Stanley College of Engineering and Technology for Women

(Approved by AICTE, Accredited by NAAC 'A', UGC Autonomous)

Abids, Hyderabad, Telangana–500001

Department of Artificial Intelligence & Data Science

Vision: To be the center of excellence in empowering girl students with quality education to make lifelong global innovators & contributors in the ever-advancing field of Artificial Intelligence & Data Science.

Mission:

1. To provide a student-centric education that aims to focus on a four-tiered strategy of Education, Research, Development and Innovation by formulating a meaningful curriculum that combines theory and practical skills.

2. To Foster industry collaborations for impactful applications, industry readiness & encourage students in research, innovations and inventions through quality internships, hackathons & other technical events.

3. To let our young minds flourish in any industry by promoting continuous learning and develop employability skills through quality training programs.

4. To produce competent and ethical engineers who will design, develop, innovate & invent ethical AI systems, leaving a remarkable impact on the technological needs of the society and achieve self- sustainability.

Program Educational Objectives: (PEO's)

PEO1: To provide graduates with the proficiency to utilize the fundamental knowledge of basic sciences, mathematics, artificial intelligence, data science and statistics to build systems that require management and analysis of large volume of data.

PEO2: To enrich graduates with necessary technical skills to pursue pioneering research in the field of AI

PEO3: To encourage students to think critically, develop innovative skills, expose them to an array of ideas and information through numerous technical events, hackathons and quality internships.

Program Specific Outcomes: (PSO's)

PSO1: To instill interest and curiosity in students in the field of AI and Data Science through project-based learning.

PSO2: To provide a concrete foundation and enrich their abilities to qualify for Employment, Higher studies and pursue Research in Artificial Intelligence and Data science with ethical values.

PSO3: To promote ethical and responsible AI practices for the benefit of humanity and to harness AI for a positive societal impact & meet global standard.

PROGRAM OUTCOMES

PO1: Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.

PO2: Problem Analysis: Identify, formulate, research literature and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

PO6: The engineer and society: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

PO7: Environment & sustainability: 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.

PO8: Ethics: Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.

PO9: Individual and Team work: Understand and commit to professional ethics and responsibilities and norms of engineering practice.

PO10: Communication: Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.

PO11: Project Management and Finance: Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.

PO12: Lifelong Learning: Recognize the need for, and have the ability to engage in independent and life-long learning

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

AY:2023-2024

Name of the Course/Lab	Course Code	Course Outcomes	PO's, PSO's
Deep Learning	PC701AD.1	Understand the concepts of Neural Networks	PO1, PO2, PO5 PSO1, PSO2, PSO3 PEO1, PEO2, PEO3
	PC701AD.2	Apply optimization strategies to implement MLP	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PC701AD.3	Build deep learning models in TensorFlow and interpret the results	PO3, PO5 PSO1, PSO3 PEO1, PEO2
	PC701AD.4	Understand the Recurrent neural networks	PO1, PO2 PSO1, PSO2 PEO1, PEO2
	PC701AD.5	Build applications in Deep Learning using real-world data	PO3, PO4, PO5 PSO1, PSO2, PSO3 PEO1, PEO2, PEO3
Mining of Massive Datasets	PC702AD.1	Recollecting fundamentals of data mining.	PO1, PO2 PSO1, PSO2 PEO1, PEO2
	PC702AD.2	Extract interesting patterns from large amounts of data.	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PC702AD.3	Apply and evaluate by choosing suitable data mining algorithms for clustering	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PC702AD.4	Choose and employ suitable data mining algorithms for mining data streams and link analysis.	PO3, PO5 PSO1, PSO2, PSO3 PEO1, PEO2, PEO3
	PC702AD.5	Acquire knowledge on mining social network graphs and build the case study: Web Advertisement.	PO3, PO4, PO5 PSO1, PSO2, PSO3 PEO1, PEO2, PEO3

Software Project Management	PC703AD.1	Understand the activities during the project scheduling of any software application	PO1, PO3 PSO2, PSO3 PEO2, PEO3
	PC703AD.2	Learn the risk management activities and the resource allocation for the projects.	PO2, PO3, PO5 PSO2 PEO2, PEO3
	PC703AD.3	Apply the software estimation and recent quality standards for evaluation of the software Projects.	PO3, PO5 PSO2 PEO2, PEO3
	PC703AD.4	Acquire knowledge and skills needed for the construction of highly reliable software project.	PO3, PO4, PO5 PSO2 PEO2, PEO3
	PC703AD.5	Create reliable, replicable cost estimation that links to the requirements of project planning and managing.	PO3, PO5 PSO2 PEO2, PEO3
Natural Language Processing	PE742AD.1	Interpret linguistic phenomena and an ability to model them with formal grammars.	PO1, PO2 PSO1, PSO2 PEO2, PEO3
	PE742AD.2	Apply and analyses proper experimental methodology for training and evaluating empirical NLP systems.	PO2, PO5 PSO2, PSO3 PEO2, PEO3
	PE742AD.3	Interpret the morphemes, syntax and semantics of a language.	PO1, PO2 PSO1, PSO2 PEO1, PEO2
	PE742AD.4	Apply probabilistic approaches, construct statistical models over strings and trees and estimate parameters using supervised and unsupervised training methods	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PE742AD.5	Design, implement and analyze NLP	PO3, PO5

		Algorithms.	PSO1, PSO2 PEO1, PEO2
	PE742AD.6	Describe some applications of statistical techniques to natural language analysis. Such as classification and probabilistic parsingg.	PO3, PO5 PSO2, PSO3 PEO2, PEO3
Entrepreneurship	OE 704 ME.1	Understand Indian Industrial Environment, Entrepreneurship and Economic growth, Small- and Large-Scale Industries, Types and forms of enterprises.	PO1, PO2, PO8, PO10, PO11, PO12, PSO1
	OE 704 ME.2	Identify the characteristics of entrepreneurs, Emergence of first generation entrepreneurs, Conception and evaluation of ideas and their sources.	PO1, PO2, PO3, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	OE 704 ME.3	Practice the principles of project formulation, Analysis of market demand, Financial and profitability analysis and Technical analysis.	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	OE 704 ME.4	Understand the concept of Intellectual Property Rights and Patents	PO1, PO2, PO4, PO5, PO8, PO10, PO11, PO12, PSO1, PSO2
	OE 704 ME.5	Comprehend the aspects of Start-Ups.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Deep Learning Lab	PC751AD.1	Develop ANN without using Machine Learning/Deep learning library	PO1, PO3 PSO1, PSO2 PEO1, PEO2
	PC751AD.2	Understand the Training ANN model with back propagation	PO1, PO3 PSO1, PSO2 PEO1, PEO2
	PC751AD.3	Develop model for sequence learning using RNN	PO1, PO3 PSO1, PSO2 PEO1, PEO2
	PC751AD.4	Develop image classification model using ANN and CNN.	PO3, PO5 PSO1, PSO2

			PEO1, PEO2
	PC751AD.5	Generate a new image with auto-encoder and GAN.	PO3, PO5 PSO1, PSO2, PSO3 PEO1, PEO2, PEO3
Mining of Massive Datasets Lab	PC752AD.1	Understand various massive datasets and apply pre-processing Techniques and evaluate with various statistical methods for any given raw data.	PO1, PO2, PO5 PSO1, PSO2 PEO1, PEO2
	PC752AD.2	Extract interesting patterns from large amounts of data.	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PC752AD.3	Choose suitable data mining algorithm for clustering, on data stream and analyse page rank algorithms	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PC752AD.4	Discover the role played by data mining in social network and advertising.	PO3, PO5 PSO1, PSO3 PEO1, PEO2, PEO3
Project Work – I	PW761AD.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.	PO1, PO2, PO3, PO5 PSO2, PSO3 PEO1, PEO2, PEO3
	PW761AD.2	Evaluate different solutions based on economic and technical feasibility	PO2, PO5, PO11 PSO2 PEO2
	PW761AD.3	Effectively plan a project and confidently perform all aspects of project management	PO3, PO11 PSO2 PEO2
	PW761AD.4	Demonstrate effective written and oral communication skills	PO7, PO10 PSO2 PEO3
Summer Internship	SI671AD.1	Able to design/develop a small and simple product in hardware or software.	PO1, PO3 PSO1 PEO1, PEO2
	SI671AD.2	Able to complete the task or realize a pre-specified target, with limited scope, rather than taking up a complex task and	PO2, PO3 PSO1 PEO1

		leave it.	
	SI671AD.3	Able to learn to find alternate viable solutions for a given problem and evaluate these alternatives with reference to pre-specified criteria.	PO2, PO3, PO5 PSO1, PSO2 PEO2, PEO3
	SI671AD.4	Able to implement the selected solution and document the same	PO3, PO4, PO10 PSO1, PSO2 PEO1, PEO3
Data Engineering	PE871AD.1	Acquire Knowledge on principles of data engineering	PO1, PO2 PSO1, PSO2 PEO1, PEO2
	PE871AD.2	Study the data engineering design process to acquire data and develop data modeling methods for their evaluation	PO3, PO5 PSO1, PSO2 PEO1, PEO2
	PE871AD.3	Explain data engineering frameworks and Big data tools	PO1, PO5 PSO1, PSO2 PEO1, PEO2
	PE871AD.4	Understand the Categories of API	PO1, PO3 PSO1, PSO2 PEO1, PEO2
	PE871AD.5	Learn and Understand data science projects using API	PO3, PO5 PSO1, PSO2 PEO1, PEO2, PEO3
Essentials of Road Safety Engineering	OE 805 CE.1	Understand the fundamental of Road safety analysis.	PO1, PO2 PSO1 PEO1
	OE 805 CE.2	Analyse accident area.	PO2, PO3 PSO1 PEO1, PEO2
	OE 805 CE.3	Remember the concepts of road safety audit.	PO1, PO2 PSO1 PEO1
	OE 805 CE.4	Applications of road signs and marking.	PO3, PO5 PSO1 PEO1, PEO2
	OE 805 CE.5	To implement the traffic system from road safety point of view.	PO3, PO4 PSO1 PEO2

Project Work – II	PW861AD.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to real-world problems.	PO1, PO2, PO3, PO5 PSO2, PSO3 PEO1, PEO2, PEO3
	PW861AD.2	Evaluate different solutions based on economic and technical feasibility	PO2, PO5, PO11 PSO2 PEO2
	PW861AD.3	Effectively plan a project and confidently perform all aspects of project management	PO3, PO5, PO11 PSO2 PEO2
	PW861AD.4	Demonstrate effective written and oral communication skills	PO7, PO10 PSO2 PEO3
	PW861AD.5	Analyse, apply and appreciate contemporary project management tools and methodologies in Indian context.	PO3, PO5, PO11 PSO2 PEO2, PEO3

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Department of Artificial Intelligence and Machine Learning

Institute Vision:

Empower Women; Impact the World. Empowering girl students through professional education integrated with values and character to make an impact in the World.

Institute Mission:

M1: Providing quality engineering education for girl students to make them competent and confident to succeed in professional practice and advanced learning.
M2: Establish state-of-art-facilities and resources to facilitate world class education.
M3: Integrating qualities like humanity, social values, ethics, leadership in order to encourage contribution to society.

Department Vision and Mission: Yet to be formulated.

Program Educational Objectives: (PEOs)

PE01: Impart quality and value based education that results in innovation in Artificial Intelligence.

PE02: Establish lifelong learning communities in the leading areas of Artificial Intelligence and Machine Learning.

PE03: Equip students with interdisciplinary skill sets to build data products that will provide a promising career with bright future

Program Specific Outcomes: (PSOs)

PS01: Achieve excellent standards in using the latest tools and knowledge involved in Artificial Intelligence and Machine Learning

PS02: Engage students in project based competitions (e.g. Kaggle), technical events like poster and paper presentation and quality internships

PS03: Monitor students learning and motivate them for professional growth

COURSE CODE & TITLE	COURSE OUTCOMES	POs & PSOs
Universal Human Values(SHS0902EG) **GLOBAL**	1.Identify the essentials of human values and skills.	PO8,PO6,PS01,PS02,PS03
	2.Understand between profession and happiness.	PO7,PO8, PS01,PS02,PS03
	3.Understand practically the importance of trust, mutually satisfying human behaviour.	PO9,PO8,PS01,PS02,PS03
	4.Develop and enrich interaction with nature.	PO7,PS03

	5.Develop appropriate technologies and management patterns to create harmony in professional and personal life.	PO11,PO12,PS01,PS02,PS03
Indian Constitution(SMC901HS) **NATIONAL**	1.Know the background of the present constitution of India.	PO6,PS01,PS02,PS03
	2.Understand the working of the union,state and local levels.	PO6,PS01,PS02,PS03
	3.Gain consciousness on the fundamental rights and duties.	PO8,PS01,PS02,PS03
	4.Be able to understand the functioning and distribution of Financial resources Between the centre and states.	PO11,PS01,PS02,PS03
	5.Be exposed to the reality of hierarchical Indian Social structure and the ways the grievances of the deprived.Sections can be addressed to raise Human dignity in a democratic way	PO7,PO9, PS01,PS02,PS03

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Department of Artificial Intelligence and Machine Learning
Department of COs

COURSE CODE & TITLE	COURSE OUTCOMES	PROGRAM OUTCOMES	PROGRAM SPECIFIC OUTCOMES
Universal Human Values(SHS0902EG) **GLOBAL**	1.Identify the essentials of human values and skills.	PO8,PO6	PS01,PS02,PS03
	2.Understand between profession and happiness.	PO7,PO8	PS01,PS02,PS03
	3.Understand practically the importance of trust, mutually satisfying human behaviour.	PO9,PO8	PS01,PS02,PS03
	4.Develop and enrich interaction with nature.	PO7	PS03

	5.Develop appropriate technologies and management patterns to create harmony in professional and personal life.	PO11,PO12	PS01,PS02,PS03
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	2.Understand the working of the union,state and local levels.	PO6	PS01,PS02,PS03
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	5.Be exposed to the reality of hierarchical Indian Social structure and the ways the grievances of the deprived.Sections can be addressed to raise Human dignity in a democratic way	PO7,PO9	PS01,PS02,PS03

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Department of Artificial Intelligence and Machine Learning
Department of COs

