R-16

CURRICULUM ESSENTIALS

Handbook on Outcome Based Education

INFORMATION TECHNOLOGY

NARULA INSTITUTE OF TECHNOLOGY

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Institute Mission

- To establish continuously improving academic ambience in the Institute in order to prepare the students with beyond curriculum knowledge, creativity, innovation, problem solving abilities, teamwork, communication skills etc. for their holistic development.
- To collaborate with Institutes of higher education, Professional Societies, R&D and Industrial organisations for continuous improvement of academic, research environment in the Institute and to build a strong Industry-Institute interface.
- To promote and nurture entrepreneurial and innovative quality of the students providing proper education, training and supportive facilities so that future entrepreneurs emerge with flying colors.
- To strengthen quality and knowledge-base of faculty through faculty development programmes for continuous upgradation to remain in tune with dynamically changing technology.
- To become a responsible contributor in the socio-economic development of the society through excellence in education and research.

Institute Vision

To make the Institute excellent in technological education and research by imparting equitable, inclusive, ethical, flexible and multidisciplinary knowledge to budding technologists to serve the society.

Institute Quality Policy

- Adoption of appropriate standards and practices for good governance, to bring in transparency of all operations and thereby improve credibility at all levels.
- Industry-ready professionals to be developed through interactive teaching learning process involving state of the art class rooms, laboratories, libraries, corporate exposure and innovative project work.
- Higher studies/research for faculty & staff to be encouraged for up gradation of knowledge through participation in Quality Improvement Programs, Seminars, Workshops, Webinars etc.
- Laboratory facilities would be upgraded in emerging areas to promote R&D activities including participation in Govt. and Industry funded projects.
- Industrial consultancy to be carried out in an effective manner for developing sense of accomplishment.
- Interaction with Professional Societies would be encouraged for the professional growth and development of the students, faculties and staff for mutual benefit.
- NBA Accreditation for all AICTE approved programs to be obtained at the earliest and maintained on a long-term basis.
- The innovative and entrepreneurial skills of the students to be nurtured through Innovation & Incubation center, finally culminating in start-ups.

Department Mission

B.Tech. in Information Technology

M1: To address multi-various aspects of academic growth in Information Technology

M2: To disseminate advanced concepts for pursuing research and development oriented activity in Information and Communication Technology

M3: To guide the students to become successful IT Professionals with relevant skills

M4: To motivate the students to explore their capabilities for utilizing there intellectual potential

Department Vision

B.Tech. in Information Technology

To provide an appropriate ambience for creating IT professionals of international standards who would be able to cope with situational challenges in the emerging field of information technology with a new view to serving IT society in particular and human society in general.

Program Educational Objects (PEOs)

B.Tech. in Information Technology

- **PEO1.** The graduates of the program will be able to analyze, design and invent computing solutions for multidisciplinary engineering and scientific challenges.
- **PEO2:** The graduates of the program will be able to pursue a successful career in industry, academia, research or public sector by the acquired skill and knowledge as a competent professional.
- **PEO3:** The graduates of the program will be able to exhibit an exceptional and active participation and involvement in Research and Development leading to innovations and optimized solutions.
- **PEO4:** The graduates of the program will be able to engage in lifelong learning for professional advancement and effective communication of the technical information and Perform effectively in multi-disciplinary and multi-cultural environments with valued professionalism and ethical practices within organization and society at national and international level.

Program outcomes (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem Analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability**: Understand the impact of the professional engineering solutionsin societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. ***Communication:*** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of theengineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

B.Tech. in Information Technology

PSO1. Design, develop and maintain state-of-the-art hardware and software system and applications.

PSO2. Classify, analyze and extend different aspects of Information Technology for solving real life problems.

PSO3. Identify and design solutions for futuristic problems through the proficiency acquired.

Curriculum Structure

1ST YEAR, 1ST SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	BS	M101	MATHEMATICS-I	3	1	0	4	4
2	BS	PH101	PHYSICS-I	3	1	0	4	4
3	ES	EC101	BASIC ELECTRONICS ENGINEERING	3	1	0	4	4
4	ES	ME101	ENGINEERING MECHANICS	3	1	0	4	4
5	HS	HU101	COMMUNICATIVE ENGLISH	2	0	0	2	2
Total no. of Theory:								**18**
PRACTICAL								
6	BS	PH191	PHYSICS-I LAB	0	0	3	3	2
7	ES	EC191	BASIC ELECTRONICS ENGINEERING LAB	0	0	3	3	2
8	ES	ME192	WORKSHOP PRACTICE	0	0	3	3	2
9	HS	HU191	LANGUAGE LAB & SEMINAR PRESENTATION	0	0	3	3	1
Total no. of Practical:								**7**
SESSIONAL								
10	HS	XC181	EXTRA CURRICULAR ACTIVITY (NSS/NCC)	0	0	2	2	1
TOTAL								**26**

1ST YEAR, 2ND SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact Hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	BS	M201	MATHEMATICS-II	3	1	0	4	4
2	BS	CH201	CHEMISTRY	3	1	0	4	4
3	ES	EE201	BASIC ELECTRICAL ENGINEERING	3	1	0	4	4
4	ES	CS201	COMPUTER FUNDAMENTALS AND PRINCIPLE OF COMPUTER PROGRAMMING	3	1	0	4	4
5	ES	ME201	ENGINEERING THERMODYNAMICS AND FLUID MECHANICS	3	1	0	4	4
Total no. of Theory:								**20**
PRACTICAL								
6	BS	CH291	CHEMISTRY LAB	0	0	3	3	2
7	ES	CS291	COMPUTER FUNDAMENTALS AND PRINCIPLE OF COMPUTER PROGRAMMING LAB	0	0	3	3	2
8	ES	EE291	BASIC ELECTRICAL ENGINEERING LAB	0	0	3	3	2
9	ES	ME291	ENGINEERING DRAWING AND GRAPHICS	0	0	3	3	2
Total no. of Practical:								**8**
SESSIONAL								
10	MC	MC281	SOFT SKILL DEVELOPMENT	0	0	3	3	2 units
TOTAL								**28**

2ND YEAR, 3RD SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	BS	M(IT)301	MATHEMATICS- III	3	1	0	4	4
2	BS	PH(IT)301	PHYSICS- II	3	0	0	3	3
3	BS	M(IT)302	NUMERICAL METHODS AND STATISTICS	3	0	0	3	3
4	ES	EC(IT)303	ANALOG AND DIGITAL ELECTRONICS	3	0	0	3	3
5	PC	IT301	DATA STRUCTURE & ALGORITHM	3	1	0	4	4
Total no. of Theory:								**17**
PRACTICAL								
6	BS	PH(IT)391	PHYSICS-II LAB	0	0	3	3	2
7	BS	M(IT)392	NUMERICAL METHODS AND STATISTICS LAB	0	0	3	3	2
8	ES	EC(IT)393	ANALOG & DIGITAL ELECTRONICS LAB	0	0	3	3	2
9	PC	IT391	DATA STRUCTURE LAB	0	0	3	3	2
Total no. of Practical:								**8**
SESSIONAL								
10	HS	HU381	TECHNICAL REPORT WRITING AND LANGUAGE PRACTICE	0	0	3	3	1
TOTAL								**26**

2ND YEAR, 4TH SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact Hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	HS	HU401	ENVIRONMENTAL SCIENCE	2	0	0	2	2
2	PC	IT401	COMPUTER ORGANIZATION & ARCHITECTURE	3	1	0	4	4
3	PC	IT402	COMMUNICATION ENGINEERING & CODING THEORY	3	0	0	3	3
4	PC	IT403	FORMAL LANGUAGE AND AUTOMATA THEORY	3	0	0	3	3
5	PC	IT404	OBJECT ORIENTED PROGRAMMING USING JAVA	3	0	0	3	3
Total no. of Theory:								**15**
PRACTICAL								
6	PC	IT491	COMPUTER ORGANIZATION & ARCHITECTURE LAB	0	0	3	3	2
7	PC	IT492	COMMUNICATION ENGINERING & CODING THEORY LAB	0	0	3	3	2
8	PC	IT494	OBJECT ORIENTED PROGRAMMING LAB	0	0	3	3	2
Total no. of Practical:								**6**
SESSIONAL								
9	MC	MC481	TECHNICAL SKILL DEVELOPMENT	0	0	3	3	2 units
TOTAL								**21**

3RD YEAR, 5TH SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact Hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	PC	IT501	DESIGN ANALYSIS OF ALGORITHM	3	1	0	4	4
2	PC	IT502	SOFTWARE ENGINEERING	3	1	0	4	4
3	PC	IT503	OPERATING SYSTEM	3	1	0	4	4
4	PE	IT504A IT504B IT504C	PROGRAMMING PRACTICE WITH C++ ARTIFICIAL INTELLIGENCE OPERATIONS RESEARCH	3	1	0	4	4
5	HS	HU505	INDUSTRIAL AND FINANCIAL MANAGEMENT	2	0	0	2	2
Total no. of Theory:								**18**
PRACTICAL								
6	PC	IT591	DESIGN ANALYSIS OF ALGORITHM LAB	0	0	3	3	2
7	PC	IT592	SOFTWARE ENGINEERING LAB	0	0	3	3	2
8	PC	IT 593	OPERATING SYSTEM LAB	0	0	3	3	2
9	PE	IT 594A IT 594B IT 594C	PROGRAMMING PRACTICE WITH C++ LAB ARTIFICIAL INTELLIGENCE LAB OPERATIONS RESEARCH LAB	0	0	3	3	2
Total no. of Practical:								**8**
SESSIONAL								
10	PW	IT581	MINI PROJECT - I	0	0	4	4	2
TOTAL:								**28**

3RD YEAR: 6TH SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact Hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	PC	IT 601	DATABASE MANAGEMENT SYSTEM	3	1	0	4	4
2	PC	IT 602	WEB TECHNOLOGY	3	0	0	3	3
3	PC	IT 603	COMPUTER NETWORKING	3	1	0	4	4
4	PE	IT 604 A IT 604 B IT 604 C IT 604 D	ERP INFORMATION & CODING THEORY MICROPROCESSOR & MICROCONTROLLER DIGITAL IMAGE PROCESSING	3	1	0	4	4
5	OE	ECE(IT)605A IT 605 B IT 605 C IT 605 D IT 605 E IT 605 F	DIGITAL SIGNAL PROCESSING COMPILER DESIGN GREEN COMPUTING SOFT COMPUTING PROJECT MANAGEMENT HUMAN RESOURCE MANAGEMENT	3	0	0	3	3
Total no. of Theory:								**18**
PRACTICAL								
6	PC	IT691	DATABASE MANAGEMENT SYSTEM LAB	0	0	3	3	2
7	PC	IT692	WEB TECHNOLOGY LAB	0	0	3	3	2
8	PC	IT693	COMPUTER NETWORKING LAB	0	0	3	3	2
9	PC	IT694	SYSTEM ENGINEERING LAB	0	0	3	3	2
Total no. of Practical:								**8**
SESSIONAL								
10	PW	IT682	MINI PROJECT - II	0	0	4	4	2
11	MC	MC681	SEMINAR/GD/ PRESENTATION SKILL/ FOREIGN LANGUAGE	0	0	3	3	2 units
TOTAL								**28**

