2

Course Code & Name : C319 – HS8581 Professional Communication

C319.1	Make effective presentations.
C319.2	Participate confidently in Group Discussions.
C319.3	Attend job interviews and be successful in them.
C319.4	Develop adequate Soft Skills required for the workplace
C319.5	Use technology to communicate effectively in various settings and contexts for enhanced communicative skills.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C319.1	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C319.2	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C319.3	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C319.4	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C319.5	-	-	-	-	-	-	-	-	2	3	-	3	-	-
C319	-	-	-	-	-	-	-	-	2	3	-	3	-	-

## YEAR – IV / SEMESTER – VII

Course Code &amp; Name : C401 – MG8591 &amp; Principles of Management

C401.1	Demonstrate the basics of management and its types, skills, management roles; Differentiate types of business organizations and to examine organization culture and current trends in business
C401.2	Outline the nature and purpose of planning, Classify the types of planning, develop objectives, policies, planning premises and decision-making process.
C401.3	Compare the different organization structures – formal vs informal organization, line vs staff authority, centralization vs decentralization; design job attributes such as HR management, HR planning, Recruitment, selection, training, career planning etc.
C401.4	Criticize individual and group behavior, compare and explain the types and theories of leadership and motivation; Explain the communication process, examine the barriers in communication and propose an effective communication method
C401.5	Analyze and design various control process like budgetary control, non-budgetary control, use of IT in management control, direct control and preventive control.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C401.1	2	1	-	-	-	-	-	-	-	-	-	-	1	-
C401.2	2	1	-	-	-	-	-	-	-	-	-	-	1	-
C401.3	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C401.4	3	3	2	1	-	-	-	1	1	1	-	-	1	-
C401.5	3	3	2	1	-	-	-	1	1	1	-	-	1	-
C401	2	2	1	1	-	-	-	1	1	1	-	-	1	-

## Course Code &amp; Name : C402 – CS8792 &amp; Cryptography and Network Security

C402.1	Explain Cryptography Theories, Algorithms and Systems
C402.2	Describe the symmetric key approaches and discuss the strength of the various techniques
C402.3	Apply the mathematical concept of asymmetric key cryptography in public key cryptography
C402.4	Apply various message authentication functions and secure algorithms.
C402.5	Illustrate different levels of security through various applications and develop protection mechanisms in order to secure computer networks.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C402.1	2	1	-	-	-	-	-	1	1	1	-	-	3	-
C402.2	2	1	-	-	-	-	-	1	1	1	-	-	3	-
C402.3	3	2	1	-	-	-	-	1	1	1	-	-	3	-
C402.4	3	2	1	-	-	-	-	1	1	1	-	-	3	-
C402.5	3	2	1	-	-	-	-	1	1	1	-	-	3	-
C402	3	2	1	-	-	-	-	1	1	1	-	-	3	-

## Course Code &amp; Name : C403 – CS8791 &amp; Cloud Computing

C403.1	Discuss the concept of cloud computing.
C403.2	Explain the evolution of cloud from the existing technologies.
C403.3	Describe the various issues in cloud computing.
C403.4	Discuss the cloud resource management and its security
C403.5	Explain the emergence of cloud as the next generation computing paradigm.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C403.1	2	1	-	-	-	-	-	-	-	-	-	-	2	-
C403.2	2	1	-	-	-	-	-	1	1	1	-	-	2	-
C403.3	2	1	-	-	-	-	-	1	1	1	-	-	2	-
C403.4	2	1	-	-	-	-	-	1	1	1	-	-	2	-
C403.5	2	1	-	-	-	-	-	1	1	1	-	-	2	-
C403	2	1	-	-	-	-	-	1	1	1	-	-	2	-

## Course Code &amp; Name : C404 - Open Elective II OME752 / Supply Chain Management

C404.1	Explain the role of logistics and supply chain strategies
C404.2	Discuss the distribution network design and framework
C404.3	Explain the design options and Routing and scheduling in transportation
C404.4	Analyze sourcing planning and design collaboration
C404.5	Analyze Customer Relationship Management in information technology

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C404.1	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C404.2	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C404.3	2	1	-	-	-	-	-	1	1	-	-	-	1	-
C404.4	3	3	2	1	-	-	-	1	1	1	-	-	1	-
C404.5	3	3	2	1	-	-	-	1	1	1	-	-	1	-
C404	2	2	2	1	-	-	-	1	1	1	-	-	1	-

## COURSE CODE / SUBJECT CODE &amp; NAME: CE405 / GE8077 / Total Quality Management

CE405.1	Explain the Dimensions, Concepts and Barriers of TQM.
CE405.2	Summarize TQM Principles, quality statements and continuous process improvement.
CE405.3	Discuss the Tools utilization for Quality improvement.
CE405.4	Explain the various types of Techniques used to measure Quality.
CE405.5	Apply various Quality Systems and Auditing on implementation of TQM.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CE405.1	1	-	-	-	-	1	-	2	2	2	3	-	1	-
CE405.2	1	-	-	-	-	1	-	2	2	2	3	2	1	-
CE405.3	1	-	-	-	-	1	-	2	2	2	3	2	1	-
CE405.4	1	-	-	-	-	1	-	2	2	2	3	-	1	-
CE405.5	1	-	-	-	-	1	-	2	2	2	3	2	1	-
CE405	1	-	-	-	-	1	-	2	2	2	3	2	1	-