S.NO	COURSE CODE	COURSE TITLE	COURSE OUTCOMES
1.	SBS0101MT	Mathematics-1	1.Identify the nature of sequences and series 2.Analyze the consequences of the mean value Theorems for differentiable functions and Evaluate the Curvature. 3.Analyze the properties of functions of two variables 4.Evaluate double and triple integrals in engineering problems. 5.Solve problems based on vector differentiation and integration.
2.	SES0103EE	Fundamentals of Electronics Engineering	1.To analyze the electrical circuits using different theorems. 2.Study the AC circuits in terms of different parameters. 3.Study Diode characteristics and applications as rectifiers and filters. 4.To analyze the characteristics of BJT and FET. 5.Ability to analyze and design feedback amplifiers and oscillators circuits using OP-AMPs
3	SBS002PH	Applied Physics	1.Explain the lasing actions in lasers,propagation of light

			in optical fibers and compile their applications in different fields. 2.Identify semiconductors for engineering applications and to show their understanding in current applications like solar cell,Photo cell and Thermistor. 3.Select the materials for various applications in different fields 4.Apply and solve various engineering problems from concepts of dual nature of particles. 5.Classify solids based on their energy band structures and explain the importance of nano materials in our daily life
4	SES01011T	Programming for Problem Solving	1.Describe the concept of computer system,analyze a given problem,develop an algorithm,fundamental programming constructs,identify data representation formats and describe operators and their precedence,associativity 2.Understand branching and loop statements. 3.Describe the concept of homogenous derives data types,strings and functions. 4.Understand pointers,heterogeneous data types. 5.Describe the concept of file system.
5	SHS0911EG	English Lab	1.Improve pronunciation skills by learning the phonemic system, word

			stress,rhythm and intonation of English phonetics. 2.Communicate effectively and appropriately using appropriate verbal and non verbal communication by participating in a situational context like role plays(ANALYZE,CREATE) 3.Develop their listening comprehension skills and perform effectively in competitive exams(CREATE,APPLY) 4.Face mock interviews confidently and demonstrate their verbal and soft skills(APPLY,CREATE) 5.Enhance participation skills and be able to explain and defend their opinions by participating in Group Discussions and Debates(UNDERSTAND,APPLY,CREATE)
6.	SES0113EE	Fundamentals of Electronics Engineering Lab	1.Ability to solve different circuits by using theorems. 2.Ability to analyze characteristics of Diodes and BJTs. 3.Ability to design different amplifier circuits. 4.Ability to design the different oscillator circuits. 5.Ability to design OP-AMP applications.
7	SBS0912PH	Applied Physics Lab	1.Relate theoretical knowledge to practical concepts by conducting experiments and can take measurements independently. 2.Know the working of different devices like solar

			cell,photocell,thermistor and learn their applications in day to day life. 3.Summarize the experimental findings appropriately in laboratory records. .4.Compute and compare experimental results,draw graphs,estimate and interpret results.
8	SES0111IT	Programming for Problem Solving Lab	1.Understand the concept of basics of C,data types and variables. 2.Understand the concept of operators,precedence of operators,conditional statements and looping statements. 3.Explore the concepts of strings,functions,recursive functions and differences between call b value and call by reference. 4.Explore the concept of storage classes,preprocessor directives,pointers and files.. 5.Understand the concept of file handling functions,searching and sorting methods and real tie applications of C.
9	SES0912ME	Engineering workshop	1.Identify and demonstrate the usage of different tools to be used in various manufacturing trades with safety measures. 2.Apply the skills developed to undertake the jobs connected to various engineering workshop trades including fitting,carpentry,sheet

			metal,house wiring,welding and foundry. 3.Demonstrate the knowledge of various machine tools and their operations such as machining,injection moulding,casing and 3D printing and basic electronics lab instruments. 4.Illustrate the advanced machining processes like CNC, rapid prototyping. 5.Apply the basic knowledge of computers to assemble and assemble various components of computer and able to install various operating system such as windows or Linux.
10	SHS0111IT	Design Thinking	1.Compare and classify the various learning styles and memory techniques and Apply them in their engineering education. 2.Analyze emotional experience and Inspect emotional expressions to better understand users while designing innovative products. 3.Develop new ways of creative thinning and Learn the innovation cycle of Design Thinking process for developing innovative products. 4.Propose real-time innovative engineering product designs and Choose appropriate frameworks,strategies,techniques during prototype development. 5.Perceive individual

			differences and its impact on everyday decisions and further create a better customer experience.
11	SBS0201MT	Mathematics-II	1.Apply the concept of ran of matrices and Solve system of equations 2.Solve certain first order differential equations. 3.Solve certain second and higher order differential equations. 4.Apply Laplace transforms,solve ordinary differential equations by using it. 5.Apply problem-solving using complex analysis techniques applied to diverse situations in physics,engineering and other mathematical contexts.
12	SES0201IT	Data Structures	1.Implement sorting and searching algorithms. 2.Understand the Concept of ADT, identify data structures suitable to solve problems. 3.Develop and analyze algorithms for stacks,queues using arrays to solve problems. 4.Develop algorithm for Binary trees, Balanced Trees and Graphs. 5.Implement various Hashing and Collision Resolution Technique.
13	SBS0901CH	Applied Chemistry	1.Apply the concept of electrode potential in identifying feasibility of electrochemical reaction:illustrate electro analytical techniques and

			working of batteries(Application). 2.Identify the mechanism of corrosion of materials on basis of electrochemical approach and devise corrosion control methods.Water Chemistry enables understanding the causes effects of hardness(Knowledge) 3.Analyze the preparation,properties and applications of polymeric materials.(Analysis) 4.Classify chemical fuels and grade them through qualitative analysis.(Knowledge,Analysis) 5.Understanding the software technologies on Drug design and examples of clean technology.(Knowledge,Application)
14	SHS0901EG	English	1.Demonstrate competence in language by using appropriate vocabulary and grammar(REMEMBER,APPLY). 2.Evaluate themselves for their decision making and critical thinking skills and motivate to understand their goals and dreams through reading fiction and non-fiction(EVALUATE,ANALYZE,APPLY). 3.Improve their technical and creative writing skills by learning the different types of writings(UNDERSTAND,CREATE) 4.Learn to read effectively to

			comprehend the nuances of simple and complex texts(UNDERSTAND,APPLY). 5.Use inclusive language and demonstrate empathy and treat all people with respect,dignity and impartiality(UNDERSTAND,APPLY)
15	SHS0902EG	Universal Human Values	1.Identify the essentials of human values and skills. 2.Understand between profession and happiness. 3.Understand practically the importance of trust, mutually satisfying human behaviour. 4.Develop and enrich interaction with nature. 5.Develop appropriate technologies and management patterns to create harmony in professional and personal life.
16	SES0211IT	Data Structures Lab	1.Understand the concept of data structures, C programming and apply algorithm for solving problems like Sorting,Searching,insertion and deletion of data. 2.Understand linear data structures for processing of unordered data. 3.Explore various operations on dynamic data structures like single linked list and doubly linked list. 4.Explore the concepts of non linear data structures such as trees and graphs. 5.Understand the binary search trees, hash function

			and concepts of collision and its resolution methods.
17	SBS0911CH	Chemistry Lab	1.Knowing of the hardness and alkalinity of sample water(Analysis) 2 Measure the amount of a substance in a given solution by conductometry,potentiometry and PH metry(Application) 3.Analysis of physical properties like surface tension and viscosity(Analysis). 4.Analysis of about rate of reactions and rate constant information(Knowledge) 5.Importance of absorption of light by substance in analysis(Knowledge,Analysis).
18	SES011ME	Engineering Graphics	1.Use appropriate instruments and apply the engineering conventions to draw engineering objects to scale on a drawing sheet. 2.Make use of AutoCAD software to draft engineering curves like conics,involuters and cycloids. 3.Make use of AutoCAD software to draft projections of lines and determine unknown lengths and angles. 4.Make use of AutoCAD software to draft projection of planes and solids in various positions. 5.Convert isometric views to orthographic and vice versa.
19	SPW022IT	IDEA Lab	

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Abids, Hyderabad, Telangana–500001

Department of Computer Engineering

Vision: Empowering girl students with comprehensive and pragmatic knowledge in computer engineering for success in life.

Mission:

1. To impart quality education for girl students to learn and practice various hardware and software and to facilitate networking platforms which are the state of the art in industry. platforms prevalent in industry.

2. To achieve self-sustainability and overall development through entrepreneurship and technology transfer through research and development activities.

3. To groom students with good an optimistic attitude, excellent team work and great personality skills.

Program Educational Objectives: (PEO's)

PEO1: Our graduates shall have enhanced skills and comprehensive knowledge in software and hardware, networking technologies for professional excellence, towards successful self-employment, advanced learning, entrepreneurship and research.

PEO2: Our graduates shall have life-long learning attitude, innovation and creativity to master the state of the art technologies with inclination towards research, devising pragmatic solutions for realistic and social issues in the society.

PEO3: Our graduates shall have optimistic attitude and vibrant personality skills, high ethical values, individuality, excellent teamwork, leadership and entrepreneurial skills towards computer professionalism and ethical practices within the organization and the society.

Program Specific Outcomes: (PSO's)

PSO1: Problem-Solving Skills: The ability to apply industry standard practices and pragmatic strategies in software and hardware and network project development using open-ended programming environments to deliver a quality product within time and budget for the benefit of students.

PSO2: Design, Implement, Test and Evaluate a computer system, software, hardware, networks, component or innovative algorithm to meet desired needs and to solve a computational problem within time and space.

PROGRAM OUTCOMES

PO1: Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.

PO2: Problem Analysis: Identify, formulate, research literature and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

PO6: The engineer and society: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

PO7: Environment & sustainability: 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.

PO8: Ethics: Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.

PO9: Individual and Team work: Understand and commit to professional ethics and responsibilities and norms of engineering practice.

PO10: Communication: Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.

PO11: Project Management and Finance: Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.

PO12: Lifelong Learning: Recognize the need for, and have the ability to engage in independent and life-long learning

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DEPARTMENT OF COMPUTER ENGINEERING

AY:2023-2024

Name of the Course/Lab	Course Code	Course Outcomes	PO's, PSO's
Machine Learning	PC 701 CM.1	Distinguish different learning-based applications	PO1, PO2, PO5, PSO1
	PC 701 CM.2	Distinguish different learning-based applications.	PO1, PO2, PO5, PSO1
	PC 701 CM.3	Apply the classification and clustering techniques to real world problems.	PO1, PO2, PO3, PO4, PO12, PO5, PSO1, PSO2
	PC 701 CM.4	Apply the ensemble learning methods.	PO1, PO2, PO3, PO4, PO12, PO5, PSO1, PSO2
	PC 701 CM.5	Apply Convolutional Neural networks techniques to real world problems.	PO1, PO2, PO3, PO4, PO12, PO5, PSO1, PSO2
	PC 701 CM.6	Understand how to apply machine learning in various applications.	PO1, PO2, PO3, PO4, PO12, PO5, PSO1, PSO2
Natural Language Processing	PC 702 CM.1	To tag a given text with basic language features	PO1, PO2, PO5, PO12, PSO1
	PC 702 CM.2	To design an innovative application using NLP components	PO1, PO2, PO3, PO4, PO5, PO11, PO12, PSO1, PSO2
	PC 702 CM.3	To implement a rule-based system to tackle morphology/syntax of a language	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC 702 CM.4	To describe approaches to syntax and semantics in NLP.	PO1, PO2, PO4, PO5, PO12, PSO1
	PC 702 CM.5	To compare and contrast the use of different statistical approaches for different types of NLP applications.	PO1, PO2, PO4, PO5, PO12, PSO1, PSO2
	PC 702 CM.6	To Reproduce various machine learning techniques used in NLP	PO1, PO2, PO4, PO5, PO12, PSO1, PSO2
Big Data Analytics	PE-741CM.1	Describe big data and use cases from selected business domains.	PO1, PO2, PO5, PO12, PSO1
	PE-741CM.2	Explain NoSQL big data management	PO1, PO2, PO5, PO12, PSO1

	PE-741CM.3	Install, configure, and run Hadoop and HDFS	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PE-741CM.4	Perform map-reduce analytics using Hadoop	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PE-741CM.5	Use Hadoop related tools such as HBase, Cassandra, Pig, and Hive for big data analytics	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
Start- Up Entrepreneurship	OE 701 ME.1	Understand Indian Industrial Environment, Entrepreneurship and Economic growth, Small- and Large-Scale Industries, Types and forms of enterprises.	PO1, PO2, PO8, PO10, PO11, PO12, PSO1
	OE 701 ME.2	Identify the characteristics of entrepreneurs, Emergence of first generation entrepreneurs, Conception and evaluation of ideas and their sources.	PO1, PO2, PO3, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	OE 701 ME.3	Practice the principles of project formulation, Analysis of market demand, Financial and profitability analysis and Technical analysis.	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	OE 701 ME.4	Understand the concept of Intellectual Property Rights and Patents	PO1, PO2, PO4, PO5, PO8, PO10, PO11, PO12, PSO1, PSO2
	OE 701 ME.5	Comprehend the aspects of Start-Ups.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
Machine Learning Lab	PC 751 CM.1	Capture data from different types of Data sets.	PO1, PO2, PO5, PO12, PSO1
	PC 751 CM.2	Implement various algorithms for data analysis	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC 751 CM.3	Implement various algorithms based on required user requirements	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC 751 CM.4	Implement various algorithms on real world problems.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC 751 CM.5	Implement ensemble methods and evaluate the	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2

		performance of different methods.	
Natural Language Processing Lab	PC752CM.1	Demonstrate various natural language processing techniques and understand the implementation using python.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC752CM.2	Analyze the sentences in terms of bi-grams, tri-grams using natural language processing.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC752CM.3	Write context-free grammars for small fragments of natural language.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PC752CM.4	Explain the concept of Stemming, Lemmatization and its difference.	PO1, PO2, PO4, PO5, PO12, PSO1
	PC752CM.5	Apply text classification techniques used in NLP.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
Project Work – I	PW 752 CM.1	To understand project characteristics and various stages of project	PO1, PO2, PO10, PO11, PO12, PSO1
	PW 752 CM.2	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	PW 752 CM.3	Evaluate different solutions based on economic and technical feasibility	PO1, PO2, PO3, PO4, PO5, PO8, PO11, PO12, PSO1, PSO2
	PW 752 CM.4	Effectively plan a project and confidently perform all aspects of project management	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	PW 752 CM.5	Demonstrate effective written and oral communication skills	PO6, PO7, PO8, PO9, PO10, PO11, PO12
Cloud Computing	PE 853 CM.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing. Identify the architecture, infrastructure and delivery models of cloud computing.	PO1, PO2, PO3, PO5, PO12, PSO1

	PE 853 CM.2	Explain the core issues of cloud computing such as security, privacy and interoperability.	PO1, PO2, PO5, PO6, PO7, PO8, PO12, PSO1
	PE 853 CM.3	illustrate the use of various cloud services available online	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PE 853 CM.4	Discuss system, network and storage virtualization and outline their role in enabling the cloud computing system model.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
	PE 853 CM.5	Analyze various cloud case studies	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
Road Safety Engineering	OE 801 CE.1	Understand the fundamentals of traffic safety analysis	PO1, PO2, PO7, PO8, PO12, PSO1
	OE 801 CE.2	Analyse Accident data	PO1, PO2, PO3, PO4, PO7, PO8, PO12, PSO1, PSO2
	OE 801 CE.3	Remember the concepts of road safety in urban transport	PO1, PO2, PO7, PO8, PO12, PSO1
	OE 801 CE.4	Apply crash reduction techniques	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO12, PSO1, PSO2
	OE 801 CE.5	Design of urban Infrastructure considering safety aspects.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO11, PO12, PSO1, PSO2
Project Work – II	PW 851 CM.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to real-world problems.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2
	PW 851 CM.2	Evaluate different solutions based on economic and technical feasibility	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO11, PO12, PSO1, PSO2
	PW 851 CM.3	Effectively plan a project and confidently perform all aspects of project management	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
	PW 851 CM.4	Demonstrate effective written and oral communication skills	PO6, PO7, PO8, PO9, PO10, PO11, PO12
	PW 851 CM.5	Analyse, apply and appreciate contemporary project management	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2

		tools and methodologies in Indian context.	

STANLEY COLLEGE OF ENGINEERING AND TECHNOLOGY FOR WOMEN (Autonomous)
Chapel Road, Abids, Hyderabad.
Department of Computer Science & Engineering

Institute Vision:

Empowering girl students through professional integrated with values and character to make an impact in the World.

Institute Mission:

M1: *Enabling quality engineering education for girl students to make them competent and confident to succeed in professional practice and advanced learning.*

M2: *Providing state-of-art-facilities and resources towards world class education.*

M3: *Integrating qualities like humanity, social values, ethics, leadership towards their contribution to society.*

Department Vision:

Empowering girl students with the contemporary knowledge in Computer Science and Engineering for their success in life.

Department Mission:

M1: To impart quality education for girl students to learn and practice various hardware and software platforms prevalent in industry.

M2: To achieve self-sustainability and overall development through Research and Development activities.

M3: To provide education for life by focusing on the inculcation of human & moral values through and honest and scientific approach

M4: To groom students with good attitude, team work and personality skills.

Programme Educational Objectives

PEO1: Our graduates shall have enhanced skills and contemporary knowledge in software and hardware technologies for professional excellence, towards successful employment, advanced learning and research.

PEO2: Our graduates shall have life-long learning attitude, innovation and creativity to master latest technologies, devise solutions for realistic and social issues in the society.

PEO3: Our graduates have good attitude and personality skills, ethical values, teamwork and leadership skill towards professionalism and ethical practices within the organization and the society.

Program Outcomes:

PO1: Engineering Knowledge: Apply knowledge of mathematics and science, with fundamentals of Computer Science & Engineering to be able to solve complex engineering problems related to CSE.

PO2:Problem Analysis: Identify, Formulate, review research literature and analyze complex engineering problems related to CSE and reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO3:Design/Development of solutions: Design solutions for complex engineering problems related to CSE 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.

PO4: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.

PO5:Modern Tool Usage: Create, Select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to computer science related complex engineering activities with an understanding of the limitations.

PO6: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 CSE professional engineering practice.

PO7:Environment and Sustainability: Understand the impact of the CSE professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of, and need for sustainable development.

PO8:Ethics: Apply Ethical Principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary Settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large such as able to comprehend and with write effective reports and design documentation, make effective presentations and give and receive clear instructions.

PO11:Project Management and Finance: Demonstrate knowledge and understanding of the engineering management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi disciplinary environments.

PO12: Life-Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning the broadest context of technological change.