4TH YEAR: 7TH SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact Hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	PC	IT701	E - COMMERCE	3	0	0	3	3
2	PE	IT702A IT702B IT702C	COMPUTER GRAPHICS AND MULTIMEDIA PATTERN RECOGNITION INTERNET TECHNOLOGY	3	0	0	3	3
3	PE	IT703 A IT703 B IT703 C	CLOUD COMPUTING DISTRIBUTED SYSTEMS DATA WAREHOUSING AND DATA MINING	3	0	0	3	3
4	OE	IT704A EE(IT)704B ECE(IT)704C IT704D	MODELLING AND SIMULATION CONTROL SYSTEM MICROELECTRONICS AND VLSI DESIGN MOBILE COMMUNICATION	3	0	0	3	3
Total no. of Theory:								**12**
PRACTICAL								
5	PC	IT791	E – COMMERCE LAB	0	0	3	3	2
6	PE	IT792A IT792B IT792C	COMPUTER GRAPHICS & MULTIMEDIA LAB PATTERN RECOGNITION LAB INTERNET TECHNOLOGY LAB	0	0	3	3	2
Total no. of Practical:								**4**
SESSIONAL								
7	PW	IT781	INDUSTRIAL TRAINING	0	0	0	4 weeks	2
8	PW	IT782	PROJECT-I	0	0	6	6	3
9	MC	IT783	SEMINAR/GD/ PRESENTATION SKILL/ FOREIGN LANGUAGE	0	0	3	3	2 units
TOTAL								**21**

4TH YEAR: 8TH SEMESTER

Sl. No	Subject Category	Subject Code	Subject Name	Contact Hours/Week				Total Credits
				L	T	P	Total	
THEORY								
1	PE	IT801A IT801B IT801C IT801D	ADVANCED COMPUTER ARCHITECTURE CRYPTOGRAPHY AND NETWORK SECURITY NATURAL LANGUAGE PROCESSING BIO-INFORMATICS	3	0	0	3	3
2	OE	IT802A IT802B IT802C IT802D	BUSINESS ANALYTICS CYBER LAW AND SECURITY POLICY ADVANCED DBMS INTERNET OF THINGS	3	1	0	4	4
3	HS	HU802	VALUES & ETHICS IN PROFESSIONS	2	0	0	2	2
Total no. of Theory:								**9**
PRACTICAL								
SESSIONAL								
4	PW	IT 881	DESIGN LAB/ INDUSTRIAL PROBLEM RELATED PRACTICAL TRAINING	0	0	3	3	2
5	PW	IT 882	PROJECT II	0	0	12	12	6
6	PW	IT 883	GRAND VIVA	0	0	0	0	3
TOTAL								**20**

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MATHEMATICS–I**
SUBJECT CODE	:	**M101**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand and recall the properties and formula related to matrix algebra, differential calculus integral calculus and vector algebra.
CO2	Determine the solutions of the problems related to matrix algebra, differential calculus, multivariable calculus, vector calculus and infinite series.
CO3	Apply the appropriate mathematical tools of matrix algebra, differential calculus, Integral Calculus, multivariable calculus, vector calculus and infinite series for the solutions of the related problems.
CO4	Analyze different engineering problems linked with matrix algebra, differential calculus, Integral Calculus, multivariable calculus, vector calculus,
CO5	Apply different engineering problems linked with matrix algebra, differential calculus, Integral Calculus, multivariable calculus, vector calculus.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	2	-	-	-	-	-	-	-	2
CO2	3	3	3	2	-	-	-	-	-	-	-	2
CO3	3	3	3	2	-	-	-	-	-	-	-	2
CO4	3	3	3	2	-	-	-	-	-	-	-	2
CO5	3	3	3	2	-	-	-	-	-	-	-	2

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
M101.1	-	-	2
M101.2	-	-	2
M101.3	-	-	2
M101.4	-	-	2
M101.5	-	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PHYSICS –I**
SUBJECT CODE	:	**PH101**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

PH101.1	Describe different types of mechanical resonance and its electrical equivalence
PH101.2	Explain basic principles of Laser, Optical fibers and Polarization of light
PH101.3	Apply superposition principle to explain the phenomena of interference and diffraction
PH101.4	Analyze different crystallographic structures according to their co-ordination number and packing factors
PH101.5	Determine and justify the need of a quantum mechanics as remedy to overcome limitations imposed by classical physics

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	-	-	-	-	-	-	-	-
CO2	2	3	3	3	-	-	-	-	-	-	-	-
CO3	2	3	3	3	-	-	-	-	-	-	-	-
CO4	2	3	3	3	-	-	-	-	-	-	-	-
CO5	2	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	-	-
CO2	2	-	-
CO3	2	-	-
CO4	2	-	-
CO5	2	-	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**BASIC ELECTRONICS ENGINEERING**
SUBJECT CODE	:	**EC101**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

EC101.1:	Demonstrate the concept of Conductors, Insulators, and Semiconductors based on energy-band theory and analyze relevant problems
EC101.2:	Explain the working principles of P-N Junction Diode, zener diode and analyze their applications in the rectifier, clipper, clamper, regulator etc.
EC101.3:	Analyze characteristics of bipolar junction transistor (BJT) under CE, CE, CC mode of operation and its biasing therein
EC101.4:	Distinguish the operations of JFET, MOSFET and demonstrate their operations under CG, CS, CD configurations
EC101.5:	Determine parameters in Operational Amplifier circuit design for various applications

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO 5	PO6	PO 7	PO 8	PO 9	P10	P11	P12
EC101.1	3	3	3	3	-	-	-	-	-	-	-	-
EC101.2	3	3	3	3	-	-	-	-	-	-	-	-
EC101.3	3	3	3	3	-	-	-	-	-	-	-	-
EC101.4	3	3	3	3	-	-	-	-	-	-	-	-
EC101.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	-	-
CO2	3	-	-
CO3	3	-	-
CO4	3	-	-
CO5	3	-	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ENGINEERING MECHANICS**
SUBJECT CODE	:	**ME101**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Construct and understand a free body diagram.
CO2	Understand and calculate the reactions necessary to ensure static equilibrium.
CO3	Apply the effect of friction in static and dynamic conditions.
CO4	Analyse the different surface properties, property of masses and material properties.
CO5	Evaluate and solve different problems of kinematics and kinetics.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	3	-
CO2	2	3	-
CO3	2	3	-
CO4	2	3	-
CO5	2	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMMUNICATIVE ENGLISH**
SUBJECT CODE	:	**HU101**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**2L**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

HU101.1:	Able to comprehend and communicate in English through exposure to communication skills theory and practice.
HU101.2:	Apply the basic grammatical skills of the English language through intensive practice.
HU101.3:	Able to develop reading and comprehension skills.
HU101.4:	Able to develop writing proficiency skills by writing Official Letters, Technicalreport, memo, notice, minutes, agenda, resume, curriculum vitae.
HU101.5:	Able to apply all sets of English language and communication skills in creative and effective ways in the professional sphere of their life

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
HU101.1	-	-	-	-	-	2	1	-	1	1	-	-
HU101.2	-	-	-	-	-	2	1	-	1	1	-	-
HU101.3	-	-	-	-	-	2	1	-	1	1	-	-
HU101.4	-	-	-	-	-	2	1	-	1	1	-	-
HU101.5	-	-	-	-	-	2	1	-	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	2	3
CO2	-	2	3
CO3	-	2	3
CO4	-	2	3
CO5	-	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PHYSICS-I LAB**
SUBJECT CODE	:	**PH191**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Demonstrate experiments allied to their theoretical concepts
CO2	Conduct experiments using LASER, Optical fiber, Torsional pendulum.
CO3	Participate as an individual and as a member or leader in groups in laboratory sessions actively.
CO4	Analyze experimental data and graphical representations to communicate effectively in laboratory reports including innovative experiments.
CO5	Develop critical thinking skills to solve real life challenges.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	3	3	-	-	-	-	1	-	-	-
CO2	3	3	3	3	-	-	-	-	1	-	-	-
CO3	3	3	3	3	-	-	-	-	1	-	-	-
CO4	3	3	3	3	-	-	-	-	1	-	-	-
CO5	3	3	3	3	-	-	-	-	1	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	2	3	2
CO2	2	3	3
CO3	3	3	3
CO4	2	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**BASIC ELECTRONICS ENGINEERING LAB**
SUBJECT CODE	:	**EC191**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Knowledge of Electronic components such as Resistors, Capacitors, Diodes, Transistors measuring equipment like DC power supply, Multimeter, CRO, Signal generator, DC power supply.
CO2	Analyse the characteristics of Junction Diode, Zener Diode, BJT & FET and different types of Rectifier Circuits.
CO3	Determination of input-offset voltage, input bias current and Slew rate, Common- mode Rejection ratio, Bandwidth and Off-set null of OPAMPs.
CO4	Able to know the application of Diode, BJT & OPAMP.
CO5	Understand working of various electronic circuits knowledge of basic electronic components of the circuits.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	3	3	-	-	-	-	1	-	-	-
CO2	3	3	3	3	-	-	-	-	1	-	-	-
CO3	3	3	3	3	-	-	-	-	1	-	-	-
CO4	3	3	3	3	-	-	-	-	1	-	-	-
CO5	3	3	3	3	-	-	-	-	1	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	-	2
CO2	3	-	2
CO3	3	-	2
CO4	3	-	2
CO5	3	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**WORKSHOP PRACTISE**
SUBJECT CODE	:	**ME192**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Gain basic knowledge of Workshop Practice and Safety useful for our daily living.
CO2	Understand the use of Instruments of a pattern shop like Hand Saw, Jack Plain, Chisels etc.
CO3	Apply and performing operations like such as Marking, Cutting etc used in manufacturing processes.
CO4	Analyse the various operations in the Fitting Shop using Hack Saw, various files, Scriber, etc to understand the concept of tolerances applicable in all kind of manufacturing.
CO5	Get hands on practice of in Welding and apply various machining processes which give a lot of confidence to manufacture physical prototypes in project works.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	2	3	3	3	-	-	-	-	2	-	-	-
CO2	2	3	3	3	-	-	-	-	2	-	-	-
CO3	2	3	3	3	-	-	-	-	2	-	-	-
CO4	2	3	3	3	-	-	-	-	2	-	-	-
CO5	2	3	3	3	-	-	-	-	2	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	2	-	-
CO2	2	-	-
CO3	2	-	-
CO4	2	-	-
CO5	2	-	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**LANGUAGE LAB AND SEMINAR PRESENTATION**
SUBJECT CODE	:	**HU191**
YEAR	:	**FIRST**
SEMESTER	:	**1st Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