**COURSE CODE / SUBJECT CODE & NAME: CE406 / CS8079 / Human Computer Interaction**

CE406.1	Explain the various computer devices and HCI models.
CE406.2	Illustrate the interactive design basics and HCI software process
CE406.3	Identify the stakeholders' requirements and choose the appropriate models.
CE406.4	Develop mobile HCI using mobile elements and tools by considering mobile eco system.
CE406.5	Develop meaningful user interface.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CE406.1	2	1	-	-	-	-	-	1	1	-	-	-	1	-
CE406.2	2	1	-	-	-	-	-	1	1	-	-	-	1	-
CE406.3	3	2	1	-	-	-	-	1	1	1	-	-	1	-
CE406.4	3	2	1	-	-	-	-	1	1	1	-	-	1	-
CE406.5	3	2	1	-	-	-	-	1	1	1	-	-	1	-
CE406	3	2	1	-	-	-	-	1	1	1	-	-	1	-



## Course Code &amp; Name : C407 – CS8711 &amp; Cloud Computing Laboratory

C407.1	Show various virtualization tools such as Virtual Box, VMware workstation.
C407.2	Demonstrate the Design and deployment of web application in a PaaS environment.
C407.3	Produce the simulation of a cloud environment to implement new schedulers.
C407.4	Show the Installation and use a generic cloud environment that can be used as a private cloud.
C407.5	Manipulate large data sets in a parallel environment

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C407.1	3	2	1	-	2	-	-	1	1	3	-	2	2	2
C407.2	3	2	1	-	2	-	-	1	1	3	2	2	2	2
C407.3	3	2	1	-	2	-	-	1	1	3	3	2	2	2
C407.4	3	2	1	-	2	-	-	1	1	3	2	2	2	2
C407.5	3	2	1	-	2	-	-	1	1	3	3	2	2	2
C407	3	2	1	-	2	-	-	1	1	3	3	2	2	2

## Course Code &amp; Name : C408 - IT8761 &amp; Security Laboratory

C408.1	Apply the different substitution and transposition techniques
C408.2	Develop the Symmetric key Cryptographic technique using DES and AES algorithm
C408.3	Develop the asymmetric key cryptographic technique using RSA algorithm
C408.4	Demonstrate the Diffie-Hellman key exchange algorithm and message digest process
C408.5	Show the Digital signature for secure data transmission and Demonstrate vulnerability assessment tool and network security tool.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C408.1	3	2	1	-	-	-	-	1	1	3	-	2	2	2
C408.2	3	2	1	-	-	-	-	1	1	3	2	2	2	2
C408.3	3	2	1	-	-	-	-	1	1	3	2	2	2	2
C408.4	3	2	1	-	-	-	-	1	1	3	2	2	2	2
C408.5	3	2	1	-	-	-	-	1	1	3	2	2	2	2
C408	3	2	1	-	-	-	-	1	1	3	2	2	2	2

## IV YEAR / VIII SEMESTER

## COURSE CODE / SUBJECT CODE &amp; NAME: CE409 / GE8076&amp; Professional Ethics in Engineering

CE409.1	Outline an awareness of Human values, to appreciate the rights of others and stress management.
CE409.2	Illustrate the moral issues and models of professional roles
CE409.3	Discuss the Ethical issues related to engineering and realize the code of ethics in the society.
CE409.4	Describe the responsibilities and rights in the society along with assessment of safety and risk.
CE409.5	Apply the social responsibility on multinational corporations related to engineering

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CE409.1	-	-	-	-	-	2	2	3	-	-	-	1	-	-
CE409.2	-	-	-	-	-	2	2	3	1	1	-	1	-	-
CE409.3	-	-	-	-	-	2	2	3	1	1	-	1	-	1
CE409.4	-	-	-	-	-	2	2	3	1	1	-	1	-	-
CE409.5	-	-	-	-	-	2	2	3	1	1	-	1	-	1
CE409	-	-	-	-	-	2	2	3	1	1	-	1	-	1

**COURSE CODE / SUBJECT CODE & NAME: CE410 / CS8080 & Information Retrieval**

CE410.1	Explain the basic concept of information retrieval
CE410.2	Classify the modeling and retrieval evaluation
CE410.3	Apply appropriate method of classification or clustering
CE410.4	Apply innovative features to implement web search engine
CE410.5	Explain the various architecture to implement a recommender system

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	<b>K3</b>	<b>K4</b>	<b>K5</b>	<b>K6</b>										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CE410.1	2	1	-	-	-	-	-	1	1	1	-	-	1	-
CE410.2	3	2	1	-	-	-	-	1	1	-	-	-	1	-
CE410.3	3	2	1	-	-	-	-	1	1	-	-	-	1	-
CE410.4	3	2	1	-	-	-	-	1	1		-	-	1	-
CE410.5	2	1	-	-	-	-	-	1	1	1	-	-	1	-
CE410	3	2	1	-	-	-	-	1	1	1	-	-	1	-

**COURSE CODE / SUBJECT CODE & NAME: C411 / CS8811 & PROJECT WORK**

C411.1	Identify a domain and problem by applying required domain knowledge.
C411.2	Analyze and categorize executable project modules including project constraints.
C411.3	Choose efficient tools and methods for designing and implementing project modules.
C411.4	Combine all the modules through effective integration and testing.
C411.5	Elaborate the completed task and compile the project report.

K Level	Apply (PO1- K3), Analyze (PO2 – K4), Evaluate (PO3 – K5), Create (PO4 – KK6)													
K Level	K3	K4	K5	K6										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C411.1	3	2	1	-	3	2	2	3	3	3	3	3	3	2
C411.2	3	3	2	1	3	2	2	3	3	3	3	3	3	2
C411.3	3	2	1	-	3	2	2	3	3	3	3	3	3	2
C411.4	3	3	2	1	3	2	2	3	3	3	3	3	3	2
C411.5	3	3	2	1	3	2	2	3	3	3	3	3	3	2
C411	3	3	2	1	3	2	2	3	3	3	3	3	3	2