Program Specific outcomes:

PSO1: Problem-Solving Skills: The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for the benefit of students.

PSO2: Design, Implement, Test and Evaluate a computer system, component or algorithm to meet desired needs and to solve a computational problem.

III - SEM (A.Y- 23-24)

CO, PO, PSO

Name of the Course/lab	UNIQUE CODE	COURSE OUTCOMES	PO's, PSO's
DIGITAL ELECTRONICS (SES302EC) (Global)	SES302EC.1	Understand the deign process of digital hardware, use Boolean algebra to minimize the logical expressions and optimize the implementation of logical functions.	PO1,PO2,PO4,PO12
	SES302EC.2	Understand the number representation and design combinational circuits like adders, MUX.	PO1,PO2,PO3,PO4,PO12
	SES302EC.3	Design combinational logic circuits using PLDs.	PO3,PO4
	SES302EC.4	Analyze sequential circuits using flip-flops and design registers, counters.	PO2,PO3,PO4,PO12
	SES302EC.5	Represent a sequential circuit using finite state machine and apply state minimization techniques to design FSM.	PO1,PO3,PO4,PO12
Discrete Mathematics (SES301CS) (Global)	SES301CS.1	Understand sets, functions, groups and relations.	PO1,PO2,PO4,PO8,PO9,PO10 ,PSO1
	SES301CS.2	Apply permutation and combination to handle different types of problems.	PO1,PO2,PO4,PO8,PO9,PO10 ,PO12,PSO1
	SES301CS.3	Apply propositional logic and predicate logic to solve logical statements.	PO1,PO2,PO4,PO5,PO8,PO9, PO10,PSO1
	SES301CS.4	Evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra.	PO1,PO2,PO8,PO9,PO10,PO1 2,PSO1
	SES301CS.5	Develop the given problem as graph networks and solve with techniques of graph theory.	PO1,PO2,PO3,PO4,PO6,PO8, PO9,PO10,PSO1

JAVA PROGRAMMING LAB (SPC311CS) (Global)	SPC311CS.1	Understand object-oriented programming fundamental and java programming fundamentals such as classes, inheritance, abstract classes, interfaces, packages.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC311CS.2	Apply exception handling, multithreading, input output basics and string handling.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC311CS.3	Design and apply collection framework.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC311CS.4	Design AWT and Swings concept.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC311CS.5	Apply input-output operations through IO package.	PO1,PO2,PO3,PO4,PO5,PSO1
Object Oriented Programming using JAVA (SPC301CS) (Global)	SPC301CS.1	Identify classes, objects, members of a class and the relationships needed to solve a problem.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC301CS.2	Use interfaces and creating user-defined packages.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC301CS.3	Utilize exception handling and Multithreading concepts to develop Java programs.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC301CS.4	Compose programs using the Java Collection API.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC301CS.5	Design a GUI using GUI components with the integration of event handling.	PO1,PO2,PO3,PO4,PO5,PSO1
MATHEMATICS (SBS 301 MT) (Global)	SBS301MT.1	Apply probability theory to solve practical problems. (Apply)	PO1,PO2,PO3,PO4,PO12,PSO 1
	SBS301MT.2	Apply various probability distributions to solve practical problems ,to estimate unknown parameters and apply the tests of hypothesis	PO1,PO2,PO3,PO4,PO12,PSO 1

	SBS301MT.3	Perform a regression analysis and to compute and interpret the coefficient of correlation.	PO1,PO2,PO3,PO4,PO12,PSO 1
	SBS301MT.4	Able to implement numerical methods for solving various engineering problems.	PO1,PO2,PO3,PO4,PO12,PSO 1
	SBS301MT.5	Understand the concepts of vector spaces, subspaces, bases, dimension	PO1,PO2,PO3,PO4,PO12,PSO 1
COMPUTER ORGANIZATION (SPC302 CS) (Global)	SPC302 CS.1	To understand various ways of representing data and data transfer through bus and registers.	PO1,PO2,PO3,PSO1
	SPC302 CS.2	To explore basic Computer organization and various computer instructions.	PO1,PO2,PO3,PSO1
	SPC302 CS.3	To understand Central processing unit, Pipelining Process and memory hierarchy	PO1,PO2,PO3,PSO1
	SPC302 CS.4	To analyze 8085 Architecture, Addressing modes and Programming techniques	PO1,PO2,PO3,PO4,PSO1
	SPC302 CS.5	To understand 8051 Microcontroller architecture, Instruction set, Addressing modes and design techniques	PO1,PO2,PO3,PO4,PSO1

IV SEM (A.Y- 23-24)

CO, PO, PSO

Name of the Course/lab	**UNIQUE CODE**	**COURSE OUTCOMES**	PO's, PSO's
AUTOMATA LANGUAGES AND COMPUTATIOM(SPC401CS) (Global)	SPC401CS.1	Gain the knowledge of basic kinds of finite automata and their capabilities.	PO1,,PO2,PO3,PO4,PO9,PO12,PSO1
	SPC401CS.2	Understand regular and context-free languages	PO1,,PO2,PO3,PO4,PO9,PO12,PSO1
	SPC401CS.3	Gain the knowledge to analyze regular expressions and grammars	PO1,,PO2,PO3,PO4,PO9,PO12,PSO1
	SPC401CS.4	Design finite automata, push down automata.	PO1,,PO2,PO3,PO4,PO9,PO12,PSO1
	SPC401CS.5	Constructing the Turing machine for Recursive languages.	PO1,,PO2,PO3,PO4,PO9,PO12,PSO1
ARTIFICAL INTELLIGENCE (SPC402CS) (Global)	SPC402CS.1	Formalize a problem in the language/framework of different AI methods.	PO1,,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PSO1
	SPC402CS.2	Illustrate basic principles of AI in solutions that require problem solving, search, inference.	PO1,,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PSO1
	SPC402CS.3	Demonstrate understanding of steps involved in building of intelligent agents, expert systems, Bayesian networks.	PO1,,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PSO1
	SPC402CS.4	Differentiate between learning paradigms to be applied for an application.	PO1,,PO2,PO3,PO4,PO5,PO8,PO9,PSO1
DATABASE MANAGEMENT SYSTEM (SPC403CS) (Global)	SPC403CS.1	Understand the role of database management system in an organization and learn the database concepts	PO1,PO2,PO3,PO5,PO12,PSO1
	SPC403CS.2	Construct database queries	PO1,PO2,PO3,PO5,PO9,PO12,P

		using relational algebra and SQL	SO1
	SPC403CS.3	Design databases using data modeling and Logical database design techniques	PO1,PO2,PO3,PO4,PO5,PO9,PO12,PSO1
	SPC403CS.4	Evaluating the indexing, hashing techniques and transaction management	PO1,PO2,PO3,PO4,PO5,PO9,PO12,PSO1
	SPC403CS.5	Understand the concept of a database transaction and related concurrent, recovery facilities.	PO1,PO2,PO3,PO4,PO5,PO9,PO12,PSO1
OPERATINGSYSTEMS(SPC404CS) (Global)	SPC404CS.1	Identify System calls and evaluate process scheduling criteria of OS.	PO1,PO2,PO3,PSO1
	SPC404CS.2	Develop procedures for process synchronization of an OS.	PO1,PO2,PO3,PO4,PSO1
	SPC404CS.3	Demonstrate the concepts of memory management and of disk management.	PO1,PO2,PO3,PO4,PSO1
	SPC404CS.4	Solveissuesrelatedtofilesystemi nterfaceandimplementation,I/O systems.	PO1,PO2,PO3,PSO1
	SPC404CS.5	Describe System model for deadlock, Methods for handling deadlocks.	PO1,PO2,PO3,PO4,PSO1
DATABASE MANAGEMENT SYSTEM LAB (SPC413CS) (Global)	SPC413CS.1	Ability to Implement the basic knowledge of SQL queries and relational databases.	PO1,PO2,PO3,PSO1,PSO2
	SPC413CS.2	Ability to Design and implement a database schema for a given problem.	PO1,PO2,PO3,PSO1,PSO2
	SPC413CS.3	Ability to Implement different constraints for refining of the databases.	PO1,PO2,PO3,PSO1,PSO2

	SPC413CS.4	Ability to Implement various triggers, procedures and cursors using PL/SQL.	PO1,PO2,PO3,PSO1,PSO2
	SPC413CS.5	Ability to Generate forms and reports.	PO1,PO2,PO3,PSO1,PSO2
WEBTECHNOLOGY & APPLICATION LAB(SPC415CS) (Global)	SPC415CS.1	Acquire the knowledge to design layouts.	PO1,PO2,PO3,PO5,PO12,PSO1
	SPC415CS.2	to understand the BOOTSTRAP for designing applications.	PO1,PO2,PO3,PO5,PO12,PSO1
	SPC415CS.3	to understand the concepts of JAVA script and implement dynamic forms	PO1,PO2,PO3,PO5,PO12,PSO1
	SPC415CS.4	To design and develop games using HOOKS.	PO1,PO2,PO3,PO5,PO8,PO12,PSO1
	SPC415CS.5	To implement a full stack applications.	PO1,PO2,PO3,PO5,PO8,PO12,PSO1

BE III YEAR SEM V AY: 2023-24

CO, PO, PSO

Name of the Course/lab	UNIQUE CODE	COURSE OUTCOMES	PO's, PSO's
DESIGNA ND ANALYSIS OF ALGORITHMS (SPC501CS) (Global)	SPC501CS.1	Solve complexities of algorithms written in pseudo code notation using asymptotic notation	PO1,PO2,PO3,PO12,PSO1
	SPC501CS.2	Analyze the time and space complexity of algorithms	PO1,PO2,PO4,PO12,PSO1
	SPC501CS.3	Apply suitable algorithm design paradigm such as Branch & Bound, Greedy etc. for the given problem.	PO1,PO2,PO3,PO12,PSO1
	SPC501CS.4	Design algorithms for various computing problems	PO1,PO2,PO3,PO12,PSO1
	SPC501CS.5	Analyze various string & Pattern Matching and other algorithms.	PO1,PO2,PO3,PO12,PSO1
DATA COMMUNICATIONAND COMPUTER NETWORKS(SPC502CS) (Global)	SPC502CS.1	Identify various networking components.	PO1,PO2,PO3,PO4,PO12,PSO1
	SPC502CS.2	Explain the function of each layer of OSI and trace the flow of information from one node to another node in the network.	PO1,PO2,PO3,PO12,PSO1
	SPC502CS.3	Understand the principles of IP addressing and internet routing.	PO1,PO2,PO3,PO4,PO12,PSO1
	SPC502CS.4	Describe the working of various networked applications such as DNS, mail, file transfer and WWW.	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO12,PSO1
	SPC502CS.5	Implement client-server socket-based networked applications.	PO1,PO2,PO3,PO4,PO5,PO9,PO12,PSO1
COMPILER DESIGN (SPC503CS) (Global)	SPC503CS.1	Understand the different phases of compiler	PO1,PO2,PO3,PO4,PO12,PSO1
	SPC503CS.2	Develop the lexical Analyzer for a given syntax	PO1,PO2,PO3,PO4,PO12,PSO1
	SPC503CS.3	Design top-down and bottom-up parser for a given syntax	PO1,PO2,PO3,PO4,PO12,PSO1
	SPC503CS.4	Develop syntax directed translation schemes	PO1,PO2,PO3,PO4,PO12,PSO1

	SPC503CS.5	Develop algorithms for generating intermediate code.	PO1,PO2,PO3,PO4,PO12,PSO1
DATA SCIENCE USING R (SPE501-2CS) (Global)	SPE501-2CS.1	Collect the data from different sources.	PO1,PO4,PO9,PSO1
	SPE501-2CS.2	Analyze and Extract Statistical Inferences from data.	PO1,PO2,PO4,PO5,PO9,PO10,PSO1
	SPE501-2CS.3	Able to predict and visualize the data.	PO1,PO2,PO5,PO9,PO10,PSO1
	SPE501-2CS.4	Prepare the data for training and testing.	PO1,PO3,PO5,PO9,PSO1
	SPE501-2CS.5	Apply data science concepts in real world problems.	PO1,PO6,PO10,PSO1
NUMBER THEORY AND CRYPTOGRAPHY(SPE501-5CS) (Global)	SPE501-5CS.1	To understand fundamental number-theoretic algorithms such as the Euclidean algorithm, the Chinese Remainder algorithm, binary powering, and algorithms for integer arithmetic.	PO1,PO2,PO5,PO9,PO12,PSO1
	SPE501-5CS.2	Explain fundamental algorithms for symmetric key and public-key cryptography.	PO1,PO2,PO3,PO5,PO9,PO12,PSO1
	SPE501-5CS.3	Define System Security and Web Security Protocols.	PO1,PO2,PO3,PO5,PO9,PO12,PSO1
	SPE501-5CS.4	Explain about Hash function and digital signature.	PO1,PO2,PO3,PO5,PO9,PO12,PSO1
	SPE501-5CS.5	Recognize the working of the smart cards and applications and know the basics of Quantum computing.	PO1,PO2,PO3,PO5,PO9,PO12,PSO1
DESIGN AND ANALYSIS OF ALGORITHMS LAB (SPC511CS) (Global)	SPC511CS.1	Implement divide & conquer based sorting algorithms and analyze performance of algorithms	PO1,PO2,PO3,PO4,PO5,PO9,PO12,PSO1,PSO2
	SPC511CS.2	Implement optimization algorithms using greedy, dynamic programming for specific applications.	PO1,PO2,PO3,PO5,PO9,PO12,PSO1,PSO2
	SPC511CS.3	Solve graph problems using algorithm design strategies such	PO1,PO2,PO3,PO5,PO9,PO12,PSO1,PSO2

		as greedy, dynamic programming etc.	
	SPC511CS.4	Test backtracking strategy for solving problems with constraints	PO1,PO2,PO3,PO5,PO9,PO12,PSO1,PSO2
	SPC511CS.5	Design algorithms for various computing problems	PO1,PO2,PO3,PO5,PO9,PO12,PSO1,PSO2
DATA COMMUNICATIONAND COMPUTER NETWORKS LAB (SPC512CS) (Global)	SPC512CS.1	Implement various protocols using TCP and UDP.	PO1,PO3,PO5,PSO1
	SPC512CS.2	Program using sockets.	PO1,PO3,PO5,PSO1
	SPC512CS.3	Use simulation tools to analyze the performance of various network protocols.	PO1,PO3,PO5,PSO1
	SPC512CS.4	Implement and Analyze various routing algorithms.	PO1,PO3,PO5,PSO1
COMPILER DESIGN LAB(SPC513CS) (Global)	SPC513CS.1	The Students should be able to design DFA by using NFA	PO1,PO2,PO3,PO5,PO11,PO12 PSO1
	SPC513CS.2	The Students should be able to design the lex programs by using LEX tool	PO1,PO2,PO3,PO5,PO11,PO12 PSO1
	SPC513CS.3	The Students should be able to design the Bottom up parser with and without using Tool	PO1,PO2,PO3,PO5,PO11,PO12 PSO1
	SPC513CS.4	The Students should be able to implement the Three Address Code by using YACC tool	PO1,PO2,PO3,PO5,PO11,PO12 PSO1
	SPC513CS.5	The Students should be able to implement the target code	PO1,PO2,PO3,PO5,PO11,PO12 PSO1

BE III YEAR SEM VI A.Y: 2023-24

CO, PO, PSO

NAME OF THE COURSE/LAB	UNIQUE CODE	COURSE OUTCOMES	PO'S,PSO'
Managerial Economics and Financial accounting (Global)	SHS601DM.1	Learner is equipped with knowledge of demand and demand elasticity for a product	PO1,PO2,PO4,PO11,PSO1
	SHS601DM.2	To understand input output cost relationships, and estimation of least cost combination of inputs	PO1,PO2,PO4,PO11,PSO1
	SHS601DM.3	To understand nature of markets and price output determination under various market conditions.	PO1,PO2,PO4,PO11,PSO1
	SHS601DM.4	To prepare financial statements and usage of accounting tools for analysis	PO1,PO2,PO4,PO11,PSO1
	SHS601DM.5	To evaluate various investment project proposals with help of capital budgeting techniques.	PO1,PO2,PO4,PO11,PSO1
Data mining (Global)	SPC601CS.1	Organize and prepare the data needed for data mining processing using pre processing techniques.	PO1,PO2,PO3,PO4,PO11,PO12,PSO1
	SPC601CS .2	Implement data mining methods like classification and clustering on a given data set	PO1,PO2,PO3,PO4,PO11,PO12,PSO1