HU191.1	Able to understand advanced skills of Technical Communication in English through Language Laboratory.
HU191.2	Able to apply listening, speaking, reading and writing skills in societal and professional life.
HU191.3	Able to demonstrate the skills necessary to be a competent Interpersonal communicator.
HU191.4	Able to analyze communication behaviors.
HU191.5	Able to adapt to multifarious socio economical and professional arenas with the help of effective communication and interpersonal skills.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
HU191.1	-	-	-	-	-	1	-	-	1	1	-	-
HU191.2	-	-	-	-	-	1	-	-	1	1	-	-
HU191.3	-	-	-	-	-	1	-	-	1	1	-	-
HU191.4	-	-	-	-	-	1	-	-	1	1	-	-
HU191.5	-	-	-	-	-	1	-	-	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	-	3
CO2	-	-	3
CO3	-	-	3
CO4	-	-	3
CO5	-	-	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MATHEMATICS-II**
SUBJECT CODE	:	**M201**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Determine and recall the properties and formula related to Ordinary differential equations, Multiple integral, vector integral and Laplace transform.
CO2	Determine the solutions of the problems related to Ordinary differential equations, Multiple integral, vector integral and Laplace transform.
CO3	Apply appropriate mathematical tools of Ordinary differential equations, Multiple integral, vector integral and Laplace transform.
CO4	Analyze engineering problems on Ordinary differential equations, Multiple integral, vector integral and Laplace transform.
CO5	Apply engineering solutions by using Ordinary differential equations, Multiple integral, vector integral and Laplace transform.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	-	-	2
CO3	-	-	2
CO4	-	-	2
CO5	-	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**CHEMISTRY**
SUBJECT CODE	:	**CH201**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Able to describe the fundamental properties of atoms & molecules, atomic structure and theperiodicity of elements in the periodic table
CO2	Able to apply fundamental concepts of thermodynamics in different engineering applications.
CO3	Able to apply the knowledge of water quality parameters, corrosion control & polymers todifferent industries.
CO4	Able to determine the structure of organic molecules using different spectroscopic techniques.
CO5	Capable to evaluate theoretical and practical aspects relating to the transfer of the production of chemical products from laboratories to the industrial scale, in accordance with environmental considerations.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	2	2	3	-	-	2	-	-	-	-	-
CO2	3	2	2	3	-	-	2	-	-	-	-	-
CO3	3	2	2	3	-	-	2	-	-	-	-	-
CO4	3	2	2	3	-	-	2	-	-	-	-	-
CO5	3	2	2	3	-	-	2	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	-	3
CO2	2	-	3
CO3	2	-	3
CO4	2	-	3
CO5	2	-	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**BASIC ELECTRICAL ENGINEERING**
SUBJECT CODE	:	**EE201**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1:	To understand Basic Electrical circuits, Power distribution and Safety measures.
CO2:	To analyze an apply DC network theorems.
CO3:	To analyze and apply concept of AC circuits of single-phase and three-phase.
CO4:	To analyze and apply concepts of AC fundamentals in solving AC network problems.
CO5:	To understand basic principles of Transformers and Rotating Machines.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	-	2
CO2	3	-	2
CO3	3	-	2
CO4	3	-	2
CO5	3	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER FUNDAMENTALS & PRINCIPLE OF COMPUTER PROGRAMMING**
SUBJECT CODE	:	**CS201**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand the fundamental concept of Computer and mathematical knowledge and apply them in designing and analyzing solution to engineering problem.
CO2	Understand the basic concept of C programming and use of data types/operators/input/output function for developing and implementing complete program leading to solution of mathematical and engineering problem.
CO3	Use conditional branching, iteration, recursion and formulate algorithms and programs in solving mathematical/scientific/engineering problem and also analyze the same leading to lifelong learning.
CO4	Understand the concept of arrays, pointers, file and dynamic memory allocation and apply it for problem solving and also create new data types using structure, union and enum.
CO5	Understand how to decompose a problem into functions and assemble into a complete program by means of modular programming possibly as a team.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CS201.1	3	3	3	3	-	-	-	-	-	-	-	1
CS201.2	3	3	3	3	-	-	-	-	-	-	-	1
CS201.3	3	3	3	3	-	-	-	-	-	-	-	1
CS201.4	3	3	3	3	-	-	-	-	-	-	-	1
CS201.5	3	3	3	3	-	-	-	-	-	-	-	1

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CS201.1	2	3	3
CS201.2	2	3	3
CS201.3	2	3	3
CS201.4	2	3	3
CS201.5	2	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ENGINEERING THERMODYNAMICS & FLUID MECHANICS**
SUBJECT CODE	:	**ME201**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	To understand representation of force, moments for drawing free-body diagrams and analyze friction-based systems in static condition
CO2	To locate the centroid of an area and calculate the moment of inertia of a section.
CO3	Apply of conservation of momentum & energy principle for particle dynamics and rigid body kinetics
CO4	Understand and apply the concept of virtual work, rigid body dynamics and systems under vibration.
CO5	Understand static equilibrium of particles and rigid bodies in two dimensions including the effect of friction.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	-
CO2	3	2	-
CO3	3	2	-
CO4	3	2	-
CO5	3	2	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**CHEMISTRY LAB**
SUBJECT CODE	:	**CH291**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Able to operate different types of instruments for estimation of small quantities chemicals used in industries and scientific and technical fields.
CO2	Able to analyse and determine the composition of liquid and solid samples working as anindividual and also as an team member
CO3	Able to analyse different parameters of water considering environmental issues
CO4	Able to synthesize drug and polymer materials.
CO5	Capable to design innovative experiments applying the fundamentals of chemistry

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	1	2	2	-	-	1	-	1	-	-	-
CO2	3	1	2	2	-	-	1	-	1	-	-	-
CO3	3	1	2	2	-	-	1	-	1	-	-	-
CO4	3	1	2	2	-	-	1	-	1	-	-	-
CO5	3	1	2	2	-	-	1	-	1	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	2	-
CO2	-	2	-
CO3	-	2	-
CO4	-	2	-
CO5	-	2	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER FUNDAMENTALS & PRINCIPLE OF COMPUTER PROGRAMMING LAB**
SUBJECT CODE	:	**CS 291**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand and propose appropriate command or function in running system or developing program for engineering and mathematical problems depending on the platform used even in changed environment leading to their lifelong learning.
CO2	Identify and propose appropriate data type, arithmetic operators, input/output functions and also conditional statements in designing effective programs to solve complex engineering problem using modern tools.
CO3	Design and develop effective programs for engineering and mathematical problems using iterative statements as well as recursive functions using modular programming approach possibly as a team maintaining proper ethics of collaboration.
CO4	Explain and organize data in arrays, strings and structures and manipulate them through programs and also define pointers of different types and use them in defining self-referential structures and also to construct and use files for reading and writing to and from leading to solution of engineering and mathematical problem.
CO5	Prepare laboratory reports on interpretation of experimental results and analyze it for validating the same maintaining proper ethics of collaboration.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CS291.1	3	3	3	3	-	-	-	-	-	-	-	1
CS291.2	3	3	3	3	-	-	-	-	-	-	-	1
CS291.3	3	3	3	3	-	-	-	-	-	-	-	1
CS291.4	3	3	3	3	-	-	-	-	-	-	-	1
CS291.5	3	3	3	3	-	-	-	-	-	-	-	1

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CS291.1	2	3	3
CS291.2	2	3	3
CS291.3	2	3	3
CS291.4	2	3	3
CS291.5	2	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**BASIC ELECTRICAL ENGINEERING LAB**
SUBJECT CODE	:	**EE291**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Identify and use common electrical components.
CO2	To develop electrical networks by physical connection of various
CO3	Apply and analyze the basic characteristics of transformers and electrical machines.
CO4	Determine efficiency of a single-phase transformer by direct load test
CO5	Determine Starting, Reversing and speed control of DC shunt motor and test single-phase Energy Meter.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	-	-	-	-	2	-	-	-	-	-	1
CO2	2	3	-	-	-	-	-	-	-	-	1	1
CO3	3	-	-	-	-	-	-	-	-	-	-	1
CO4	2	3	2	-	-	-	-	-	-	-	-	1
CO5	2	3	2	-	-	-	-	-	-	-	-	1

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	2
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ENGINEERING DRAWING & GRAPHICS**
SUBJECT CODE	:	**ME291**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Get introduced with Engineering Graphics and visual aspects of design.
CO2	Know and use common drafting tools with the knowledge of drafting standards.
CO3	Apply computer aided drafting techniques to represent line, surface or solid models in different Engineering viewpoints.
CO4	Produce part models; carry out assembly operation and show working procedure of a designed project work using animation.
CO5	Understand the concept of projection and acquire visualization skills, projection of points

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	2	2
CO2	-	2	2
CO3	-	2	2
CO4	-	2	2
CO5	-	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**SOFT SKILL DEVELOPMENT**
SUBJECT CODE	:	**MC 281**
YEAR	:	**FIRST**
SEMESTER	:	**2nd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand the communication skill in social field.
CO2	Understand the skill of professional fields.
CO3	Apply good communication skills in technical fields.
CO4	Develop good communication skills.
CO5	Develop all-round personalities with a mature outlook to function effectively