	SPC601CS .3	Apply the metrics to measure the performance of data mining algorithms	PO1,PO2,PO3,PO4,PO11,PO12,PSO1
	SPC601CS .4	Understanding the importance of data mining applications and using the approach o trend for the realistic strategy.	PO1,PO2,PO3,PO4,PO11,PO12,PSO1
	SPC601CS .5	Describe complex data types with time series, symbolic sequences and social mining.	PO1,PO2,PO3,PO4,PO11,PO12,PSO1
Software Engineering (Global)	SPC602CS.1	Acquired working knowledge of alternative approaches for each phase of software development.	PO1,PO2,PO3,PO6,PO9,PO10,PO11,PO12,PSO1
	SPC602CS.2	Judge an appropriate process models assessing software project attributes and analyze requirement for project development.	PO1,PO2,PO3,PO4,PO6,PO8,PO9,PO10,PO11,PO12,PSO1
	SPC602CS.3	Creation of visual models to describe non algorithmic solutions for projects using design principles.	PO1,PO2,PO3,PO6,PO9,PO10,PO11,PO12,PSO1
	SPC602CS.4	Acquire skills for architecting a complete software project by identifying solutions for recurring problems.	PO1,PO2,PO3,PO6,PO9,PO10,PO11,PO12,PSO1
	SPC602CS.5	Concede product quality through testing techniques employing	PO1,PO2,PO3,PO6,PO9,PO10,PO11,PO12,PSO1

		appropriate metrics by understanding development of significant software system.	
Distributed systems (Global)	SPC603CS.1	Analyze and understand asymptomatic performance of an algorithm and basic data structures.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	SPC603CS.2	Apply the divide and conquer Brute Force techniques to a given problem.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	SPC603CS.3	Implement greedy methods and dynamic programming techniques to real world problems.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	SPC603CS.4	Relate the back tracking and branch and bounds techniques to real world problems.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	SPC603CS.5	Evaluate NP Hard and NP complete of algorithms.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
Data mining lab (Global)	SPC611CS.1	Ability to understand the various kinds of tools	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC611CS.2	Demonstrate the classification and clustering in large data sets	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC611CS.3	Ability to add mining algorithms as a component to the existing tools.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC611CS.4	Ability to apply mining techniques for realistic data.	PO1,PO2,PO3,PO4,PO5,PSO1

Software Engineering lab with mini project (Local)	SPC612CS.1	Analyze and design software requirements in an efficient	PO1,PO2,PO3,PO4,PO6,PO9,PO10,PO12,PSO1
	SPC612CS.2	Use open source case tools to develop software	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO10,PO11,PO12,PSO1
	SPC612CS.3	Implement design, debug and test the code.	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO10,PO11,PO12,PSO1
Distributed systems lab (Global)	SPC613CS.1	Write programs to communicate data between 2 hosts.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC613CS.2	Configure NFS	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC613CS.3	To implement inter process communication and remote communication.	PO1,PO2,PO3,PO4,PO5,PSO1
	SPC613CS.4	Use distributed data processing frameworks.	PO1,PO2,PO3,PO4,PO5,PSO1
Technical seminar 1 (Local)	STS611CS.1	Develop the habit of referencing journals for literature review.	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO11,PO12,PSO1
	STS611CS.2	Understand the gist of research paper.	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO11,PO12,PSO1
	STS611CS.5	Write the documentation in standard format.	
Internship 2 (Loacl)	SPW611CS.1	Get practical experience of software design and development and coding practices.	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11,PO12,PSO1
	SPW611CS.2	Gain working practices within industrial R and D	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11,PO12,PSO1
	SPW611CS.3	Prepare reports and other relevant	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11,PO12,PSO1

		documentation.	

VII SEM (A.Y- 23-24)

CO, PO, PSO

Name of the Course/lab	UNIQUE CODE	COURSE OUTCOMES	PO'S,PSO'S
INFORMATION RETRIEVAL SYSTEM (PE735CS) (Global)	PE 735.1 CS	Understand various functionalities and capabilities of Information Retrieval System.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO12,PSO1
	PE 735.2 CS	Gain knowledge on cataloging and data structure methodology for IRS.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO12,PSO1
	PE 735.3 CS	Differentiate various clustering algorithms and indexing.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO12,PSO1
	PE 735.4 CS	Differentiate various user search techniques and system search techniques	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO12,PSO1
	PE 735.5 CS	Understand the concepts of information visualization and text search.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO12,PSO1
INFORMATION SECURITY (PE746CS) (Global)	PE746CS.1	Define the steps in Security Systems development life cycle (SecSDLC). Understand the common threats and attack to information systems.	PO1,PO2,PO3,PO4,PO9,PO10,PSO1
	PE746CS.2	Understand the legal and ethical issues of information technology Identify security needs using risk management and choose the appropriate risk control strategy based on business needs.	PO1,PO2,PO3,PO4,PO6,PO8,PO10,PO11,PSO1
	PE746CS.3	Use the basic knowledge of security frameworks in preparing security blue print for the organization. Usage	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO10,PO11,PO12,PSO1

		of reactive solutions, network perimeter solution tools such as firewalls, host solutions such as antivirus software and Intrusion Detection techniques and knowledge of ethical hacking tools.	
	PE746CS.4	Understand and apply various cryptographic algorithms and to create their own algorithm. Use ethical hacking tools to study attack patterns and cryptography and secure communication protocols.	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO10,PO12,PSO1
	PE746CS.5	Understand the technical and non-technical aspects of security project implementation and accreditation. Design and prepare the industry recognized cyber security certifications and able to maintain the information security.	PO1,PO2,PO3,PO4,PO5,PO9,PO10,PO12,PSO1
FUNDAMENTALS OF IOT(OE701EC) (Global)	OE701EC.1	Understand the various applications of IoT and other enabling technologies	PO1,PO6,PO7,PO10,PO12,PSO1
	OE701EC.2	Comprehend various protocols and communication technologies used in IoT	PO1,PO6,PO7,PO10,PO12,PSO1
	OE701EC.3	Design simple IoT systems with requisite hardware and C programming software	PO1,PO2,PO3,PO6,PO7,PO9,PO10,PO12,PSO1
	OE701EC.4	Understand the relevance of cloud computing and data analytics to IoT	PO1,PO2,PO3,PO5,PO6,PO7,PO9,PO10,PO12,PSO1
	OE701EC.5	Comprehend the business model of IoT from developing a prototype to launching a product.	PO1,PO2,PO3,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12,PSO1

DISTRIBUTED SYSTEMS (PC 701CS) (Global)	PC 701CS.1	List the principles of distributed systems and describe the problems and challenges associated with these principles.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	PC 701CS.2	To know about interposes communication and remote communication.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	PC 701CS.3	Understand Distributed Computing techniques, Synchronous and Processes.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	PC 701CS.4	Understand Distributed File Systems Apply Distributed web-based system. Understand the importance of security in distributed systems.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
	PC 701CS.5	Student will be able to know distributed service oriented architecture and to know about emerging trends in distributed computing.	PO1,PO2,PO3,PO4,PO5,PO12,PSO1
DISTRIBUTED SYSTEMS LAB(PC 751CS) (Global)	PC 751CS.1	Write programs that communicate data between two hosts	PO1,PO2,PO3,PO4,PO5,PSO1
	PC 751CS.2	Configure NFS	PO1,PO2,PO3,PO4,PO5,PSO1
	PC 751CS.3	To implement inter process communication and remote communication.	PO1,PO2,PO3,PO4,PO5,PSO1
	PC 751CS.4	Use distributed data processing frameworks and mobile application tool kits	PO1,PO2,PO3,PO4,PO5,PSO1
WEB TECHNOLOGY LAB(PC 752 CS .1) (Global)	PC 752 CS .1	Analyze a web page and identify its elements and attributes.	PO1,PO2,PO3,PO8,PO9,PO12,PSO1
	PC 752 CS .2	Apply Cascading Style Sheets web pages for a good aesthetic sense of design.	PO1,PO2,PO3,PO5,PO9,PO12,PSO1
	PC 752 CS .3	Build dynamic web pages using JavaScript.	PO1,PO2,PO3,PO5,PO12,PSO1

	PC 752 CS .4	Develop server-side scripting using Middleware Technologies for various application scenarios	PO1,PO2,PO3,PO5,PO12,PSO1
	PC 752 CS .5	Facilitate back-end Database communication for users via Middleware Technologies.	PO1,PO2,PO3,PO5,PO8,PO9,PO12,PSO1

BE IV YEAR SEM VIII AY: 2023-24

CO, PO, PSO

Name of the Course/lab	UNIQUE CODE	COURSE OUTCOMES	PO'S,PSO'S
ROAD SAFETY ENGINEERING(OE603CE) (National)	OE603CE.1CS	Understand the fundamentals of traffic safety analysis.	PO1,PO2,PO3,PO4,PO5,PO6,PO7PO8,PO9,PO10,PO11,PO12,PSO1
	OE603CE.2	Analyze accident data.	PO1,PO2,PO3,PO4,PO5,PO6,PO7PO8,PO9,PO10,PO11,PO12,PSO1
	OE603CE.3	Remember the concepts of road safety in urban transport.	PO1,PO2,PO3,PO4,PO5,PO6,PO7PO8,PO9,PO10,PO11,PO12,PSO1
	OE603CE.4	Apply crash reduction techniques.	PO1,PO2,PO3,PO4,PO5,PO6,PO7PO8,PO9,PO10,PO11,PO12,PSO1
	OE603CE.5	Design of Urban infrastructure considering safety aspects.	PO1,PO2,PO3,PO4,PO5,PO6,PO7PO8,PO9,PO10,PO11,PO12,PSO1
Intellectual Property Rights(PE 856 CS) (National)	PE 856 CS.1	Classify the intellectual property rights to provide the legal rights, patents, trademarks, copyrights and trade secrets	PO1,PO2,PO3,PO7,PSO1
	PE 856 CS.2	Relate the World Intellectual Property organization to protect intellectual property rules and policies..	PO2,PO7,PSO1
	PE 856 CS.3	Identify the	PO1,PO3,PO7,PSO1

		world trade organization agreements for trade related intellectual properties rights and investments.	
	PE 856 CS.4	Outline the importance of intellectual property in organizations of different industrial sectors for the purpose of product and technology development.	PO3,PO7,PSO1
	PE 856 CS.5	Infer the geographical Indications of international development of law for policy and legal issues.	PO1,PO2,PO7,PSO1

STANLEY COLLEGE OF ENGINEERING ANDTECHNOLOGY FOR WOMEN (AUTONOMOUS)
Hyderabad – 500 001
(Affiliated to Osmania University & Approved by AICTE)

(All eligible UG Courses are accredited by NBA & Accredited by NAAC with 'A' Grade)

Department of Electronics and Communication Engineering

Vision of the Institute

Empowering girl students through professional education integrated with values and character to make an impact in the World.

Mission of the Institute

M1: Providing quality engineering education for girl students to make them competent and confident to succeed in professional practice and advanced learning.

M2: Establish state-of-art-facilities and resources to facilitate world class education.

M3: Integrating qualities like humanity, social values, ethics, leadership in order to encourage contribution to society.

Vision of the Department

Empowering girl students with the contemporary knowledge in Electronics and Communication Engineering for their success in life.

Mission of the Department

M1: To impart rationalized and high quality technical education and knowledge.

M2: To achieve self-sustainability and overall development through Research and Consultancy activities.

M3: To provide education for life by focusing on the inculcation of human and moral values through an honest and scientific approach

M4: To groom students with good attitude and personality skills.

Program Educational Objectives:

PEO-1: Graduate shall have skills to excel in professional career and in applied research through innovative design by acquiring the knowledge in Electronics and Communication Engineering principles

PEO-2: Graduate shall pursue higher education and participate in research and development activities or entrepreneurship to integrate engineering work in the environmental, ethical and broader societal contexts.

PEO-3: Graduate shall exhibit effective communication, good team building and leadership qualities to design socially accepted and economically feasible solutions through multidisciplinary and interdisciplinary approaches for analysis of real-life problems.

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Department of Electronics and Communication Engineering

Program Outcomes:

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 analyze 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 & sustainability:** Understand the impact of professional engineering solutions in 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 the engineering 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:

PSO1: Appertain to Communication and Automation Principles: To apply principles of Communication Engineering and Signal Processing both in private and public organizations.

PSO2: Adaptability to Productive Environment: To be well equipped with Management skills, interdisciplinary and modern technologies.

S.No	COURSE	COURSE CODE	COs	DESCRIPTION
1	ELECTRONIC DEVICES AND CIRCUITS	SPC301EC	SPC301EC.1	Interpret the characteristics of diodes using models for analysis of various applications.(BLT 4 &5)
			SPC301EC.2	Compare performance characteristics of various filters.(BLT 5).
			SPC301EC.3	Discriminate the BJT configurations and design a stable biasing circuit.(BLT 4 & 6)
			SPC301EC.4	Analyse and design BJT amplifiers.(BLT 4)
			SPC301EC.5	Distinguish the operations of FETs & MOSFETs.(BLT 4)
2	ELECTROMAGNETIC THEORY AND TRANSMISSION LINES	SPC302EC	SPC302EC.1	Apply knowledge of physics and mathematics to solve problems related to static electricity, and magnetism (BLT 3)
			SPC302EC.2	Apply knowledge of physics and mathematics to solve problems related to time varying electromagnetic fields (BLT 3)
			SPC302EC.3	Analyze the propagation and polarization characteristics of an EM signal across various media (BLT 4)
			SPC302EC.4	Interpret basic design of transmission lines (BLT 4)
			SPC302EC.5	Evaluate impedance characteristics at any point on the transmission line and determine transmission line parameters using Smith chart (BLT 4)
3	DIGITAL SYAYTEM DESIGN	SPC 303 EC	SPC303 EC.1	Identify and convert different number systems
			SPC303 EC.2	Simplify Boolean equations using K-Map and tabular method
			SPC303 EC.3	Design and analyze combinational logic circuits
			SPC303 EC.4	Design and analyze sequential logic Circuits
			SPC303 EC.5	Apply Verilog HDL & appropriate EDA tools for digital logic design and simulation
4	MANAGERIAL ECONOMICS AND ACCOUNTANCY	SHS301DM	SHS301DM.1	To Relate Economics With Other Sciences.
			SHS301DM.2	To be able to forecast Demand
			SHS301DM.3	To be able to Distinguish Cost Concepts
			SHS301DM.4	To Prepare Final Accounts And To Analyze The Financial Statements
			SHS301DM.5	To practice and apply Capital Budgeting
5	PROBABILITY THEORY AND STOCHASTIC PROCESS	SBS 303 MT	SBS303 MT.1	Understand and use the concepts of probability and random variables. (BLT 1)
			SBS303 MT.2	Choose appropriate distribution functions for determination of probabilistic characteristics. (BLT 3)
			SBS303 MT.3	Illustrate the concepts of statistics and linear regression. (BLT 4)
			SBS303 MT.4	Apply stochastic processes and use their temporal characteristics. (BLT 4)
			SBS303 MT.5	Explain and apply spectral characteristics of stochastic processes. (BLT 4)
6	ELECTRONIC DEVICES LAB	SPC 311 EC	SPC311 EC.1	Understand the characteristics of diodes. (BLT 2)
			SPC311 EC.2	Analyze the characteristics of BJT in different configurations. (BLT 4)
			SPC311 EC.3	Understand biasing techniques for BJT. (BLT 2)
			SPC311 EC.4	Analyse the frequency response of BJT and FET. (BLT 4)
			SPC311 EC.5	Perform simulation of rectifier and amplifier circuits. (BLT 6)
7	Digital System Design lab	SPC 312 EC	SPC312EC.1	To design and verify the Combinational logic circuits
			SPC312EC.2	To design and verify Sequential logic circuits

S.No	COURSE	COURSE CODE	COs	DESCRIPTION
1	Digital Signal Processing	SPC501EC	SPC501EC.1	Apply the knowledge of FFT Algorithms for computation of DFT (BTL-3 Applying)
			SPC501EC.2	Analyze and Design of FIR filters using various methods. (BTL4- Analyzing (BTL-4 Analyzing)
			SPC501EC.3	Analyze and Design IIR filters using various methods. BTL4- Analyzing (BTL-4 Analyzing)
			SPC501EC.4	Interpret the typical characteristics and apply decimation and interpolation concepts for the design of sampling rate converters fo real-time DSP Multirate systems (BTL 5- Evaluating)
			SPC501EC.5	Acquaintance to understand TMS320C67XX DSP processors for the design of digital filters (BTL2- Understanding)
2	Analog & Digital Communication	SPC502EC	SPC502EC. 1	Analyze and design of various amplitude & angle modulation and demodulation techniques. [BLT 1]
			SPC502EC. 2	Attain the knowledge about AM, FM Transmitters and Receivers.[BLT 2]
			SPC502EC. 3	Understand and compare pulse analog and digital modulation techniques. [BLT 3]
			SPC502EC. 4	Understand the concepts of Digital Modulation Techniques[BLT 1].
			SPC502EC. 5	Understand generation of PN sequence and analyze the performance of Spread Spectrum Communication systems.[BLT2]
3	Automatic Control Systems	SPC503EC	SPC503EC.1	Represent a given control system into equivalent block diagram and transfer function (BLT 3)
			SPC503EC.2	Analyze system stability using time domain techniques (BLT 3)
			SPC503EC.3	Analyze system stability using frequency domain techniques (BLT 4)
			SPC503EC.4	Design a digital control system in the discrete time domain (BLT 4)
			SPC503EC.5	Analyze a control system in the state space representation (BLT 2).
4	(PE-I) Real Time Operating Systems	SPE501EC	SPE501EC.1	Analyze various scheduling algorithms related to RTOS(BLT 4)
			SPE501EC.2	Analyze various scheduling algorithms related to RTOS(BLT 4)
			SPE501EC.3	Summarize the Inter process communication tools.(BLT 2)
			SPE501EC.4	Understand the elementary concepts of Vx Works. (BLT 2)
			SPE501EC.5	Enumerate the fundamental concepts of UNIX operating system. (BLT 1)
5	(PE-I) Satellite Communication and RADAR Engineering	SPE505EC	SPE505EC.1	Understand the orbital characteristics of satellite communication. (BT L2)
			SPE505EC.2	Analyze satellite sub systems and link design. (BT L4)
			SPE505EC.3	Interpret the basics of RADAR system and will able to develop radar range equation for enhanced range estimation for accurate prediction.(BT L2)
			SPE505EC.4	Distinguish various types of radars such as CW, FMCW radars, and MTI radars. (BT L2)
			SPE505EC.5	Analyze the tracking, search radars and various radar displays.(BT L4)
6	(OE-I) OOP using JAVA	SOE604CM	SOE604CM.1	To introduce fundamental object-oriented concepts of Java programming Language such as classes, inheritance, packages and interfaces
			SOE604CM.2	To introduce concepts of exception handling and multi-threading
			SOE604CM.3	To use various classes and interfaces in java collection framework and utility classes
			SOE604CM.4	To understand the concepts of GUI programming using AWT controls
			SOE604CM.5	To introduce Java I/O streams and serialization
7		SAC903ME	SAC903ME.1	To understand the basic concepts and applications of Thermodynamics and working principle of I.C engines
			SAC903ME.2	To understand the concept of Heat transfer & the working principle of Heat exchangers

S.NO	COURSE	COURSE CODE	COs	DESCRIPTION
1	Microwave Theory Techniques	PC416EC	PC416EC.1	Define parameters like waves, wave propagation, wave attenuation and wave impedance [BLT1]
			PC416EC.2	Describing the wave guides, cavity resonators [BLT1]
			PC416EC.3	Illustrate and analyse the MW components-E, H, EH plane tees [BLT2]
			PC416EC.4	Analyse and categorize the microwave tubes [BLT4]
			PC416EC.5	Summarize the Microwave solid state devices and strip lines [BLT2]
2	Embedded System Design	PE510EC	PE510EC.1	Classify different types of embedded systems with hardware and software components and discuss the challenges in design (BLT 2)
			PE510EC.2	Enumerate the instruction set of ARM Processor by studying the architecture of ARMcore (BLT 2)
			PE510EC.3	Acquire knowledge on the serial and parallel communication protocols. (BLT3)
			PE510EC.4	Apply modern engineering tools necessary for integrating software and hardware components in embedded system design(BLT3)
			PE510EC.5	Summarize different tools and techniques for embedded hardware debugging.(BLT2)
3	Cellular and Mobile Communication	PE515EC	PE515EC.1	Understand the method of selection and reuse of a set of frequency channels, Base station requirement.. BLT1
			PE515EC.2	Appreciate and understand the methods of electromagnetic wave propagation in cellular communication. BLT2
			PE515EC.3	Identify different a methods of mobile access technologies and which of them suitable for mobile cellular solutions. BLT2
			PE515EC.4	Explain features, authentication, operational details of GSM and CDMA mobile cellular system.BLT4
			PE515EC.5	Understand the development and limitation of the preliminary and advanced generation of mobile systems and the present trends BLT3
4	Principles of Python	OE702CS	OE702CS.1	To learn how to take inputs from the user and print output use of variables, keywords,Operators in python programming
			OE702CS.2	To learn how to write control flow statements and use of loops statements in python programming
			OE702CS.3	To learn how to define and call functions and use of function methods in python programs.
			OE702CS.4	To learn how to create and access strings and how to read and write csv files .
			OE702CS.5	To learn how to use lists, tuples and dictionaries in python programs
5	Embedded Systems and IoT Lab	PC406EC	PC406EC.1	Familiarize with the usage of Keil software tool and program C/C++
			PC406EC.2	Interface a Temperature sensor, Buzzer, Stepper Motor on ARM Cortex-M Processor.
			PC406EC.3	Design the Digital logic circuits in various modelling style using Embedded C/c++
			PC406EC.4	Familiarize with the usage of IDE tools and programs using C/C++ on IDE software.
			PC406EC.5	Interface the sensors with Arduino/Raspberry pi boards on IDE tool
6	Microwave Lab	PC4161EC	PC4161EC.1	Analyze frequency, Wave length, SWR and Impedance for Reflex Klystron Oscillator by using its equation.
			PC4161EC.2	Evaluate of mode characteristics of Reflex klystron and V-I Characteristics of Gunn diode
			PC4161EC.3	Analyze of the characteristics of Circulator, Isolator, Directional Coupler, Tees like (Magic tee, E & H plane tees) using the Scattering parameters
			PC4161EC.4	Generate the Radiation pattern of different antennas like Yagi-Uda and Horn Antenna and measure the gain of the antennas

S.No	COURSE	COURSE CODE	COs	DESCRIPTION
1	Analog Electronic Circuits	SPC401EC	SPC401EC.1	Analyze frequency response of Amplifiers.(BLT 4)
			SPC401EC.2	Compare and analyse the types of feedback amplifiers.((BLT 4)
			SPC401EC.3	Design and analyze oscillators at audio and radio frequencies. (BLT 5)
			SPC401EC.4	Distinguish and design various classes of power amplifiers.. (BLT 4)
			SPC401EC.5	Compare the performance of single, double and stagger tuned amplifiers. (BLT 4)
2	Signals &Systems	SPC402EC	SPC402EC.1	Define and differentiate types of signals and systems in continuous and discrete time domains (BLT-1 Remember)
			SPC402EC.2	Explain the properties of Fourier transform for continuous time signals (BLT-2 Understand)
			SPC402EC.3	Apply continuous time Fourier Transform and Laplace Transform for analysis of system behavior. (BLT-3 Apply)
			SPC402EC.4	Perform Fourier analysis of discrete time signals (BLT-4 Analyze)
			SPC402EC.5	Construct Z-transforms for discrete time signals to solve difference equations (BLT-6 Create)
3	Integrated Circuits and Applications	SPC403EC	SPC403EC.1	Construct different linear and non linear networks and analyse their response to different input signals
			SPC403EC.2	Design and analyze multi vibrators and sweep circuits using transistors
			SPC403EC.3	Analyze DC and AC characteristics for Single/Dual input Balanced/Unbalanced output configurations using BJTs
			SPC403EC.4	Understand the applications of OPAMP
			SPC403EC.5	Experiment with the applications of 555 timer, D/A and A/D converter types
4	Computer Organization and Architecture	SPC404EC	SPC404EC.1	Perform mathematical operations on fixed and floating point digital data(BLT 4)
			SPC404EC.2	Illustrate the operation of a digital computer. (BLT 2)
			SPC404EC.3	Understand I/O interfacing of a computer. (BLT 1)
			SPC404EC.4	Interface microprocessor with memory devices. (BLT 4)
			SPC404EC.5	Understand latest trends in microprocessors. (BLT 4)
5	Antennas and Wave Propagation	SPC405EC	SPC405EC.1	Understand the basic principles of antennas and learn the antenna terminology. (BLT 3)
			SPC405EC.2	Apply the design considerations of different types of wire antennas and make proficient in analytical skills for understanding practical antennas. (BLT 3)
			SPC405EC.3	Analyze the non-resonant antennas for various ranges of frequencies and get updated with latest developments in the smart antennas. (BLT4
			SPC405EC.4	Apply the principles and design considerations of antennas as well as antenna arrays, measure standard antenna parameters and obtain awareness about radiation hazards. (BLT 2)
			SPC405EC.5	Understand and compare various modes of radio wave propagation used for different applications. (BLT 5)
6	Analog Electronic Circuits Lab	SPC411EC	SPC411EC.1	Calculate gain and bandwidth of BJT and JFET amplifiers (BLT 4)
			SPC411EC.2	Design feedback circuits (BLT 5)
			SPC411EC.3	Design oscillator circuits transistor regulator circuits. (BLT 5)
			SPC411EC.4	Design and analyze power amplifier circuits. (BLT 4)

S.NO	COURSE	COURSE CODE	COs	DESCRIPTION
1	Microcontrollers	SPC601EC	SPC 601EC.1	To familiarize architecture and programming of 8051 microcontroller. (BTL 2)
			SPC 601EC.2	To learn Interfacing and Programming of I/O ports, timers and UART using8051 (BTL 2)
			SPC 601EC.3	To design Interfacing of real time devices like ADC, DAC and stepper motor with8051. (BTL 6)
			SPC 601EC.4	To introduce architecture ARM microcontrollers.(BTL 2)
			SPC 601EC.5	To introduce the interfacing of real time devices like RTC and WDT (BTL 2)
2	Data Communication and Computer Networks	SPC602EC	SPC602EC.1	Analyze the functionalities of layers in OSI model and understand various network topologies
			SPC602EC.2	Apply network layer protocols, IP addressing and internet working
			SPC602EC.3	Comprehend transport layer working with TCP and UDP
			SPC602EC.4	Implement the application layer and its protocols
			SPC602EC.5	Realize the importance of network security principles
3	Microwave Techniques	SPC603EC	SPC603EC.1	To Write assembly language programs using 8051 controller.
			SPC603EC.2	To Develop interfacing applications using 8051 controller.
			SPC603EC.3	To Develop embedded C programming concepts of ARM
			SPC603EC.4	To Develop ARM based programs for various interface modules
			SPC603EC.5	To Design ARM based programs for various interface modules
4	P.E. II -Wireless Sensor Networks	SPE510EC	SPE510EC.1	fundamental Concepts and applications of ad hoc and wireless sensor networks and apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
			SPE510EC.2	Describe the challenges for WSN and single node ,netwok architecture
			SPE510EC.3	Apply the knowledge to identify appropriate physical and MAC layer protocols and challenges in designing MAC, routing and transport protocols for wireless ad-hoc/sensor networks.
			SPE510EC.4	Describe the different security attacks and possible solutuins in Ad hoc and sensor networks
			SPE510EC.5	Comprehend the various sensor network Platforms, tools used in Wireless Sensor Networks and build basic modules
5	O.E. II-Data Science Using R Programming	SPE511EC	SPE 511EC.1	Understand the mathematical background for Data science
			SPE 511EC.2	Assess and analyze the statistics of the data
			SPE 511EC.3	Use linear, non-linear regression models, and classification techniques for data analysis.
			SPE 511EC.4	Develop R codes for data science solutions
			SPE 511EC.5	Assess the solutions, Use K-means clustering and K-NN classification methods, understand time series data, reading time series data, use ARIMA model
6	Microcontrollers Lab	SPC611EC	SPC611EC.1	To Write assembly language programs using 8051 controller.
			SPC611EC.2	To Develop interfacing applications using 8051 controller.
			SPC611EC.3	To Develop embedded C programming concepts of ARM
			SPC611EC.4	To Develop ARM based programs for various interface modules

S.NO	COURSE	COURSE CODE	COs	DESCRIPTION
1	Wireless Sensor Networks (WSN)	PE518EC	PE518EC.1	Build foundation for WSN by presenting challenges of wireless networking at various protocol layers.(BLT III)
			PE518EC.2	Determine network architectures, node discovery and localization, deployment strategies, fault tolerance.(BLT II)
			PE518EC.3	Determine suitable protocols and radio hardware.(BLT I)
			PE518EC.4	Evaluate the performance of sensor network and identify bottlenecks.(BLT VI)
			PE518EC.5	Discuss security in sensor networks through various architectures and protocols(BLT III)
2	Real Time Operating System (RTOS)	PE522EC	PE522EC.1	Explain the concepts of a real-time operating system and compare its features with a general-purpose OS (BLT2)
			PE522EC.2	Analyze various scheduling algorithms related to RTOS(BLT 4)
			PE522EC.3	Summarize the concepts related to concurrency, synchronization, and deadlock (BLT 2)
			PE522EC.4	Compare different real-time operating systems. (BLT 4)
			PE522EC.5	Explain the file system of RTOS. (BLT 2)
3	Software Engineering	OE806CS	OE806CS.1	Acquire knowledge about different software development processes and their usability in different problem domains.
			OE806CS.2	Understand the process of requirements collection, analyzing, and modeling requirements for effective understanding and communication with stakeholders.
			OE806CS.3	Design and develop the architecture of real world problems towards developing a blueprint for implementation.
			OE806CS.4	Use the UML language to design various models during software development lifecycle.
			OE806CS.5	Understand the concepts of software quality, testing and maintenance.

1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which are reflected in Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) of the various Programmes offered by the Institution.

Vision of the Institute:

Empower Women; Impact the World. Empowering girl students through professional education integrated with values and character to make an impact in the World.

Mission of the Institute

M1: Providing quality engineering education for girl students to make them competent and confident to succeed in professional practice and advanced learning.

M2: Establish state-of-art-facilities and resources to facilitate world class education.

M3: Integrating qualities like humanity, social values, ethics, leadership in order to encourage contribution to society.

Vision of the department:

Empowering girl students with the contemporary knowledge in electrical and electronics engineering for their success in life.

Mission of the department:

M1: To impart quality education for girl students to learn and practice various hardware and software platforms prevalent in industry.
M2: To achieve self-sustainability and overall development through Research and Development activities.
M3: To provide education for life by focusing on the inculcation of human & moral values through an honest and scientific approach
M4: To groom students with good attitude, team work and personality skills.

Program Educational Objectives:

PEO 1: Our graduates shall have enhanced skills and contemporary knowledge in Electrical and Electronics fields with social awareness and professional excellence towards successful employment, advanced learning and research.
PEO 2: Our graduates shall have life-long learning attitude, innovation and creativity to devise solutions for realistic and social problems in the society.
PEO3: Our graduates have good attitude and personality skills, ethical values, teamwork and leadership skill towards professionalism and ethical practices within the organization and the society.

Program Specific Outcomes:

PSO 1: Skilled Engineering Knowledge: The ability to analyze, design, and implement power systems, power electronic systems, instrumentation systems, communication systems, control systems, and computer systems.
PSO2: Research Ability: The ability to apply project management techniques to electrical/electronic (s) and renewable energy systems and to utilize statistics & probability, discrete mathematics, applied differential equations or transform methods in support of electrical/electronic (s) systems

Program Outcomes:

a) Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.

b) Problem Analysis: Identify, formulate, research literature and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.

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

d) Conduct investigations of complex problems: Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

e) Modern Tool Usage: Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.

f) The engineer and society: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

g) Environment & sustainability: 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.

h) Ethics: Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.

i) Individual and Team work: Understand and commit to professional ethics and responsibilities and norms of engineering practice.

j) Communication: Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.

k) Project Management and Finance: Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.

l) Lifelong Learning: Recognize the need for, and have the ability to engage in independent and life-long learning.