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	-	-	-	-	-	1	-	-	1	1	-	-
CO2	-	-	-	-	-	1	-	-	1	1	-	-
CO3	-	-	-	-	-	1	-	-	1	1	-	-
CO4	-	-	-	-	-	1	-	-	1	1	-	-
CO5	-	-	-	-	-	1	-	-	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	-	-
CO2	2	-	-
CO3	2	-	-
CO4	2	-	-
CO5	2	-	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MATHEMATICS –III**
SUBJECT CODE	:	**M(IT)301**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Recall the distinctive characteristics of probability distribution.
CO2	Demonstrate the theoretical working of probability distribution, abstract algebra,and graph theory.
CO3	Compute the probability of real-world uncertain phenomena by identifyingprobability distribution that fits the phenomena.
CO4	Understand Binomial, Poisson and Normal distribution with problem solving.
CO5	Construct the shortest path and minimal spanning tree from a given graph using the algorithms of graph theory.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	2	3	3
CO2	2	3	3
CO3	2	3	3
CO4	2	3	3
CO5	2	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PHYSICS-II**
SUBJECT CODE	:	**PH(IT)301**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Explain electromagnetic wave propagation using fundamentals of electrostatics, magnetostatics and electromagnetic theory.
CO2	Apply Schrödinger equation in variety of atomic scale problems including nanomaterials.
CO3	Analyze the importance of superposition principle of quantum mechanics in conceptualization of Quantum bits.
CO4	Justify the importance of Fermi energy level in turning electronic properties of various semiconductors.
CO5	Understand the concept of quantum tunnelling with 1D finite barrier problem.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	2	2	3	-	-	-	-	-	-	-	-
CO2	3	2	2	3	-	-	-	-	-	-	-	-
CO3	3	2	2	3	-	-	-	-	-	-	-	-
CO4	3	2	2	3	-	-	-	-	-	-	-	-
CO5	3	2	2	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	-	-
CO2	3	-	-
CO3	3	-	-
CO4	3	-	-
CO5	3	-	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**NEMERICAL METHODS AND STATISTICS**
SUBJECT CODE	:	**M(IT)302**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Recall the distinctive principles of numerical analysis and the associated errormeasures.
CO2	Understand the theoretical workings of numerical techniques.
CO3	Apply numerical methods used to obtain approximate solutions to intractable mathematical problems such as interpolation, integration, the solution of linear and nonlinear equations, and the solution of ordinary differential equations.
CO4	Select appropriate numerical methods to apply to various types of problems in engineering and science in consideration of the mathematical operations involved, accuracy requirements, and available computational resources.
CO5	Interpret complex statistical findings using the understanding of inferentialstatistics.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	2
CO2	3	3	2
CO3	3	3	2
CO4	3	3	2
CO5	3	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ANALOG AND DIGITAL ELECTRONICS**
SUBJECT CODE	:	**EC(IT)303**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand basic analog and digital electronics, including semiconductor properties, operational amplifiers, combinational and sequential logic and analog-to-digital digital-to-analog conversion techniques
CO2	Identify different symbols, working principles of basic Digital electronics circuits for data processing application
CO3	Analyze the characteristics of basic digital circuits
CO4	Design analog amplifiers, combinational logic devices and sequential logic devices like counters and registers
CO5	Apply different types of wiring and instruments connections keeping in mind technical, Economical, safety issues

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	2	-
CO2	2	2	-
CO3	2	2	-
CO4	2	2	-
CO5	2	2	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DATA STRUCTURE AND ALGORITHM**
SUBJECT CODE	:	**IT301**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Use different kinds of data structures which are suited to different kinds of applications, and some are highly specialized to specific tasks.
CO2	Manage large amounts of data efficiently, such as large databases and internet indexing services.
CO3	Use efficient data structures which are a key to designing efficient algorithms.
CO4	Use some formal design methods and programming languages which emphasize on data structures, rather than algorithms, as the key organizing factor in software design.
CO5	Store and retrieve data stored in both main memory and in secondary memory.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PHYSICS-II LAB**
SUBJECT CODE	:	**PH(IT)391**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	demonstrate experiments allied to their theoretical concepts
CO2	conduct experiments using semiconductors , dielectric and ferroelectrics
CO3	classify various types of magnetic materials
CO4	participate as an individual, and as a member or leader in groups in laboratory sessions actively
CO5	analyze experimental data from graphical representations , and to communicate effectively them in Laboratory reports including innovative experiments

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	1	-	-	-
CO2	3	3	3	3	-	-	-	-	1	-	-	-
CO3	3	3	3	3	-	-	-	-	1	-	-	-
CO4	3	3	3	3	-	-	-	-	1	-	-	-
CO5	3	3	3	3	-	-	-	-	1	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	-	-	2
CO3	-	-	2
CO4	-	-	2
CO5	-	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**NEMERICAL METHODS AND STATISTICS LAB**
SUBJECT CODE	:	**M(IT)392**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand the theoretical workings of numerical techniques with the help of C/ Matlab
CO2	Execute basic command and scripts in a mathematical programming language
CO3	Apply the programming skills to solve the problems using multiple numerical approaches.
CO4	Analyze if the results are reasonable, and then interpret and clearly communicate the results.
CO5	Understand and measurement of Central Tendency Dispersion-variance, Standard deviation.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	-
CO2	3	3	-
CO3	3	3	-
CO4	3	3	-
CO5	3	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ANALOG & DIGITAL ELECTRONICS LAB**
SUBJECT CODE	:	**EC(IT)393**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Examine the characteristics of analog electronic circuit devices such as BJTs andFETs, amplifiers
CO2	Make use of different basic logic gates and universal gates
CO3	Implement the combinational circuits in digital electronics using basic logic gates
CO4	Construct sequential circuits like registers and counters using flip-flops and basic gates
CO5	Realization of Synchronous and Asynchronous counter.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	-	2
CO2	2	-	2
CO3	2	-	2
CO4	2	-	2
CO5	2	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DATA STRUCTURE AND ALGORITHM LAB**
SUBJECT CODE	:	**IT391**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand the concept of dynamic memory management, data types, basic datastructures.
CO2	Be able to design and analyze the time and space efficiency and complexity analysis of the data structure
CO3	Introduce the concept of data structures through ADT.
CO4	Choose the appropriate linear and non-linear data structure and algorithm design method for a specified application design.
CO5	Analyze the complexity of the problems.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	3	3
CO2	-	3	3
CO3	-	3	3
CO4	-	3	3
CO5	-	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**TECHNICAL REPORT WRITING AND LANGUAGE PRACTICE**
SUBJECT CODE	:	**HU 381**
YEAR	:	**SECOND**
SEMESTER	:	**3rd Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

HU381.1:	Impart skill-based lessons in a manner conducive to developing communicative and socio-linguistic competence in the learners.
HU381.2:	Building general awareness, through guided practice, of the taxonomy of listening and speaking skills and sub-skills.
HU381.3:	Build knowledge of the skills required for professional and public speaking so as to inculcate discourse competence in the learners.
HU381.4:	Reinforce grammar skills and practice writing skills through the production of common industry and workplace documents.
HU381.5	Synthesize and integrate material from primary and secondary sources with their own ideas in research papers.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
HU381.1	-	-	-	-	-	1	-	-	1	1	-	-
HU381.2	-	-	-	-	-	1	-	-	1	1	-	-
HU381.3	-	-	-	-	-	1	-	-	1	1	-	-
HU381.4	-	-	-	-	-	1	-	-	1	1	-	-
HU381.5	-	-	-	-	-	1	-	-	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	-	-	2
CO3	-	-	2
CO4	-	-	2
CO5	-	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ENVIRONMENTAL SCIENCE**
SUBJECT CODE	:	**HU401**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**2L**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

HU401.1:	Describe the structure and function of environment and different types of environmental pollution.
HU401.2:	Identify all types of resources and learn the quality parameter to maintain proper balance.
HU401.3:	Demonstrate environmental problems like global warming, acid rain, natural and manmade disasters.
HU401.4:	Demonstrate the controlling method of environmental pollution and apply their knowledge for environment management.
HU401.5:	Apply the method of synthesis of green chemistry and find green solution.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
HU401.1	-	-	-	-	-	1	-	-	1	1	-	-
HU401.2	-	-	-	-	-	1	-	-	1	1	-	-
HU401.3	-	-	-	-	-	1	-	-	1	1	-	-
HU401.4	-	-	-	-	-	1	-	-	1	1	-	-
HU401.5	-	-	-	-	-	1	-	-	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	-	-	2
CO3	-	-	2
CO4	-	-	2
CO5	-	-	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER ORGANIZATION AND ARCHITECTURE**
SUBJECT CODE	:	**IT401**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3L +1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand the organization of the Control unit, Arithmetic and Logical unit, Memory unit and the I/O unit.
CO2	Describe the structure and functioning of a digital computer, including its overall system architecture, operating system, and digital components.
CO3	Construct various design techniques of CPU, Memory, pipelining, ALU, interconnecting I/O devices and microprogramming in order to achieve multiprocessing.
CO4	Developed and Design quantitative performance evaluation of computer systems.
CO5	Apply techniques and technologies to design hardware based architecture

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT401.1	3	2	3
IT401.2	3	2	3
IT401.3	3	2	3
IT401.4	3	2	3
IT401.5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMMUNICATION ENGINEERING AND CODING THEORY**
SUBJECT CODE	:	**IT402**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Able to understand basics of communication system and coding schemes.
CO2	Able to apply the basic concept of PCM systems and baseband transmission schemes.
CO3	Able to analyze and evaluate band pass signaling schemes.
CO4	Able to Create spectral characteristics of band pass signaling schemes and asses noise performance.
CO5	Understand the basics concept of Information Theory FEC, ARQ and CRC

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	3	3
CO2	2	3	3
CO3	2	3	3
CO4	2	3	3
CO5	2	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**FORMAL LANGUAGE AND AUTOMATA THEORY**
SUBJECT CODE	:	**IT403**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT403.1:	Analyze situations in related areas of theory in computer science
IT403.2:	Model, compare and analyze different computational models using combinatorial methods
IT403.3:	Apply rigorously formal mathematical methods to prove properties of languages, grammars and automata
IT403.4:	Construct algorithms for different problems and argue formally about correctness on different restricted machine models of computation
IT403.5	Identify limitations of some computational models and possible methods of proving them

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT403.1	3	3	3	3	-	-	-	-	-	-	-	-
IT403.2	3	3	3	3	-	-	-	-	-	-	-	-
IT403.3	3	3	3	3	-	-	-	-	-	-	-	-
IT403.4	3	3	3	3	-	-	-	-	-	-	-	-
IT403.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**OBJECT ORIENTED PROGRAMMING USING JAVA**
SUBJECT CODE	:	**IT404**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand the key concepts of object oriented programming and have an ability to design Object Oriented programs.
CO2	Analyze complex programming problems and optimize the solutions.
CO3	Eluate and analyze different solution based on object oriented concepts.
CO4	Apply the concepts of object oriented programming for implementing solution of dynamic problems in the field of Information Technology.
CO5	Able to develop web base application in the Java platform.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER ORGANIZATION & ARCHITECTURE LAB**
SUBJECT CODE	:	**IT491**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Remember the basic designing principles of digital electronics circuits.
CO2	Demonstrate Hardware Description Language (HDL) in order to implement skills in designing Architectural solutions and describing designs using VHDL.
CO3	Apply fundamentals of digital design and extend the learning to design sequential circuits.
CO4	Analyze & examine the digital circuit design using Simulation tool.
CO5	Design and implement ALU and CPU with interfacing.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	-
CO2	3	3	-
CO3	3	3	-
CO4	3	3	-
CO5	3	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMMUNICATION ENGINEERING & CODING THEORY LAB**
SUBJECT CODE	:	**IT492**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT492.1:	Understand amplitude modulation and its demodulation.
IT492.2:	Apply Amplitude Modulated Signal and measurement of modulation index for the various conditions under-modulated, over modulated and critically modulated.
IT492.3:	Evaluate and measure the frequency deviation and the modulation index of the wave.
IT492.4:	Design and analyze PAM and its demodulation and PWM, PPM.
IT492.5:	Create and asses Pulse code modulation, ASK FSK, BPSK demodulation.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT492.1	3	3	3	3	-	-	-	-	-	-	-	-
IT492.2	3	3	3	3	-	-	-	-	-	-	-	-
IT492.3	3	3	3	3	-	-	-	-	-	-	-	-
IT492.4	3	3	3	3	-	-	-	-	-	-	-	-
IT492.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**OBJECT ORIENTED PROGRAMMING LAB**
SUBJECT CODE	:	**IT494**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Apply object-oriented programming concepts in designing programs.
CO2	Analyze different dimensions of a problem and provide optimal solutions.
CO3	Evaluate and analyze different solution based on object-oriented concepts.
CO4	Implement solutions of real-life problems in the field of Information Technology.
CO5	Implement new features of Java for developing innovative projects