Course Outcomes for The 2023-24 AY (VII & VII sem)

S.no	Course Name & Code	CO's	PO,PSO's
1	Control of Electric Drives (PC428EE)-National	CO1: Understand The Control Circuits for Remote-control and Interlocking of electric drives	PO1,PO2,PO3,PO4,PO5, PO12,PSO1,PSO2
		CO2: Make use of circuit breakers and relays for protection of motors	PO1,PO2,PO3,PO4,PO5,PO6 PO12,PSO1,PSO2
		CO3: Explain the control of Induction Motor.	PO1,PO2,PO3,PO4,PO5, PO12,PSO1,PSO2
		CO4: Explain the control of synchronous Motor and DC Motor	PO1,PO2,PO3,PO4,PO5, PO12,PSO1,PSO2
		CO5: Explain the control of stepper Motor	PO1,PO2,PO3,PO4,PO5, PO12,PSO1,PSO2
2	Power System Operation and Control (PC429EE) -National	CO1: Solve load flow by appropriate modelling of the given power system and formulation of Y bus	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO2: Evaluate generation mix for economic operation with and without transmission losses	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO3: Explain load frequency control and estimate the frequency deviation through modelling	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO4: Analyze and describe different types of power system stability and establish SSSL	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO5: Identify various methods of voltage control and study the reactive power compensation	PO1,PO2,PO3,PO4,PO5 PO8,PO9,PO12,PSO1,PSO2

S.no	Course Name & Code	CO's	PO,PSO's
3	Power Electronics Applications in Power Systems (PC430EE)-National	CO1: Understand the need for FACTS devices in Power Transmission system	PO1,PO2,PO3,PO4, PO12,PSO1,PSO2
		CO2: Explain and apply shunt and series compensators	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO3: Explain and apply UPFC and IPFC for real and reactive power control .	PO1,PO2,PO3,PO4,PO5, PO12,PSO1,PSO2
		CO4: Explain and apply the power transmission schemes for HVDC Transmission	PO1,PO2,PO3,PO4, PO12,PSO1,PSO2
		CO5: Analyze and compare control schemes of HVDC system	PO1,PO2,PO3,PO4,PO5, PO12,PSO1,PSO2
4	Utilization of Electrical Energy (PE508EE)-Global	CO1: Understand electrical heating and welding for industrial applications	PO1,PO2,PO3,PO4,PO5.PO7 PO12,PSO1,PSO2
		CO2: Explain the control methods of induction and synchronous motors	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO3: Design illumination for different application	PO1,PO2,PO3,PO4,PO5,PO6 PO12,PSO1,PSO2
		CO4: Understand the traction mechanics	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO5: Understand the characteristics of traction motors.	PO1,PO2,PO3,PO4,PO5 PO8,PO9,PO12,PSO1,PSO2
5	Power Quality Engineering (PE509EE)-Global	CO1: Describe the different PQ disturbances and state remedies to improve PQ	PO1,PO2,PO3,PO4 PO12,PSO1,PSO2
		CO2: Determine voltages for different network configurations.	PO1,PO2,PO3,PO4 PO12,PSO1,PSO2
		CO3: Explain the effect of AS systems on power quality and the effect of voltages operation of various electrical machines	PO1,PO2,PO3,PO4,PO6 PO12,PSO1,PSO2
		CO4: Analyze the harmonic levels in industrial distribution systems	PO1,PO2,PO3,PO4,PO6 PO12,PSO1,PSO2
		CO5: Describe power quality monitoring and measuring techniques	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2

S.no	Course Name & Code	CO's	PO,PSO's
6	Power System Lab (PC465EE)-Local	CO1: Determine ABCD constants of transmission lines and evaluate regulation, efficiency.	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO2: Acquire knowledge in relay setting for safe operating of power system	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO3: Determine sequence parameters of transformer and alternator and draw its importance.	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO4: Determine the time constant of an alternator.	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO5: Determine the dielectric strength of oil and calculate the Efficiency of string insulators.	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
7	Electrical Simulation Lab (PC466EE)-Local	CO1: Simulate the concepts of Electrical Circuits, Control Systems and Power Systems and interpret data	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO2 Demonstrate the knowledge of programming environment, compiling, debugging, linking and executing variety of programs in MATLAB	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO3: Demonstrate ability to develop Simulink models for various electrical systems.	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
		CO4: Validate simulated results from programs/Simulink models with theoretical calculations	PO1,PO2,PO3,PO4,PO5 PO9,PO10,PO12,PSO1,PSO2
8	Project work Phase I (PW702EE)-Local	CO1: Demonstrate the ability to synthesize and apply the knowledge	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2
		CO2: Evaluate different solutions based on economic and technical feasibility	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2
		CO3: Effectively plan a project and confidently perform all aspects of project management	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2
		CO4: Demonstrate effective written and oral communication Skills	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2

S.no	Course Name & Code	CO's	PO,PSO's
9	AI Techniques in Electrical Engineering (PE511EE)-Global	CO1: Differentiate soft computing and hard computing techniques	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO2: Make use of different ANN learning rules	PO1,PO2,PO3,PO4,PO6 PO12,PSO1,PSO2
		CO3: Understand Fuzzy logic based systems	PO1,PO2,PO3,PO4,PO6 PO12,PSO1,PSO2
		CO4: Apply Genetic algorithms	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO5: Solve problems in Power System Operation and Control using AI Techniques	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
10	Road Safety Engineering (OE603CE)-Global	CO1: Understand the fundamentals of Traffic safety Analysis	PO1,PO2,PO3,PO4 PO12,PSO1,PSO2
		CO2 Analyze Accident Data	PO1,PO2,PO3,PO4,PO6 PO12,PSO1,PSO2
		CO3: Remember the concepts of road safety in urban areas	PO1,PO2,PO3,PO4,PO5 PO12,PSO1,PSO2
		CO4: Apply Crash reduction techniques	PO1,PO2,PO3,PO4,PO6 PO12,PSO1,PSO2
		CO5: Design of urban Infrastructure Considering safety Accepts	PO1,PO2,PO3,PO4 PO12,PSO1,PSO2
11	Smart Grid Technology (PE514EE)-Global	CO1: Understand technologies for smart grid	PO1,PO2,PO3,PO5,PO6 PO12,PSO1,PSO2
		CO2: Appreciate the DC distribution and smart grid systems	PO1,PO2,PO3,PO5,PO6 PO12,PSO1,PSO2
		CO3: Realize the Smart Grid Communications and Measurement Technology	PO1,PO2,PO3,PO5,PO6 PO12,PSO1,PSO2
		CO4: Summarize the renewable energy and storage	PO1,PO2,PO3,PO5,PO6 PO12,PSO1,PSO2
		CO5: Outline the smart grid control	PO1,PO2,PO3,PO5,PO6 PO12,PSO1,PSO2

12	Project work Phase II (PW703EE) - Local	CO1: Demonstrate the ability to synthesize and apply the knowledge	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2
		CO2: Evaluate different solutions based on economic and technical feasibility	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2
		CO3: Effectively plan a project and confidently perform all aspects of project management	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2
		CO4: Demonstrate effective written and oral communication Skills	PO1,PO2,PO3,PO4,PO5,PO7 PO8,PO9,PO10,PO11,PO12 PSO1,PSO2

STANLEY COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN

CHAPEL ROAD, ABIDS, HYD-500001

Institute Vision and Mission

The Vision of the STLW

Empower Women; Impact the World
Empowering girl students through professional education integrated with values and character to make an impact in the World.

The Mission STLW, in pursuance of its vision

M1: Providing quality engineering education for girl students to make them competent and confident to succeed in professional practice and advanced learning.
M2: Establish state-of-art-facilities and resources to facilitate world class education.
M3: Integrating qualities like humanity, social values, ethics, and leadership in order to encourage contribution to society.

Vision of the Information Technology Department

Empowering girl students with the contemporary knowledge in Information and Technology Engineering for their success in life

Mission of the Information Technology Department

M1: Providing quality education and excellent environments for students to learn and practice various latest hardware, software and firmware platforms.
M2: To establish industry-oriented training integrated with opportunities for team work, leadership.
M3: To groom students with social activities, ethics and values.

Program Education Outcomes of the Information Technology Department

PEO1: Graduates shall have enhanced skills and contemporary knowledge to adapt new software and hardware technologies for professional excellence, employment and Research.

PEO2: Proficient in analyzing, developing, solving engineering problems to assist life-long learning and to develop team work.

PEO3: To inculcate self-confidence, acquire professional and ethical attitude, infuse leadership qualities, impart proficiency in soft-skills and the ability to relate engineering with social issues.

PROGRAM OUTCOMES

a) **Engineering knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.
b) **Problem Analysis:** Identify, formulate, research literature, and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.
c) **Design/development of solutions:** Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
d) **Conduct investigations of complex problems:** Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
e) **Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.
f) **The engineer and society**: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
g) **Environment & sustainability:** 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.
h) **Ethics**: Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.
i) **Individual and Team work**: Understand and commit to professional ethics and responsibilities and norms of engineering practice.
j) **Communication**: Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.
k) **Project Management and Finance:** Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.
l) **Lifelong Learning**: Recognize the need for, and have the ability to engage in independent and life-long learning

PROGRAM SPECIFIC OUTCOMES

1. **PSO1**: Acquire skills to design, analyze and implement algorithms using high-level programming languages.
2. **PSO2**: Contribute their engineering skills in information technology domains like operating systems, network design and web designing, database design, information security and cloud computing.
3. **PSO3**: An ability to design and implement knowledge-based discovery and machine learning by using the various concepts of mathematical models, digital system design, neural networks, internet of things.

Stanley College of Engineering and Technology for Women

(Autonomous)

(Affiliated to Osmania University)

(Accredited by NAAC with"A" Grade, Accredited by NBA)

Chapel Road, Abids, Hyderabad – 500 001

Department of Information Technology

Program Educational Objectives (PEOs)

PEO1: Graduates shall have enhanced skills and contemporary knowledge to adapt new software and hardware technologies for professional excellence, employment and Research.

PEO2: Proficient in analyzing, developing, solving engineering problems to assist life-long learning and to develop team work.

PEO3: To inculcate self-confidence, acquire professional and ethical attitude, infuse leadership qualities, impart proficiency in soft-skills and the ability to relate engineering with social issues.

Program Specific Outcomes (PSOs)

PSO1: Acquire skills to design, analyze and implement algorithms using high-level programming languages.

PSO2: Contribute their engineering skills in information technology domains like operating systems, network design and web designing, database design, information security and cloud computing.

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ABIDS, HYDERABAD-500001

Department of Information Technology

1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which are reflected in Programme Outcomes (POs),Programme Specific Outcomes (PSOs) and Course Outcomes (COs) of the various Programmes offered by the Institution.

Name of the Course & Course Code	Course Outcomes	PO'S,PSO
Compiler Construction (SPC501IT) (Global)	1.Create lexical rules and grammars for a given language	PO1,PO2,PO3,PO4,PO5,PSO1 ,PSO2
	2. Generate scanners and parsers from declarative Specifications.	PO1,PO2,PO3,PO4,PO5,PSO1 ,PSO2
	3. Describe an abstract syntax tree for a small language.	PO1,PO2,PO3,PO4,PO5,PSO1 ,PSO2
	4. Use program analysis techniques for code optimization	PO1,PO2,PO3,PO4,PO5,PSO1 ,PSO2
	5. Develop the compiler for a subset of a given language	PO1,PO2,PO3,PO4,PO5,PSO1 ,PSO2
Data Communicatio ns & Computer Networks (SPC502IT) (Global)	1. Identify various networking components.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	2. Explain the function of each layer of OSI and trace the flow of information from one node to another node in the network.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	3. Understand the principles of IP addressing and internet routing	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	4. Describe the working of various networked applications such as DNS, mail, file transfer and www	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	5. Implement client-server socket-based networked applications	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
Design Analysis and Algorithms (SPC503IT) (Global)	1. Compute and Analyse the complexity of algorithms using asymptotic notations.	PO1,PO2,PO3,PO4,PO6,PO12 ,PSO1,PSO2
	2. Apply the divide and conquer and brute force techniques to a given problem	PO1,PO2,PO3,PO4,PO6,PO12 ,PSO1,PSO2
	3. Demonstrate and apply greedy methods and dynamic programming techniques to real world problems	PO1,PO2,PO3,PO4,PO6,PO12 ,PSO1,PSO2
	4. Relate the Backtracking and Branch and Bounds techniques to real world problems.	PO1,PO2,PO3,PO4,PO6,PO12 ,PSO1,PSO2
	5. Understand NP-Hard and NP-Complete of algorithms and different tries methods.	PO1,PO2,PO3,PO4,PO6,PO12 ,PSO1,PSO2
	1. Apply the Intelligent techniques for problem solving	PO1,PO2,PO3,PSO1,PSO2

Computational Intelligence (SPE522IT) (Global)	2. Apply heuristic search approach for problem solving	PO2,PO4,PO5 ,PSO1,PSO2
	3. Apply improve problem solving skills using the acquired knowledge in the areas of, reasoning and uncertainty	PO2,PO4,PO6,PSO1,PSO2
	4. Understand and apply the concepts of fuzzy logic.	PO1,PO3,PO7
	5. Understand and apply the concepts of genetic algorithms in real world problems.	PO1,PO3,PO5,PO6
Finance & Accounting (SHS501BM) (National)	1. Evaluate the financial performance of the business unit.	PO2, PO5,PO8,PO12,PSO1
	2. Take decisions on selection of projects understanding of financial system.	PO2, PO5, PO12,PSO1
	3. Take decisions on procurement of finances puts necessary to evaluate projects and to provide the my to analyze the financial	PO3, PO6,PO12, PSO1
	4. Analyze the liquidity, solvency and profitability of the business unit.	PO1,PO2,PO5,PO11, PO12,PSO1,PSO2
	5. Evaluate the overall financial functioning of an enterprise	PO1,PO2,PO5,PO11, PO12,PSO1
Compiler Construction Lab (SPC511IT) (Local)	1. Understand and define the role of lexical analyzer, use of regular expression and transition diagrams.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	2. Understand and use Context free grammar, and parse tree construction.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	3. Learn & use the new tools and technologies used for designing a compiler.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	4. Develop program for solving parser problem	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	5. Apply the techniques and algorithms used in Compiler Construction in compiler component design	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	6. Build a code generator using different intermediate codes and optimize the target code.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
Data Communications & Computer Networks Lab (SPC512IT) (Local)	1. Use the relevant network model for the specified data communication system.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	2. Configure the network component and assign IP address.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	3. Write concurrent programs using message queues and semaphores	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	4. Use connection-oriented , connectionless and Asynchronous sockets	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	5. Implement networked applications in TCP/IP protocol Suite	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
Web Application Development Lab (SPC513IT) (Local)	1. Design different layouts using HTML 5 and CSS	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	2. Understand the BOOTSTRAP for designing applications.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	3. Understand the concepts of JAVA script and implement dynamic forms.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	4. Design and develop games using HOOKS.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	5. Implement a full-stack web applications with React and MongoDB.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
Embedded Systems (SPC601IT) (National/Regiona)	1. Gain adequate understanding of the software architecture of the Embedded OS.	PO1,PO2,PO3,PO4,PO5,PO12 ,PSO1,PSO2
	2. Develop simple applications for Process Management, Synchronization Techniques, Message Passing, and POSIX based application development.	PO1,PO2,PO3,PO4,PO5,PO12 ,PSO1,PSO2

	3. Describe the Linux Kernel environment; build system, kernel configuration, customization and compilation.	PO1,PO2,PO3,PO4,PO5,PO12 ,PSO1,PSO2
	4. Set up a Linux environment with basic understanding of kernel programming concepts like Module. Programming and Device Drivers.	PO1,PO2,PO3,PO4,PO5,PO12 ,PSO1,PSO2
	5. Understand cross tooling environments and be exposed to development of device drivers for a target hardware platform.	PO1,PO2,PO3,PO4,PO5,PO12 ,PSO1,PSO2
Software Engineering (SPC602IT) (National)	1. Acquired working knowledge of alternative approaches and techniques for each phase of software development	PO1,PO2,PO3,PO4,PO5,PO6, PO9,PO12, PSO1,PSO2
	2. Judge an appropriate process model(s) assessing software project attributes and analyze necessary requirements for project development eventually composing SRS	PO1,PO2,PO3,PO4,PO5,PO6, PO9,PO12, PSO1,PSO2
	3. Creation of visual models to describe (non-) algorithmic solutions for projects using various design principles.	PO1,PO2,PO3,PO4,PO5,PO6, PO9,PO12, PSO1,PSO2
	4. Acquire skills necessary as an independent or as part of a team for architecting a complete software project by identifying solutions for recurring problems exerting knowledge on patterns.	PO1,PO2,PO3,PO4,PO5,PO6, PO9,PO12, PSO1,PSO2
	5. Concede product quality through testing techniques employing appropriate metrics by understanding the practical challenges associated with the development of a significant software system.	PO1,PO2,PO3,PO4,PO5,PO6, PO9,PO12, PSO1,PSO2
Artificial Intelligence & Machine Learning (SPC603IT) (Global)	1. Describe the concepts and applications of artificial intelligence and Machine Learning.	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11,PO 12,PSO1,PSO2
	2. Understand and Compute the performance metrics for regression and classification problems.	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11,PO 12,PSO1,PSO2
	3. Extract features that can be used for a particular machine learning approach in various applications.	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11,PO 12,PSO1,PSO2
	4. Apply ensemble techniques for improvement of classifiers.	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11,PO 12,PSO1,PSO2
	5. Understand reinforcement learning and Apply classification, clustering and reinforcement learning to various applications.	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO8,PO9,PO10,PO11,PO 12,PSO1,PSO2
Natural Language Processing (SPE622IT) (Global)	1. Tag a given text with basic Language features	PO1,PO2,PO3,PO4,PO5,PO12 , PSO1,PSO2
	2. Design an innovative application using NLP components	PO1,PO2,PO3,PO4,PO5,PO12 , PSO1,PSO2
	3. Implement a rule-based system to tackle morphology/syntax of a language.	PO1,PO2,PO3,PO4,PO5,PO12 , PSO1,PSO2
	4. Design a tag set to be used for statistical processing for real-time applications.	PO1,PO2,PO3,PO4,PO5,PO12 , PSO1,PSO2
	5. Compare and contrast the use of different statistical approaches for different types of NLP applications	PO1,PO2,PO3,PO4,PO5,PO12 , PSO1,PSO2
Open Source Technologies (SOE615CSE) (Global)	1. Identify various OSS tools, platforms, licensing procedures, and development models, ethics.	PO1,PO2,PO3,PO5,PO12, PSO1,PSO2
	2. Adapt to the usage of OSS tools and technologies.	PO1,PO2,PO3,PO5,PO12, PSO1,PSO2
	3. Distinguish between Proprietary and Open Source tools, development methods	PO1,PO2,PO3,PO5,PO12, PSO1,PSO2

	4. Evaluate various Open Source projects like Linux, Apache	PO1,PO2,PO3,PO5,PO12, PSO1,PSO2
	5.Practice Open Source principles, ethics, and models.	PO1,PO2,PO3,PO5,PO12, PSO1,PSO2
Embedded Systems Lab (SPC611IT) (Regional)	1. Apply the basic concepts to develop an Interface for 8051 and ARM processors.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	2. How to interface input and output units.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	3. Develop control applications	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	4. Demonstrate the RTOS Concepts by designing real time applications.	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
	5. Demonstrate multi-tasking, scheduling, priority inversion and Interrupt service routines in RTOS	PO1,PO2,PO3,PO4,PO5,PO9, PO10,PO12,PSO1,PSO2
Aritifical Intelligence & Machine Learning Lab (SPC612IT) (Regional)	1. Understanding the exploratory data analysis and data visualization	PO1,PO3,PO6,PSO1,PSO2
	2. Understand the implementation procedures for the machine learning algorithms.	PO2,PO4,PO5,PSO1,PSO2
	3. Design Python programs for various Learning algorithms.	PO5,PO6,PO7,PSO1,PSO2
	4. Apply appropriate data sets to the Machine Learning algorithms.	PO3,PO3,PO8,PSO1,SPO2
	5. Identify and apply Machine Learning algorithms to solve real world problems.	PO1,PO4,PO9,PO12,PSO1,PSO2
Mini Project(Software Engineering Lab) (SPC6113IT) (Regional)	1. Ability to generate a high-level design of the system from the software requirements	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	2. Gain experience and/or awareness of testing problems and will be able to develop a simple testing report	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	3. Understand the software engineering methodologies involved in the phases for Project development.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	4. Gain knowledge about open-source tools used for implementing software engineering methods.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
	5. To develop product-prototypes implementing software engineering methods.	PO1,PO2,PO3,PO4,PO5,PO8, PO9,PO10,PO12,PSO1,PSO2
Summer Interships-2 (SPW611IT) (Local)	1. Student is able to construct the company profile by compiling the brief history, management structure,products / services offered, key achievements and market performance for his / her organization of internship.	PO1,PO2,PO3,PO4,PSO1,PSO2
	2. For his / her organization of internship, the student is able to assess its Strengths, Weaknesses,Opportunities and Threats (SWOT)	PO1,PO2,PO3,PO4,PSO1,PSO2
	3. Student is able to determine the challenges and future potential for his / her internship organization in particular and the sector in general.	PO1,PO2,PO3,PO4,PSO1,PSO2
	4. Student is able to test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.	PO1,PO2,PO3,PO4,PO5,PSO1,PSO2
	5. Student is able to apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization+C67	PO1,PO2,PO3,PO4,PO5,PSO1,PSO2

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AY - 22 23
CONSTITUTION OF BOS

STANLEY COLLEGE OF ENGINEERING AND TECHNOLOGY FOR WOMEN
(Autonomous)

(Affiliated to Osmania University)
(Accredited by NAAC with "A" Grade, Accredited by NBA)

Board of Studies for the Departments of Mechanical and Civil Engineering

Minutes of BOS meeting

Venue: SCETW	DATE: 17/4/2023	TIME: 2:00 PM

The following BOS members attended the meeting.

S.No	NAME	ROLE	DESIGNATION	SIGNATURE
1	Dr. G. Saritha	Chairperson, Board of Studies	Associate Professor, Dept of ME, SCETW	
2	Prof. M. Chandra Sekhar Reddy	Subject Expert - University Nominee	Professor &Head, Dept of Mechanical Engineering, Osmania University, Hyderabad	
3	Prof. Raja Banerjee	External Subject Expert	Professor, Dept of Mechanical & Aerospace Engineering, IIT, Hyderabad.	
4	Prof. N.V.S Raju	External Subject Expert	Professor &Head, Dept of Mechanical Engineering, JNTU, Hyderabad	
5	Dr.P. Mastanaiah	R&D/Industrial Expert	Divisional Head, Directorate, of Engineers, DRDL,Hyderabad	
6	Dr. V.Anuradha	Permanent Invitee	Professor & Head, Dept of H&S,SCETW	
7	Dr. A. Vinaya Babu	Permanent invitee	Dean, Academics, SCETW	
8	Dr. Satya Prasad Lanka	Permanent Invitee	Principal, SCETW	
9	Mr. GVPN Anjaneyulu	Member	Associate Professor, Dept of ME, SCETW	
10	Ms. E.Lathav Devi	Member	Assistant Professor, Dept of ME, SCETW	
11	Ms. Saba Fathima	Member	Assistant Professor, Dept of Civil Engg, SCETW	

1.1.1 curriculum developed and implemented have relevence to local and national development needs which reflect the PO's and CO's of various programs

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H&S CRITERION

A.Y. 22-23

All the members of BOS (Both external and internal) attended the meeting. Dr.G.Saritha, Chairperson - BOS, Welcomed all the members to the meeting and initiated the discussion on the following agenda.

Agenda:

1. Reviewing and finalizing the syllabus of the following subjects being offered to other branches (CSE, CME, AI&DS, IT, ECE, EEE) as service subjects.

A. MECHANICAL ENGINEERING

1. Engineering Graphics & Design
2. Engineering Mechanics
3. Workshop
4. Elements of Mechanical engineering

B. CIVIL ENGINEERING

1. Disaster Mitigation
2. Road Safety Engineering
3. Industrial Safety

2. Any other issues

Minutes of the Meeting

1. The Chairperson initiated the meeting by welcoming both the external and internal members of BOS for the Mechanical and Civil Engineering Department.

2. The meeting proceeded as the members discussed which courses are to be offered in which semester for various Engineering programs, at this college.

3. After discussing extensively the members collectively agreed upon the theory, practical and additional courses being prescribed, details of which are tabulated below.

S. No.	Subject /Course	Recommendations
1	Engineering Mechanics	Include Center of gravity in Unit-III, Centroid & Moment of Inertia and Screw Jack in Unit-II, Friction
2	Workshop	3-D printing is to be added as a trade in which regular shapes (Square, Pyramid and Cube) will be printed. IT-workshop will be deleted from existing workshop syllabus as it will be handled by core Departments(CSE/IT) Title of the Lab will be changed from "Workshop" to "Engineering Workshop"

3	Engineering Graphics	Title will be changed from "Engineering Graphics & design" to "Engineering Graphics" Section of solids-I Excluded from the Existing Syllabus Section of solids-II Excluded from the Existing Syllabus. Orthographic Views—This topic is to be included in the new syllabus.
4	Elements of Mechanical engineering	Include "Heat Transfer in fluids" Merge Unit-2(Gear Drives) & Unit-3(Belt Drives) and make it one unit and Name it as " Mechanical Power Transmission systems" Include new Unit-3 as "Basics of Fluid Mechanics-Dimensions and units: physical properties of fluids, Types of Flow. Equation of continuity for one dimensional flow, circulation and vorticity, Stream line, path line and streak lines and stream tube".
5	Disaster Mitigation	Accepted the proposal as it is. Listed text books should be categorized as textbooks & Reference Books with a maximum of five books
6	Road Safety Engineering	Accepted the proposal as it is Suggested to include this subject for all the branches(open to all)
7	Industrial Safety	Unit-V Heading to be modified to "Periodic and predictive Maintenance" Accepted the proposal as it is

4. Also the following recommendations were made by the BOS committee external subject expert members, to consider in the next BOS meeting.

S.No	Proposal
1	Industrial Safety subject to be reframed which includes Electric Vehicle components and its Management
2	Road safety Engineering subject need to be offered to all branches

3	It is recommended to offer Industrial Robotics subject as an Open elective for all the branches

5. As there were no other discussions, the meeting was concluded with a Vote of Thanks to all the members who participated.

Chairperson
G Saritha
Dr. G. Saritha

Board of Studies- (Depts Mech. & Civil)

STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Private Un-aided Non-minority Autonomous Institution)
(All eligible UG courses are accredited by NBA & NAAC with 'A' Grade)
Affiliated to Osmania University and Approved by AICTE
Estd. 2008

AY :2023-24

S.NO	SEM	COURSE CODE	COURSE NAME	CO1	CO2	CO3	CO4	CO5
1	I	SBS0101MT	Mathematics-I	Identify the nature of series and sequences (Evaluate).	of the mean value Theorems for differentiable functions and Evaluate the Curvature (Anlayze).	Analyze the properties of function of two variables (Knowledge).	Evaluate double and triple integrals in engineering problems.	Solve problems based on vector differentiation and integration
2	I	SBS0901CH	Applied Chemistry	Concepts of electrochemistry are taught to students to make them aware of usage of different types of cells and electrodes in higher classes	Concept, uses and application of primary and secondary batteries in motor vehicles and domestic purpose	Corrosion enables understanding the causes, effects and controlling methods in industry and surrounding environment	Become aware of types of fuels which create the awareness of different energy resources	Composites, liquid crystals help to understand the importance of these as engineering materials , to develop newer materials and green chemistry helps to develop awareness about the principles involved in environmental studies
3	I	SES0101CM	Progamming for problem solving	Students should be able to implement software development tools like algorithm, pseudo codes and programming structure.	Students should be able to design and implement programs in 'C' using functions, arrays and pointers.	Students should be able to understand the concepts of structures and files.	Students should be able to differentiate Structure oriented and object-oriented Programming Language	Students should be able to implement programs using OOPs concepts like inheritance etc.
8	I	SES0911ME	Engineering Graphics la	To inculcate a good understanding of engineering drawing conventions & their significance.	To impart skills to make technical drawings using AUTO-CAD.	To impart capability to identify and draw engineering curves &to scale.	To develop skills of drafting projections of standard geometric entities. (points,lines, planes, solids with section).	To develop 3D visualization skills to understand 2D drawings in 3D space &vice versa

10	II	SBS0201MT	Mathematics-II	Apply the concept of rank of matrices and solve system of equations.(Application)	Solve certain first order differential equations. (Application)	Solve certain second and higher order differential equations. (Application)	Apply Laplace transforms, solve ordinary differential equations by using it. (Application)	Apply problem-solving using complex analysis techniques applied to diverse situations in physics, engineering and other mathematical concepts. (Application)
11	II	SBS0902PH	Applied Physics	Know the construction of lasers and optical fibers and Apply their basic principles to various lasers systems and optical fibers.	Know the construction of lasers and optical fibers and Apply their basic principles to various lasers systems and optical fibers.	Know the construction of lasers and optica fibers and Apply their basic principles to various lasers systems and optical fibers.	Familiarize with classical and quantum electron theories and use band theory to classify solids. To explain various Types of semiconductors and their applications	Acquire knowledge of preparation of thin films and basic concepts of nano materials.
13	II	SES0203EE	Fundamentas of Electrical and Electronics	To familiarize with the basic electronic components.	To identify and make use of different electronic equipment and meters used in Electronics Laboratories	To demonstrate the working and usage of CRO	To fabricate Printed Circuit Board (PCB)	To interpret network theorems and the instrumentation through experimentation
15	II	SHS0911EG	English Lab	Communicate clearly and accurately knowing the use of verbal and non-verbal communication and build skills in LSRW	Use standard grammar and punctuation to communicate effectively and in proficiency/ competitive exams (GATE, IELTS, TOEFL, GRE, PTE)	Write a paragraph, précis, essay, general report and personal letter to improve their correspondence skills	Demonstrate proficiency in using appropriate vocabulary to improve their command over language	Understand and use various reading strategies to analyze texts (Exemplary Personalities)
17	II	SES0213EE	Fundamentas of Electrical and Electronics Lab	Experiment on solar cell interprets its parameters, fill factor compute and compare the experimental results and draw relevant conclusions	Confirm the wavelength of laser light and illustrate the light propagation through an optical fibe	Investigate the planck's constant by using photo cell energy and doing calculations	Draw the newton's rings graph and use the graphical representation of data and know	Ability to understand the characteristics of p-n junction diode and take measurements independently

18	**II**	SES0912ME	Engineering Workshop	To Identify and use marking out tools, hand tools, measuring equipment and to work to prescribed tolerances	on experience about use of different engineering materials, tools,equipments and processes those are common in the engineering field.	knowledge on various manufacturing processes used for the production of various engineering products.	exposure on computer hardware and working knowledge on computers and software.	To adopt safety practices while working with various tools.

PROGRAM OUTCOMES

PO1: Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the conceptualization of engineering models.

PO2: Problem Analysis: Identify, formulate, research literature and solve complex engineering problems reaching substantiated conclusions using first principles of mathematics and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex engineering activities, with an understanding of the limitations.

PO6: The engineer and society: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

PO7: Environment & sustainability: 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.

PO8: Ethics: Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering practice.

PO9: Individual and Team work: Understand and commit to professional ethics and responsibilities and norms of engineering practice.

PO10: Communication: Understand the impact of engineering solutions in a societal context and demonstrate knowledge of and need for sustainable development.

PO11: Project Management and Finance: Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations.

PO12: Lifelong Learning: Recognize the need for, and have the ability to engage in independent and life-long learning

Stanley College of Engineering & Technology for Women

Department of Business Management

Vision of the Department

Empowering the girl students through management education to develop globally competitive women managers with a concern for society

Mission of the Department

- The Department endeavors to provide management education for girl students to make them competent and confident to succeed in management professional practice and advanced learning
- Harnessing qualities like humanity, social values, ethics, leadership in order to encourage contribution to society

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

PEO1: To transform students into effective professionals

PEO2: To prepare the students for immediate employment and for life-long learning in advanced areas of management

PROGRAM SPECIFIC OUTCOMES (PSO's)

PSO1: Students should exhibit knowledge of management principles and organizational behavior

PSO2: Students should demonstrate the contemporary marketing, financing and manpower management skills

MBA Program Outcomes

PO1. Managerial Knowledge: Demonstrate knowledge and understanding of the management concepts and apply in contemporary professional managerial practice

PO2. Human Values and Ethics: Demonstrate the knowledge of human values such as truth, honesty and loyalty by understanding the impact of management practice and Apply ethical principles and commit to professional ethics and responsibilities and norms of the management practice

PO3. Functional Area knowledge: To gain the knowledge in Finance, HR and Marketing areas with an understanding of practical application as per the contemporary needs, trends and changes

PO4. Modern tools and Project Management: Create, select, and apply quantitative techniques, resources, modern management and IT tools to apply for one's own research work, in their specialized area of their study and to manage projects in multidisciplinary environments

PO5. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the context of business environment and technological change.