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**TECHNICAL SKILL DEVELOPMENT (PYTHON PROGRAMMING)**
SUBJECT CODE	:	**MC481**
YEAR	:	**SECOND**
SEMESTER	:	**4th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand basic of Python Programming Language.
CO2	Analyze problems and design effective solutions of them.
CO3	Apply the best features of Python to program real life problems.
CO4	Implement optimal solution of a given problem.
CO5	Implement new features to develop innovative project using Python.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	-	-	-	-	3	-	-	-	-	-	-	-
CO2	-	-	-	-	3	-	-	-	-	-	-	-
CO3	-	-	-	-	3	-	-	-	-	-	-	-
CO4	-	-	-	-	3	-	-	-	-	-	-	-
CO5	-	-	-	-	3	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	3	3
CO2	2	3	3
CO3	2	3	3
CO4	2	3	3
CO5	2	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DESIGN ANALYSIS OF ALGORITHM**
SUBJECT CODE	:	**IT501**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Analyze the asymptotic performance of algorithms.
CO2	Design the algorithms and execute rigorous correctness proofs for the algorithms.
CO3	Apply important algorithmic design paradigms and methods of analysis.
CO4	Synthesize efficient algorithms in common engineering design situations.
CO5	Demonstrate a familiarity with major algorithms and data structures

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT501.1	3	3	3	3	-	-	-	-	-	-	-	-
IT501.2	3	3	3	3	-	-	-	-	-	-	-	-
IT501.3	3	3	3	3	-	-	-	-	-	-	-	-
IT501.4	3	3	3	3	-	-	-	-	-	-	-	-
IT501.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**SOFTWARE ENGINEERING**
SUBJECT CODE	:	**IT502**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Ability to analysis and design of complex systems and meet ethical standards, legal Responsibilities.
CO2	Ability to apply software engineering principles, techniques and develop, maintain, Evaluate large-scale software systems.
CO3	Ability to choose appropriate process model depending on the user requirements.
CO4	To produce efficient, reliable, robust and cost-effective software solutions and perform independent research and analysis.
CO5	Ability to work as an effective member or leader of software engineering teams and manage time, processes and resources effectively by prioritizing competing demands to achieve personal and team goals.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
IT502.1	3	3	3	3	-	-	-	-	-	-	-	-
IT502.2	3	3	3	3	-	-	-	-	-	-	-	-
IT502.3	3	3	3	3	-	-	-	-	-	-	-	-
IT502.4	3	3	3	3	-	-	-	-	-	-	-	-
IT502.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**OPERATING SYSTEM**
SUBJECT CODE	:	**IT503**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Analyze the structure and basic architectural components involved in OS.
CO2	Demonstrate competence in recognizing and using operating system features
CO3	Understand and analyze theory and implementation of different operating system aspect.
CO4	Apply knowledge of different operating system algorithms.
CO5	implement various concepts related to I/O management .

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
IT503.1	3	3	3	3	-	-	-	-	-	-	-	-
IT503.2	3	3	3	3	-	-	-	-	-	-	-	-
IT503.3	3	3	3	3	-	-	-	-	-	-	-	-
IT503.4	3	3	3	3	-	-	-	-	-	-	-	-
IT503.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
IT503.1	3	3	3
IT503.2	3	3	3
IT503.3	3	3	3
IT503.4	3	3	3
IT503.5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PROGRAMMING PRACTICE WITH C++**
SUBJECT CODE	:	**IT504A**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3L +1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT504A.1:	understand the difference between object oriented programming and procedural oriented language and data types in C++.
IT504A.2:	program using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc.
IT504A.3:	simulate the problem in the subjects like Operating system, Computer networks and real world problems.
IT504A.4:	familiarized with Computer Language environment.
IT504A.5:	implement various concepts related to Computer Language.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT504A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT504A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT504A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT504A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT504A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

Cos	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ARTIFICIAL INTELLIGENCE**
SUBJECT CODE	:	**IT504B**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT504B.1:	Understand different types of AI agents and Tools.
IT504B.2:	Know various AI search algorithms (uninformed, informed, heuristic, constraint satisfaction).
IT504B.3:	Understand the fundamentals of knowledge representation (logic-based, frame-based, semantic nets), inference and theorem proving.
IT504B 4:	Demonstrate working knowledge of reasoning in the presence of incomplete and/or uncertain information.
IT504B.5:	Ability to apply knowledge representation, reasoning, and machine learning techniquesto real-world problems.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**OPERATIONS RESEARCH**
SUBJECT CODE	:	**IT504C**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1:	Design knowledge-base representation models.
CO2:	Analyze the performance of rule-based-systems.
CO3: **CO4**	Develop rule-based expert systems and planning tools. Develop problem in the field of Operation Research networks and real world problems
CO5:	Implement heuristic search algorithms for real life problem solving.
CO1:	Design knowledge-base representation models.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**INDUSTRIAL & FINANCIAL MANAGEMENT**
SUBJECT CODE	:	**HU 505**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**2L**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

HU505.1:	Explain and describe various technology-based business models and the dynamics of value creation, value proposition, and value capture in industrial enterprises.
HU505.2:	Select, interpret and use different costing techniques as a basis for decisions in various business situations.
HU505.3:	Understand the basic principles of financial accounting and reporting.
HU505.4:	Produce and interpret an industrial company's Annual Statement, at a basic level.
HU505.5:	Describe the operations of an industrial enterprise from various perspectives, and analyze its basic strengths and weaknesses based on concepts from the field ofIndustrial Management.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
HU505.1	-	-	-	-	1	1	1	1	1	1	-	-
HU505.2	-	-	-	-	1	1	1	1	1	1	-	-
HU505.3	-	-	-	-	1	1	1	1	1	1	-	-
HU505.4	-	-	-	-	1	1	1	1	1	1	-	-
HU505.5	-	-	-	-	1	1	1	1	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	2	-
CO2	2	2	-
CO3	2	2	-
CO4	2	2	-
CO5	2	2	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DESIGN ANALYSIS OF ALGORITHM LAB**
SUBJECT CODE	:	**IT591**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Able to Argue the correctness of algorithms using inductive proofs and Analyze worst-case running times of algorithms using asymptotic analysis.
CO2	Able to explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.
CO3	Able to Explain the major graph algorithms and Employ graphs to model engineering problems, when appropriate.
CO4	Able to Compare between different data structures and pick an appropriate data structure for a design situation.
CO5	Write rigorous correctness proofs for algorithms. Demonstrate a familiarity with major algorithms and data structures.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**SOFTWARE ENGINEERING LAB**
SUBJECT CODE	:	**IT592**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Ability to apply software engineering principles, techniques and develop,maintain, evaluate large-scale software systems.
CO2	Ability to analysis and design of complex systems and meet ethical standards,legal responsibilities.
CO3	To produce efficient, reliable, robust and cost-effective software solutions andperform independent research and analysis.
CO4	Ability to work as an effective member or leader of software engineering teams and manage time, processes and resources effectively by prioritizing competingdemands to achieve personal and team goals.
CO5	Able to track the progress of a project, also prepare SRS document, design document, test cases and software configuration management and risk management related document.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	1	-
CO2	3	3	3	3	-	-	-	-	-	-	1	-
CO3	3	3	3	3	-	-	-	-	-	-	1	-
CO4	3	3	3	3	-	-	-	-	-	-	1	-
CO5	3	3	3	3	-	-	-	-	-	-	1	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**OPERATING SYSTEM LAB**
SUBJECT CODE	:	**IT 593**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT593.1:	Describe the important computer system resources and the role of operating system in their management policies and algorithms.
IT593.2:	Understand the process management policies and scheduling of processes by CPU
IT593.3:	Evaluate the requirement for process synchronization and coordination handled by operating system
IT593.4:	Describe and analyze the memory management and its allocation policies
IT593.5	Identify use and evaluate the storage management policies with respect to differentstorage management technologies.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT593.1	3	3	3	3	-	-	-	-	-	-	-	-
IT593.2	3	3	3	3	-	-	-	-	-	-	-	-
IT593.3	3	3	3	3	-	-	-	-	-	-	-	-
IT593.4	3	3	3	3	-	-	-	-	-	-	-	-
IT593.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	-
CO2	3	3	-
CO3	3	3	-
CO4	3	3	-
CO5	3	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PROGRAMMING PRACTICE WITH C++ LAB**
SUBJECT CODE	:	**IT 594A**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Apply the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects.
CO2	Understand dynamic memory management techniques using pointers, constructors, destructors.
CO3	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
CO4	Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
CO5	Demonstrate the use of various OOPs concepts and C++ features with the help of programs.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT594A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT594A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT594A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT594A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT594A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	-
CO2	3	3	-
CO3	3	3	-
CO4	3	3	-
CO5	3	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ARTIFICIAL INTELLIGENCE LAB**
SUBJECT CODE	:	**IT594B**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand and recognize various AI search algorithms and AI tools.
CO2	Apply the fundamentals of knowledge representation, inference and theorem provingusing
CO3	Analyze working knowledge of reasoning in the presence of incomplete and/oruncertain information.
CO4	Evaluate and create knowledge representation, reasoning, and machine learningtechniques for the solutions of real-world problems.
CO5	Identify and Apply Artificial Intelligence concepts to solve real world problems.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	-
CO2	3	3	-
CO3	3	3	-
CO4	3	3	-
CO5	3	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**OPERATIONS RESEARCH LAB**
SUBJECT CODE	:	**IT594C**
YEAR	:	**THIRD**
SEMESTER	:	**5th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand knowledge of different Optimization Techniques.
CO2	Analyze for better Optimization Techniques
CO3	Implement Dijkstra's or Floyd's Algorithm using TORA
CO4	Implement Maximal Flow Problem using TORA
CO5	Implement PERT/CPM using TORA

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	-
CO2	3	3	-
CO3	3	3	-
CO4	3	3	-
CO5	3	3	-

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DATA BASE MANAGEMENT SYSTEM**
SUBJECT CODE	:	**IT 601**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT601.1:	Define Database Management System, explain fundamental elements of a database management system, compare the basic concepts of relational data model, entity-relationship model.
IT601.2:	Design entity-relationship diagrams to represent simple database application scenarios, translate entity-relationship diagrams into relational tables, populate a relational database and formulate SQL queries on the data
IT601.3:	Criticize a database design and improve the design by normalization
IT601.4:	Choose efficient query optimization techniques, select suitable transaction management, concurrency control mechanism and Recovery management techniques.
IT601.5:	Explain File organization and use appropriate index structure.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT 601.1	3	3	3	3	-	-	-	-	-	-	-	-
IT 601.2	3	3	3	3	-	-	-	-	-	-	-	-
IT 601.3	3	3	3	3	-	-	-	-	-	-	-	-
IT 601.4	3	3	3	3	-	-	-	-	-	-	-	-
IT 601.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**WEB TECHNOLOGY**
SUBJECT CODE	:	**IT602**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand and evaluate web application architecture, technologies and frameworks.
CO2	Apply the knowledge of web technology in developing web applications.
CO3	Evaluate different solutions in field of web application development.
CO4	Implement small to large scale project to provide live solution in web application development fields.
CO5	Implement several Web services using Ajax, XML and JSP.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT602.1	3	3	3	3	-	-	-	-	-	-	-	-
IT602.2	3	3	3	3	-	-	-	-	-	-	-	-
IT602.3	3	3	3	3	-	-	-	-	-	-	-	-
IT602.4	3	3	3	3	-	-	-	-	-	-	-	-
IT602.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT602.1	2	3	2
IT602.2	2	3	2
IT602.3	2	3	2
IT602.4	2	3	2
IT602.5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER NETWORKING**
SUBJECT CODE	:	**IT 603**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT603.1:	Understand the network model and architecture
IT603.2:	Analyze different networking functions and features for indentifying optimal solutions
IT603.3:	Apply different networking concepts for implementing network solution
IT603.4:	Evaluate and implement routing algorithms for implanting solution for the real lifeproblems
IT603.5:	Implement model of fault tolerant computer networks.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT603.1	3	3	3	3	-	-	-	-	-	-	-	-
IT603.2	3	3	3	3	-	-	-	-	-	-	-	-
IT603.3	3	3	3	3	-	-	-	-	-	-	-	-
IT603.4	3	3	3	3	-	-	-	-	-	-	-	-
IT603.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT603.1	3	3	3
IT603.2	3	3	3
IT603.3	3	3	2
IT603.4	3	3	3
IT603.5	3	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ERP**
SUBJECT CODE	:	**IT 604A**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT604A.1	Understand the basic concepts and benefits of ERP
IT604A.2	Identify different technologies and IT support used in ERP.
IT604A.3	Understand and apply the concepts of ERP Manufacturing Perspective and ERPModules.
IT604A.4	Understand and implement the ERP life cycle.
IT604A.5	Apply different tools used in ERP.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT 604A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT 604A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT 604A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT 604A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT604A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT604A.1	2	3	2
IT604A.2	2	3	2
IT604A.3	2	3	2
IT604A.4	2	3	2
IT604A.5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**INFORMATION AND CODING THEORY**
SUBJECT CODE	:	**IT 604B**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT604B.1:	Understand the concepts of information, mutual information, entropy and various source coding techniques for a reliable digital communication.
IT604B.2:	Analyze the need for source coding and error control techniques in a communication system.
IT604B.3:	Apply linear algebra, concept of Galois field, conjugate roots, minimal polynomial in channel coding techniques for error control.
IT604B.4:	Generate different error control codes like linear block codes, cyclic codes, BCH codes, and perform error detection and correction.
IT604B.5:	Design the circuit for different error control coding techniques.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT604B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT604B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT604B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT604B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT604B.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT604B.1	2	3	2
IT604B.2	2	3	2
IT604B.3	2	3	2
IT604B.4	2	3	2
IT604B.5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MICROPROCESSOR & MICROCONTROLLER**
SUBJECT CODE	:	**IT 604C**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT604C.1:	Able to correlate the architecture, instructions, timing diagrams, addressing modes, memory interfacing, interrupts, data communication of 8085
IT604C.2:	Recognize 8051 micro controller hardware, input/output pins, ports, external memory, counters and timers, instruction set, addressing modes, serial data i/o, interrupts
IT604C.3:	Recognize 8051 micro controller hardware, input/output pins, ports, external memory, counters and timers, instruction set, addressing modes, serial data i/o, interrupts
IT604C.4:	Apply instructions for assembly language programs of 8085, 8086 and 8051
IT604C.5:	Design peripheral interfacing model using IC 8255, 8253, 8251 with IC 8085, 8086 and 8051.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT604C.1	3	3	3	3	-	-	-	-	-	-	-	-
IT604C.2	3	3	3	3	-	-	-	-	-	-	-	-
IT604C.3	3	3	3	3	-	-	-	-	-	-	-	-
IT604C.4	3	3	3	3	-	-	-	-	-	-	-	-
IT64C1.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT604C.1	2	3	2
IT604C.2	2	3	2
IT604C.3	2	3	2
IT604C.4	2	3	2
IT604C.5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DIGITAL IMAGE PROCESSING**
SUBJECT CODE	:	**IT604D**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT604D.1	Understand the fundamental concepts of a digital image processing system.
IT604D.2	Analyze images in the spatial as well as frequency domain using varioustransforms.
IT604D.3	Categorize and implement various compression techniques.
IT604D.4	Implement and evaluate the techniques for improving the image quality.
IT604D.5	Analyze and implement image segmentation and representation techniques

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT604D.1	3	3	3	3	-	-	-	-	-	-	-	-
IT604D.2	3	3	3	3	-	-	-	-	-	-	-	-
IT604D.3	3	3	3	3	-	-	-	-	-	-	-	-
IT604D.4	3	3	3	3	-	-	-	-	-	-	-	-
IT604D.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT604D.1	2	3	2
IT604D.2	2	3	2
IT604D.3	2	3	2
IT604D.4	2	3	2
IT604D.5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DIGITAL SIGNAL PROCESSING**
SUBJECT CODE	:	**ECE(IT)605A**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Able to understand the classification and operations of discrete signals.
CO2	Able to interpret discrete time systems.
CO3	Able to analyze discrete time signal in frequency domain and their region of convergence using Z Transforms.
CO4	Able to define discrete systems in the Frequency domain using Fourieranalysis tools like DFT, FFT.
CO5	Able to design FIR and IIR digital filters.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	2	2	-	-	-	-	-	-	-	-
CO2	3	3	2	2	-	-	-	-	-	-	-	-
CO3	3	3	3	3	2	2	1	3	-	2	-	-
CO4	3	3	3	3	3	3	1	3	-	3	-	-
CO5	3	3	3	3	3	3	1	3	-	3	2	3

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	2	1	2
CO2	2	2	2
CO3	2	2	2
CO4	2	2	2
CO5	2	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPILER DESIGN**
SUBJECT CODE	:	**IT 605B**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

C01	To understand the knowledge of parsing, lexical and syntax analysis.
C02	To analyze various parsing techniques, code optimization.
C03	To apply the knowledge about the compilers they practically use.
C04	To learn how the parse trees are generated, errors are handled and code is optimized.
CO5	To learn how to implement intermediate code and target code generation.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
IT605B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT605B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT605B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT605B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT605B.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
IT605B.1	3	3	3
IT605B.2	3	3	3
IT605B.3	3	3	3
IT605B.4	3	3	3
IT605B.5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**GREEN COMPUTING**
SUBJECT CODE	:	**IT 605C**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT605C.1:	Understand and analyze Green IT.
IT605C.2:	Compare and invent new methodology for green assets like Data Centers.
IT605C.3:	Gain knowledge about Grid framework.
IT605C.4:	Understand the Protocols, Standards, and Audits of Green Compliance.
IT605C.5:	Apply the concept of the Environmentally Responsible Business Strategies.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT 605C.1	3	3	3	3	-	-	-	-	-	-	-	-
IT 605C.2	3	3	3	3	-	-	-	-	-	-	-	-
IT 605C.3	3	3	3	3	-	-	-	-	-	-	-	-
IT 605C.4	3	3	3	3	-	-	-	-	-	-	-	-
IT 605C.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
IT605C.1	2	2	2
IT605C.2	2	2	2
IT605C.3	3	3	3
IT605C.4	3	1	1
IT605C.5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**SOFT COMPUTING**
SUBJECT CODE	:	**IT605D**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Develop intelligent systems leveraging the paradigm of soft computing techniques.
CO2	Implement, evaluate and compare solutions by various soft computing approaches for finding the optimal solutions.
CO3	Recognize the feasibility of applying a soft computing methodology for a particular problem.
CO4	Design the methodology to solve optimization problems using fuzzy logic, genetic algorithms and neural networks.
CO5	Design hybrid system to revise the principles of soft computing in various applications

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PROJECT MANAGEMENT**
SUBJECT CODE	:	**IT605E**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT605E.1	Describe the basic concepts of software project management and project planning
IT605E.2 **IT605E.3**	Describe the basic concepts of project planning Apply project management techniques to real-world project
IT605E.4	Apply different techniques in monitoring and control of project and people.
IT605E.5	Work in team to understand and evaluate project management standard, tools.managing contracts and software quality.
IT605E.1	Describe the basic concepts of software project management and project planning

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT605E.1	3	3	3	3	-	-	-	-	-	-	-	-
IT605E.2	3	3	3	3	-	-	-	-	-	-	-	-
IT605E.3	3	3	3	3	-	-	-	-	-	-	-	-
IT605E.4	3	3	3	3	-	-	-	-	-	-	-	-
IT605E.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**HUMAN RESOURCE MANAGEMENT**
SUBJECT CODE	:	**IT605F**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT605F.1	Explain the importance of human resources and their effective management in organizations
IT605F.2	Describe the meanings of terminology and tools used in managing employees Effectively and Record governmental regulations affecting employees and Employers
IT605F.3	Demonstrate a basic understanding of different tools used in forecasting, planning and maintenance of human resource needs
IT605F.4 **IT605F.5**	Analyze the key issues related to administering the human elements such as Motivation, compensation, appraisal, career planning, diversity, ethics, and training Analyze the training issues for resource management in real life problem.
IT605F.1	Explain the importance of human resources and their effective management in organizations

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT605F.1	3	3	3	3	-	-	-	-	-	-	-	-
IT605F.2	3	3	3	3	-	-	-	-	-	-	-	-
IT605F.3	3	3	3	3	-	-	-	-	-	-	-	-
IT605F.4	3	3	3	3	-	-	-	-	-	-	-	-
IT605F.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	**3**	**3**	**3**
CO2	**3**	**3**	**3**
CO3	**3**	**3**	**3**
CO4	**3**	**3**	**3**
CO5	**3**	**3**	**3**

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DATA BASE MANAGEMENT SYSTEM LAB**
SUBJECT CODE	:	**IT691**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Design and implement a database schema for a given problem-domain
CO2	Create and maintain tables using PL/SQL Course Outcome
CO3	Populate and query a database
CO4	Prepare reports
CO5	Application development using PL/SQL & front-end tools

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**WEB TECHNOLOGY LAB**
SUBJECT CODE	:	**IT692**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	understand and evaluate web application architecture, technologies and frameworks.
CO2	Apply the knowledge of web technology in developing web applications
CO3	Evaluate different solutions in field of web application development.
CO4	Implement small to large scale project to provide live solution in web applicationdevelopment fields.
CO5	Develop real life project through applying updated web technology platform.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**Computer Networking Lab**
SUBJECT CODE	:	**IT 693**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand and apply different network commands.
CO2	Analyze different networking functions and features for implementing optimalsolutions.
CO3	Apply Transmission Media, Flow Control and Error Detection & Correction.
CO4	Understand fundamental concepts in Routing, Addressing & working of Transport Protocols.
CO5	Understand Wireless LANs & Wireless Sensor Networks Operation.

CO-PO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**P10**	**P11**	**P12**
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**SYSTEM ENGINEERING LAB**
SUBJECT CODE	:	**IT 694**
YEAR	:	**THIRD**
SEMESTER	:	**6th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT694.1:	Understand and analyze the embedded systems
IT694.2:	Understand and apply the embedded programming concepts
IT694.3:	Analyze and evaluate solution in physical computing fields
IT694.4:	Understand Raspberry Pi platform in GPIO, Blinking LED, GPIO Simulator etc.
IT 694.5:	Implement simple to critical circuit using embedded system.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT694.1	3	3	3	3	-	-	1	-	-	-	1	-
IT694.2	3	3	3	3	-	-	1	-	-	-	1	-
IT694.3	3	3	3	3	-	-	1	-	-	-	1	-
IT694.4	3	3	3	3	-	-	1	-	-	-	1	-
IT694.5	3	3	3	3	-	-	1	-	-	-	1	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**E-COMMERCE**
SUBJECT CODE	:	**IT 701**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT701.1	Understand the policy issues related to privacy, intellectual property rights, and establishing identity those are germane to electronic commerce along with the Internet and related technologies.
IT701.2	Comprehend the underlying economic mechanisms and driving forces of E-Commerce;
IT701.3	Analyze the impact that electronic commerce is facing and outlines the different digital transaction process and basic concepts of e-commerce.
IT701.4	Identify the importance of digital library and specify the development of electronic commerce capabilities in a company.
IT701.5	Appraise the opportunities and potential to apply and synthesize a variety of e- Commerce and M-Commerce concepts and solutions to create business value for organizations, customers, and business partners.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT701.1	3	3	3	3	-	-	-	1	-	-	1	-
IT701.2	3	3	3	3	-	-	-	1	-	-	1	-
IT701.3	3	3	3	3	-	-	-	1	-	-	1	-
IT701.4	3	3	3	3	-	-	-	1	-	-	1	-
IT701.5	3	3	3	3	-	-	-	1	-	-	1	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	-	3
CO2	3	-	3
CO3	3	-	3
CO4	3	-	3
CO5	3	-	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER GRAPHICS AND MULTIMEDIA**
SUBJECT CODE	:	**IT702A**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT702A.1:	Know the foundations of computer graphics and Identify different media representations of different multimedia data and data formats.
IT702A.2:	Comprehend the concept of geometric, mathematical and algorithmic concepts necessary for programming computer graphics.
IT702A.3:	Understand the comprehension of windows, clipping and view-ports object representation in relation to images displayed on screen.
IT702A.4:	Apply different coding technique for solving real world problems.
IT702A.5:	Identify the software utilized in constructing computer graphics and multimedia applications.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT702A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT702A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT702A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT702A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT702A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PATTERN RECOGNITION**
SUBJECT CODE	:	**IT 702B**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT702B.1:	Understand basic concepts in pattern recognition.
IT702B.2:	Formulate and describe various applications in pattern recognition.
IT702B.3:	Gain knowledge about state-of-the-art algorithms used in pattern recognition research.
IT702B.4:	Understand pattern recognition theories, such as Bayes classifier, linear discriminant analysis.
IT702B.5:	Demonstrate successful applications to process and analyze images, and to makeautomatic decisions based on extracted feature information.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT702B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT702B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT702B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT702B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT702B.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	2
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**INTERNET TECHNOLOGY**
SUBJECT CODE	:	**IT 702C**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT702C.1:	Understand advanced networking concepts and internet and web application architectures
IT702C.2:	Analyze and understand different advanced routing protocols being used in web application development
IT702C.3:	Understand advanced configuration of firewall, Firewalls & SSL.
IT702C.4:	Analyze and evaluate different solution available in the field of networking and web application development such as http and the World Wide Web, HTML, and Java Scripts;
IT702C.5:	Implement solution for different critical network related issues as; implementing the design using the client/server model, testing and documenting the solutions developed.
IT702C.1:	Understand advanced networking concepts and internet and web application architectures

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT702C.1	3	3	3	3	-	-	-	-	-	-	-	-
IT702C.2	3	3	3	3	-	-	-	-	-	-	-	-
IT702C.3	3	3	3	3	-	-	-	-	-	-	-	-
IT702C.4	3	3	3	3	-	-	-	-	-	-	-	-
IT702C.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	**:**	**INFORMATION TECHNO**
SUBJECT NAME	**:**	**CLOUD COMPUTING**
SUBJECT CODE	**:**	**IT 703A**
YEAR	**:**	**FORTH**
SEMESTER	**:**	**7th Semester**
CONTACT HOURS	**:**	**3L**
CREDITS	**:**	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT703A.1:	Understand the basic architecture of cloud computing
IT703A.2:	Analyze different problems in the domain of cloud computing.
IT703A.3:	Apply the knowledge of cloud computing in the evaluation of the computing model.
IT703A.4:	Evaluate the different models and solutions provided in the field of cloud computing.
IT703A.5:	Understand the different case study on open source and commercial clouds platform.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT703A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT703A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT703A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT703A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT703A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	2
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DISTRIBUTED SYSTEM**
SUBJECT CODE	:	**IT 703B**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT703B.1:	Understand the knowledge of the basic elements and concepts related to distributed system technologies for identify core architectural aspects of distributed systems;
IT703B.2:	Design and implement distributed applications;
IT703B.3:	Identify the main underlying components of distributed systems (such as RPC, file systems) and use those components for building a distributed system
IT703B.4:	Use and apply important methods in distributed systems to support scalability and fault tolerance;
IT703B.5:	Demonstrate experience in building large-scale distributed applications.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT703B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT703B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT703B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT703B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT703B.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	2
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**DATA WAREHOUSING AND DATA MINING**
SUBJECT CODE	:	**IT703C**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT703C.1:	Understand the concepts of data warehousing and data mining
IT703C.2:	Understand and apply the dimensional modeling technique for designing a data warehouse applying warehouse architectures
IT703C.3:	Apply OLAP and the project planning aspects in building a data warehouse and. explain the knowledge discovery process
IT703C.4:	Identify and apply the data mining tasks and study their well-known techniques
IT703C.5:	Develop an understanding of the role played by knowledge in a diverse range of intelligent systems

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT703C.1	3	3	3	3	-	-	-	-	-	-	-	-
IT703C.2	3	3	3	3	-	-	-	-	-	-	-	-
IT703C.3	3	3	3	3	-	-	-	-	-	-	-	-
IT703C.4	3	3	3	3	-	-	-	-	-	-	-	-
IT703C.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	2
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MODELLING AND SIMULATION**
SUBJECT CODE	:	**IT704A**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT704A.1:	Summarize the issues in Modeling and Simulation
IT704A.2:	Explain the System Dynamics & Probability concepts in Simulation.
IT704A.3:	Solve the Simulation of Queuing Systems
IT704A.4:	Analyze the Simulation output
IT704A.5:	Identify the application area of Modeling and Simulation and apply in thecorresponding fields

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT704A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT704A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT704A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT704A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT704A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	2	3
CO2	2	2	3
CO3	2	2	3
CO4	2	2	3
CO5	2	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**CONTROL SYSTEM**
SUBJECT CODE	:	**EE(IT)704B**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

CO1	Understand basic structure of control systems.
CO2	Understand and explain basic terminologies and components.
CO3	Represent physical systems into transfer function form and thus can analyze system dynamic and steady state behavior
CO4	Analyze system stability and design controllers, compensators infrequency domain.
CO5	Understand property of State transition matrix and concept of controllability and observability.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	-	2	-	-	-	-	-	-	-	-	-	1
CO2	3	2	-	2	-	-	-	-	-	-	-	2
CO3	3	2	2	2	2	-	-	-	-	-	-	2
CO4	2	3	2	2	-	-	-	-	-	-	-	1
CO5	2	3	2	3	-	-	-	-	-	1	-	2

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	2	2
CO2	2	1	2
CO3	2	3	1
CO4	1	3	2
CO5	2	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MICROELECTRONICS AND VLSI DESIGN**
SUBJECT CODE	:	**ECE(IT)704C**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

ECE(IT)704C.1:	Use mathematical methods and circuit analysis models in analysis of CMOS digital electronics circuits, including logic components and their interconnect
ECE(IT)704C.2:	Create models of moderately sized CMOS circuits that realize specified digital functions
ECE(IT)704C.3:	Apply CMOS technology-specific layout rules in the placement and routing of transistors and interconnect, and to verify the functionality, timing, power, and parasitic effects
ECE(IT)704C.4:	Understand of the characteristics of CMOS circuit construction and the comparison between different state-of-the-art CMOS technologies and processes
ECE(IT)704C.5:	Complete a significant VLSI design project having a set of objective criteria and design constraints

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	2	-	2	-	-	-	-	-	-	-	-
CO2	2	-	3	2	1	-	-	-	-	-	-	-
CO3	2	3	-	2	1	-	-	-	-	-	-	-
CO4	3	2	-	2	-	-	-	-	-	-	-	-
CO5	2	-	-	-	2	-	-	2	2	2	-	2

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	3	2
CO2	2	2	3
CO3	3	3	2
CO4	2	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**MOBILE COMMUNICATION**
SUBJECT CODE	:	**IT704D**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT704D.1:	Explain the limitations of fixed networks;
IT704D.2:	Understand the need and the trend toward mobility; concepts portability and mobility.
IT704D.3:	Describe and analyze the network infrastructure requirements to support mobiledevices and users.
IT704D.4:	Illustrate the concepts, techniques, protocols and architecture employed in wireless local area networks, cellular networks, and perform basic requirements analysis.
IT704D.5:	Apply techniques and technologies to design and communicate a simple mobile application for smaller devices.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT704D.1	3	3	3	3	-	-	-	-	-	-	-	-
IT704D.2	3	3	3	3	-	-	-	-	-	-	-	-
IT704D.3	3	3	3	3	-	-	-	-	-	-	-	-
IT704D.4	3	3	3	3	-	-	-	-	-	-	-	-
IT704D.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	2	3
CO2	2	2	3
CO3	2	2	3
CO4	2	2	3
CO5	2	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**E-COMMERCE LAB**
SUBJECT CODE	:	**IT 791**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT791.1:	Understand the concept of PHP framework.
IT791.2:	Analyzing different client and server-side components for developing application.
IT791.3:	Build dynamic web site using server-side PHP programming and database connectivity
IT791.4:	Apply and concept for developing MVC application and describe and differentiate different Web Extensions and Web Services.
IT791.5:	Apply and implement the solution to real life problem using PHP concepts and Demonstrate web application using Python web Framework.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT791.1	3	3	3	3	-	-	-	1	-	-	1	-
IT791.2	3	3	3	3	-	-	-	1	-	-	1	-
IT791.3	3	3	3	3	-	-	-	1	-	-	1	-
IT791.4	3	3	3	3	-	-	-	1	-	-	1	-
IT791.5	3	3	3	3	-	-	-	1	-	-	1	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	2
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**COMPUTER GRAPHICS AND MULTIMEDIA LAB**
SUBJECT CODE	:	**IT792A**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT792A.1:	Create 3D graphical scenes using open graphics library suits
IT792A.2:	Analyze the effects of scale and use on both presentation and lower level requirements
IT792A.3:	Develop an interactive multimedia presentation by using multimedia devices.
IT792A.4:	Identify theoretical and practical aspects in designing multimedia applications surrounding the emergence of multimedia technology.
IT792A.5:	Implement image manipulation, enhancement, and basic transformations on objects and clipping algorithm on lines

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT792A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT792A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT792A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT792A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT792A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	3	2
CO2	2	3	2
CO3	2	3	2
CO4	2	3	2
CO5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**PATTERN RECOGNITION LAB**
SUBJECT CODE	:	**IT 792B**
YEAR	:	**FORTH**
SEMESTER	:	**7th Semester**
CONTACT HOURS	:	**3P**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT792B.1:	Understand pattern recognition concepts.
IT792B.2:	Analyze pattern recognition techniques.
IT792B.3:	Apply different pattern recognition technique for providing solution.
IT792B.4:	Understand different classifier technique to classify in choosing pattern.
IT792B.5:	Implement solution to real life problem using pattern recognition techniques.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT792B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT792B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT792B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT792B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT792B.4	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	2	3	2
CO2	2	3	2
CO3	2	3	2
CO4	2	3	2
CO5	2	3	2

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ADVANCED COMPUTER ARCHITECTURE**
SUBJECT CODE	:	**IT801A**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT801A.1:	Understand the operations of modern and high performance computer systems.
IT801A.2:	Identify cache and memory related issues in multi-processors architecture.
IT801A.3:	Evaluate performance of different architectures with respect to various parameters.
IT801A.4:	Analyze performance of different ILP techniques of computer architecture.
IT801A.5:	Design the mechanism by which the performance of the system is enhanced.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
CO1	3	3	3	3	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-
CO4	3	3	3	3	-	-	-	-	-	-	-	-
CO5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**CRYPTOGRAPHY AND NETWORK SECURITY**
SUBJECT CODE	:	**IT801B**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT801B.1:	Identify computer and network security threats, classify the threats and develop a security model to prevent, detect and recover from the attacks.
IT801B.2:	Analyze existing authentication and key agreement protocols, identify the weaknessesof these protocols.
IT801B.3:	Develop SSL or Firewall based solutions against security threats, employ access control techniques to the existing computer platforms.
IT801B.4:	Write an extensive analysis report on any existing security product or code, investigate the strong and weak points of the product or code.
IT801B.5:	Understand Firewall Configurations, DMZ Network and apply this technology.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT801B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT801B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT801B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT801B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT 801B.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**NATURAL LANGUAGE PROCESSING**
SUBJECT CODE	:	**IT801C**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT801C.1:	Understand the models and methods Natural Language Processing (NLP).
IT801C.2:	Apply different algorithms of statistical NLP for common NLP tasks.
IT801C.3:	Apply core computer science concepts and algorithms in the processing of natural language.
IT801C.4:	Apply the methods to new NLP problems and will be able to apply the methods to problems outside NLP.
IT801C.5:	Familiar with research field and able to implement a system which processes a natural Language.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT801C.1	3	3	3	3	-	-	-	-	-	-	-	-
IT801C.2	3	3	3	3	-	-	-	-	-	-	-	-
IT801C.3	3	3	3	3	-	-	-	-	-	-	-	-
IT801C.4	3	3	3	3	-	-	-	-	-	-	-	-
IT801C.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**BIO-INFORMATICS**
SUBJECT CODE	:	**IT801D**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L**
CREDITS	:	**3**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT801D.1:	Acquire the knowledge of Bioinformatics technologies with the related concept of DNA, RNA and their implications
IT801D.2:	Understand the concept and techniques of different types of Data Organization.
IT801D.3:	Understand Sequence Databases with different types of Analysis Tools for Sequence Data Banks
IT801D.4:	Acquire the knowledge of the DNA Sequence Analysis
IT801D.5:	Analyze the performance of different types of Probabilistic models used inComputational Biology

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT801D.1	3	3	3	3	-	-	-	-	-	-	-	-
IT801D.2	3	3	3	3	-	-	-	-	-	-	-	-
IT801D.3	3	3	3	3	-	-	-	-	-	-	-	-
IT801D.4	3	3	3	3	-	-	-	-	-	-	-	-
IT801D.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**BUSINESS ANALYTICS**
SUBJECT CODE	:	**IT802A**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT802A.1:	Find a meaningful pattern in data
IT802A.2:	Graphically interpret data
IT802A.3:	Implement the analytic techniques
IT802A.4:	Handle large scale analytics projects from various domains.
IT802A.5:	Implement updated business analytics for solving various problems.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT802A.1	3	3	3	3	-	-	-	-	-	-	-	-
IT802A.2	3	3	3	3	-	-	-	-	-	-	-	-
IT802A.3	3	3	3	3	-	-	-	-	-	-	-	-
IT802A.4	3	3	3	3	-	-	-	-	-	-	-	-
IT802A.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**CYBER LAW AND SECURITY POLICY**
SUBJECT CODE	:	**IT802B**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L+1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT 802B.1:	Understand the policy issues related to electronic filing of documents with the Government agencies and further to amend the Indian Penal Code, the Indian EvidenceAct, 1872, the Bankers' Books Evidence Act, 1891 and the Reserve Bank of India Act, 1934 and for matters connected therewith or incidental thereto.
IT802B.2:	Analyze the effectiveness of the prevailing information security law practices.
IT802B.3:	Identify the importance of lawful recognition for transactions through electronic data Interchange.
IT802B.4:	Understand electronic communication, commonly referred toas electronic commerce or E-Commerce.
IT802B.5:	Comprehend the architecture that can cater to the needs of the social information security.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT802B.1	3	3	3	3	-	-	-	-	-	-	-	-
IT802B.2	3	3	3	3	-	-	-	-	-	-	-	-
IT802B.3	3	3	3	3	-	-	-	-	-	-	-	-
IT802B.4	3	3	3	3	-	-	-	-	-	-	-	-
IT802B.4	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**ADVENCED DBMS**
SUBJECT CODE	:	**IT 802C**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L + 1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT802C.1:	Evaluate and Apply Advanced Database Development Techniques.
IT802C.2:	Evaluate different Database Systems
IT802C.3:	Perform administrator's job for database systems.
IT802C.4:	Design & Implement Advanced Database Systems.
IT802C.5:	Develop real life project using advance database.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT802C.1	3	3	3	3	-	-	-	-	-	-	-	-
IT802C.2	3	3	3	3	-	-	-	-	-	-	-	-
IT802C.3	3	3	3	3	-	-	-	-	-	-	-	-
IT802C.4	3	3	3	3	-	-	-	-	-	-	-	-
IT802C5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**INTERNET OF THINGS**
SUBJECT CODE	:	**IT802D**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**3L +1T**
CREDITS	:	**4**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

IT802D.1:	Understand the basic concepts of Internet of Things and its architecture.
IT802D.2:	Analyze and understand the basic applications of IoT.
IT802D.3:	Apply the concepts of IoT to design different tools.
IT802D.4:	Under stand different layer architecture to implement in project.
IT802D.5:	Evaluate and analyze different solution for the real-life problems of Internet of Things.

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
IT802D.1	3	3	3	3	-	-	-	-	-	-	-	-
IT802D.2	3	3	3	3	-	-	-	-	-	-	-	-
IT802D.3	3	3	3	3	-	-	-	-	-	-	-	-
IT802D.4	3	3	3	3	-	-	-	-	-	-	-	-
IT802D.5	3	3	3	3	-	-	-	-	-	-	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

STREAM	:	**INFORMATION TECHNOLOGY**
SUBJECT NAME	:	**VALUES AND ETHICS IN PROFESSIONS**
SUBJECT CODE	:	**HU802**
YEAR	:	**FORTH**
SEMESTER	:	**8th Semester**
CONTACT HOURS	:	**2L**
CREDITS	:	**2**

Course Outcome

On successful completion of the learning sessions of the course, the learner will be able to:

HU802.1:	Understand the core values that shape the ethical behaviour of an engineer and Exposed awareness on professional ethics and human values.
HU802.2:	Understand the basic perception of profession, professional ethics, various moral issues & uses of ethical theories
HU802.3:	Understand various social issues, industrial standards, code of ethics and role of professional ethics in engineering field
HU802.4:	Aware of responsibilities of an engineer for safety and risk benefit analysis, professional rights and responsibilities of an engineer.
HU802.5:	Acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
HU802.1	-	-	-	-	-	1	1	1	1	1	-	-
HU802.2	-	-	-	-	-	1	1	1	1	1	-	-
HU802.3	-	-	-	-	-	1	1	1	1	1	-	-
HU802.4	-	-	-	-	-	1	1	1	1	1	-	-
HU802.5	-	-	-	-	-	1	1	1	1	1	-	-

CO-PSO Mapping

COs	PSO1	PSO2	PSO3
CO1	-	-	2
CO2	-	-	2
CO3	-	-	2
CO4	-	-	2
CO5	-	-	2

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