PO6. Entrepreneurial and Global Perspective: Students should be able to identify, assess and shape entrepreneurial opportunities and to evaluate their potential for business success in the competitive global Environment

MBA I Semester COs and POs and PSOs Mapping

Name of the Course	Course Code	Course Outcomes	POs, PSOs
Management & Organizational Behaviour	MB101	CO1.Imbibe the key management process and various Approaches to Organization Structure	PO1,PSO1, PSO2
		CO2.Impart knowledge on Decision-making, its models and importance of planning in the organizations	PO1,PSO1, PSO3
		CO3.Analyze the psychological states of an employees and motivation theories towards their rate of success in the organizations	PO1,PSO1, PSO4
		CO4.Identify various models of OB and the conflict models in the organization	PO1,PSO1, PSO5
		CO5.Ideologize the organization design, culture and climate including the emerging aspects of Organizational Behaviour	PO1,PSO1, PSO6
Management & Organizational Behaviour	MB101	CO1.Imbibe the key management process and various Approaches to Organization Structure	PO1,PSO1, PSO2
		CO2.Impart knowledge on Decision-making, its models and importance of planning in the organizations	PO1,PSO1, PSO3
		CO3.Analyze the psychological states of an employees and motivation theories towards their rate of success in the organizations	PO1,PSO1, PSO4
		CO4.Identify various models of OB and the conflict models in the organization	PO1,PSO1, PSO5
		CO5.Ideologize the organization design, culture and climate including the emerging aspects of Organizational Behaviour	PO1,PSO1, PSO6
Accounting for Management	MB102	CO1. Journal, Ledger, and Trial Balance.	PO1, PSO1
		CO2. Preparation of financial statements and study of depreciation.	PO1, PO3, PSO2
		CO3. Learn financial statement and Ratio Analysis.	PO1, PO3, PSO2
		CO4. Analyze Cash flow position of companies.	PO4, PSO2
		CO5. Study CVP, and Break-even analysis along with Nash Equilibrium in Game theory.	PO1, PO3, PSO2

Marketing Management	MB103	CO1. Understand the key concepts of marketing, market segmentation, and positioning strategies.	PO1, PSO2
		CO2. Develop an understanding of the 4Ps (Product, Price, Place, Promotion) and their applications.	PO3, PSO2
		CO3. Analyze consumer and industrial buyer behavior for decision-making in marketing strategies.	PO1, PO3, PSO2
		CO4. Learn the marketing strategies for global markets and competitive environments.	PO6, PSO2
		CO5. Apply marketing research techniques for understanding customer needs and improving marketing practices.	PO4, PSO2
Business Research Methods	MB104	CO1. Understand the fundamentals of research and various research designs.	PO1, PSO1
		CO2. Apply statistical tools like measures of central tendency and dispersion in research.	PO4, PSO1, PSO2
		CO3. Design effective sampling techniques and data collection methods for business research.	PO1, PO4, PSO2
		CO4. Use hypothesis testing and ANOVA techniques for decision-making.	PO4, PSO2
		CO5. Develop skills for preparing and presenting research reports.	PO1, PO5, PSO1
Managerial Economics	MB105	CO1. Understand economic principles and their applications to managerial decisions.	PO1, PSO1
		CO2. Analyze demand, supply, and elasticity concepts for business forecasting.	PO1, PO3, PSO2
		CO3. Learn production and cost analysis methods to enhance operational efficiency.	PO3, PSO2
		CO4. Evaluate pricing strategies and market structures for business advantage.	PO1, PO3, PSO2
		CO5. Understand macroeconomic factors like inflation and trade cycles and their impact on business.	PO1, PO5, PSO1

Data Analysis Lab	MB107	CO1. Understand basic functions and features of MS Excel for business applications.	PO4, PSO1
		CO2. Apply statistical functions in Excel for data analysis.	PO4, PSO1, PSO2
		CO3. Learn to create reports and graphical representations of data.	PO4, PSO2
		CO4. Use data transfer techniques between MS Excel and MS Access for effective database management.	PO4, PSO2
		CO5. Develop macros for automation of repetitive tasks in Excel.	PO4, PSO2
Business Law &Ethics	MB106-1	CO1: Understand the Law of contracts	PO1, PSO1, PSO2
		CO2: Identify the features of contract of Agency and the Law relating to special contracts	PO1, PSO1, PSO3
		CO3: Understand the classification of companies and the process of formation of companies	PO1, PSO1, PSO4
		CO4: Recognize the importance of Consumer Protection Law and related regulatory frameworks	PO1, PSO1, PSO5
		CO5: Identify the importance of integrity and ethical considerations in business operations	PO1, PSO1, PSO6
Business Communication	MB106-2	CO1: Understand the importance of communication in business	PO1, PSO1, PSO2
		CO2: Identify the communication process and its relevance in business	PO1, PSO1, PSO3
		CO3: Recognize the strategies for effective presentation in business scenarios	PO1, PSO1, PSO4
		CO4: Be familiar with report writing and its importance in business communication	PO1, PSO1, PSO5
		CO5: Understand the concept of media relations and its role in business communication	PO1, PSO1, PSO6

MBA II Semester COs and POs and PSOs Mapping

Name of the Course	Course Code	Course Outcomes	POs, PSOs
Human Resource Management	MB201	CO1. Analyze HRM Typology and create a competency framework for HR Professionals.	PO1, PO3, PSO1
		CO2. Analyze Job, the training methods and the process involved in rewarding an employee at the workplace.	PO1, PO4, PSO1
		CO3. Identify HRD and assess Career Planning Models.	PO1, PO5, PSO1
		CO4. Ideologize QWL, QC, and Absence Management of employees in the organization.	PO2, PO6, PSO2
		CO5. Establish knowledge on HR Outsourcing, Global HRM, International HRM, and Strategic HRM.	PO3, PO6, PSO2
Financial Management	MB202	CO1. Critically evaluate the financial objectives of various types of organizations and stakeholder requirements.	PO1, PSO1
		CO2. Apply project appraisal methods to cash flows.	PO3, PSO2
		CO3. Explain alternative sources of finance and investment opportunities.	PO3, PO6, PSO2
		CO4. Select and apply techniques in managing working capital.	PO4, PSO2
		CO5. Learn about corporate events like mergers and acquisitions.	PO6, PSO2
Quantitative Techniques for Business Decisions	MB203	CO1. Provide an overview of optimization techniques.	PO1, PO4, PSO1
		CO2. Study the simplex method for optimization.	PO4, PSO2
		CO3. Provide transportation and assignment models for optimization.	PO3, PO4, PSO2
		CO4. Study different network models.	PO4, PSO2
		CO5. Study queuing theory, game theory, and simulation applications.	PO4, PSO2
Operations Management	MB204	CO1. Identify the elements of operations management and various transformation processes to enhance productivity.	PO1, PO3, PSO1

		CO2. Analyze and evaluate various facility alternatives and their capacity decisions.	PO4, PSO1
		CO3. Analyze techniques of work methods and work measurement.	PO1, PSO1
		CO4. Plan and implement suitable materials management practices.	PO3, PSO2
		CO5. Implement and analyze inventory control techniques.	PO4, PSO2
Innovation Management and Entreprenuership Development	MB205	CO1. Identify the importance of innovation and innovation management process.	PO1, PO6, PSO1
		CO2. Analyze the organizational impact on innovation.	PO4, PSO2
		CO3. Understand the concept of entrepreneurship.	PO1, PSO1
		CO4. Analyze the entrepreneurship development programs.	PO3, PSO2
		CO5. Recognize the role of small enterprises and identify institutional support for entrepreneurs.	PO6, PSO2
Mini Project	MB206	CO1. Apply the knowledge of management theories and practices to solve business problems.	PO1, PSO1
		CO2. Present facts and figures for critical analysis.	PO4, PSO2
		CO3. Make critical analysis for data-based decision-making.	PO1, PSO1
		CO4. Suggest practical solutions for identified problems.	PO3, PSO2
		CO5. Give logical conclusions from the work conducted.	PO5, PSO1

MBA III Semester COs and POs and PSOs Mapping

Name of the Course	Course Code	Course Outcomes	POs, PSOs
Strategic Management	MB301	CO1. Display a knowledge of the process of strategic management.	PO1, PSO1
		CO2. Appreciate the importance of strategic analysis in formulating strategy.	PO1, PO3, PSO2
		CO3. Generate and evaluate strategic alternatives at the corporate level.	PO1, PO3, PSO2
		CO4. Generate and evaluate strategic alternatives at the business level.	PO3, PO6, PSO2
		CO5. Construct strategy-implementation plans at the corporate level with appropriate controls and governance.	PO1, PO4, PSO2
Business Intelligence	MB302	CO1. Understand the overview of Business Intelligence.	PO1, PSO1
		CO2. Identify the technological architecture that makes up BI systems like data warehousing and data mining.	PO3, PO4, PSO2
		CO3. Analyze performance dashboards.	PO4, PSO2
		CO4. Understand Business Analytics and Data Visualization.	PO4, PSO2
		CO5. Plan and implement Business Intelligence.	PO4, PSO2
Supply Chain Management	MB303	CO1. Understand the concept of supply chain management and its functions.	PO1, PSO1
		CO2. Recognize the importance of logistics and inventory management.	PO3, PSO2
		CO3. Understand warehousing management system and transportation practices in industries.	PO3, PO4, PSO2
		CO4. Identify the role of information technology in supply chain management.	PO4, PSO2
		CO5. Recognize the role of distributors and human resources in supply chain management.	PO6, PSO2
Investment Management	MB304-1	CO1. Differentiate various avenues of investment on the basis of risk and return.	PO1, PSO2
		CO2. Comprehend the functionalities of the securities market and its components.	PO3, PSO2

		CO3. Gain basic knowledge of analyzing stocks.	PO1, PO3, PSO2
		CO4. Make valuation of equity, debt, and portfolio instruments.	PO4, PSO2
		CO5. Gain an understanding of mutual funds, their performance evaluation, and regulation.	PO6, PSO2
Compensation Management	MB304-2	CO1. Recognize the role of compensation in the organization.	PO1, PSO1
		CO2. Recognize how pay decisions help the organization achieve a competitive advantage.	PO3, PO6, PSO2
		CO3. Design a consistent compensation system.	PO4, PSO2
		CO4. Analyze various employee benefits and employee services.	PO4, PSO2
		CO5. Analyze challenges and design contemporary compensation systems in modern organizations.	PO6, PSO2
Product and Brand Management	MB304-3	CO1. Understand new product development process and various theories and models of new product development.	PO1, PSO2
		CO2. Design the portfolio strategies of a multi-business or multiproduct company.	PO3, PO6, PSO2
		CO3. Know how to develop new products professionally.	PO4, PSO2
		CO4. Understand perceptual maps and various models of preference choice market maps.	PO4, PSO2
		CO5. Know essential branding strategies to conquer the market.	PO6, PSO2
Decision Support System	MB304-4	CO1. Understand the concepts of Decision Support Systems (DSS) and their effect on management.	PO1, PSO1
		CO2. Study the components of DSS and the main players who participate in the decision process.	PO4, PSO2
		CO3. Study different types of modeling and analysis.	PO4, PSO2
		CO4. Explain key areas contributing to DSS such as knowledge acquisition, expert systems, and knowledge bases.	PO4, PSO2

		CO5. Study group decision support and groupware technologies within organizations.	PO4, PSO2

International Finance	MB305-1	CO1. Differentiate between fixed and floating rates.	PO1, PSO1
		CO2. Perform a detailed analysis of the foreign exchange market.	PO3, PSO2
		CO3. Make calculations relating to foreign exchange rates based on parity theories.	PO4, PSO2
		CO4. Demonstrate basic understanding of issues pertaining to multinational financing and investment decisions.	PO4, PO6, PSO2
		CO5. Analyze the international tax environment.	PO6, PSO2
Organization Development	MB305-2	CO1. Define the concepts in organizational development.	PO1, PSO1
		CO2. Explain different change models.	PO1, PO4, PSO2
		CO3. Describe reasons for people resisting change and strategies to reduce resistance.	PO2, PO6, PSO2
		CO4. Discuss and analyze diagnostic tools used to assess organizational effectiveness.	PO4, PSO2
		CO5. Assess and improve human resource management.	PO6, PSO2
Promotion and Distribution	MB305-3	CO1. Apply integrated marketing communication and its application in the challenging marketing environment.	PO1, PSO2
		CO2. Choose the right media for effective marketing decisions.	PO4, PSO2
		CO3. Recognize the role of personal selling in the digital marketing era.	PO3, PSO2
		CO4. Analyze complexities of channel management and choose the right distribution channels.	PO4, PO6, PSO2
		CO5. Understand various E-Business technologies.	PO6, PSO2
Business Analytics	MB305-4	CO1. Have a clear idea about the basic concepts of business analytics in an organization.	PO1, PSO1

		CO2. Demonstrate detailed knowledge about the role of business analytics in decision-making.	PO4, PSO2
		CO3. Distinguish between descriptive and predictive analytics and understand data warehousing and data mining.	PO4, PSO2
		CO4. Understand prescriptive analytics, including linear and non-linear programming.	PO4, PSO2
		CO5. Apply programming using R packages in various functional areas of an organization.	PO4, PSO2
Project Synopsis Presentation	MB306	CO1. Apply the knowledge of management theories and practices to solve business problems.	PO1, PSO1
		CO2. Study the existing literature and identify gaps.	PO1, PSO1
		CO3. Frame suitable objectives.	PO1, PO4, PSO1
		CO4. Identify the useful research techniques.	PO4, PSO1
Seminar on Contemporary Topics	MB307	CO1. Take up contemporary and relevant business issues for analysis.	PO1, PSO1
		CO2. Estimate and explain the intricacies of the problem.	PO1, PO4, PSO1
		CO3. Articulate and present the issue in multidimensional perspectives.	PO3, PO6, PSO2

MBA IV Semester COs and POs and PSOs Mapping

Name of the Course	Course Code	Course Outcomes	POs, PSOs
Financial Risk Management	MB401-1	CO1. Understanding the concept of risk and risk management approaches.	PO1, PO4, PSO2
		CO2. Make calculations to find out CAR and VAR.	PO4, PSO2
		CO3. Differentiate between forwards and futures.	PO4, PSO2
		CO4. Understand the valuation of swaps and hedging mechanisms.	PO4, PSO2
		CO5. Find the intrinsic value of options using BOPM and BSOPM.	PO4, PSO2
Performance Management	MB401-2	CO1. Understand the concept of performance management and its advantages.	PO1, PO2, PSO1
		CO2. Understand performance management as an ongoing process.	PO1, PO4, PSO1
		CO3. Understand different approaches to performance measurement.	PO4, PSO2
		CO4. Design a performance management system with competency mapping and pay plans.	PO4, PO6, PSO1
		CO5. Evaluate performance metrics and models.	PO4, PSO2
Consumer Behaviour	MB401-3	CO1. Apply theories of consumer behavior to formulate effective marketing strategies.	PO1, PO3, PSO2
		CO2. Recognize market trends based on current research related to consumer behavior.	PO3, PSO2
		CO3. Analyze challenges influencing marketing strategies from a consumer behavior perspective.	PO4, PSO2
		CO4. Understand the impact of socio-cultural settings on consumer behavior.	PO1, PO4, PSO2
		CO5. Identify dynamics of human behavior and factors influencing the consumer decision process.	PO4, PSO2
Banking and Insurance	MB402-1	CO1. Learn about the performance of banks in India.	PO1, PO4, PSO2
		CO2. Understand the sources and uses of funds in banks.	PO4, PSO2

		CO3. Understand innovations in the banking system.	PO4, PSO2
		CO4. Understand the role and principles of insurance.	PO1, PSO2
		CO5. Study life and general insurance in detail.	PO4, PSO2
Talent and Knowledge Management	MB402-2	CO1. Understand the meaning and importance of talent management.	PO1, PSO1
		CO2. Identify competency in designing a valid competency model.	PO4, PSO1
		CO3. Evaluate knowledge management and study key processes in knowledge-intensive firms.	PO4, PSO2
		CO4. Ideologize knowledge management infrastructure and approaches.	PO4, PSO2
		CO5. Analyze the impact of knowledge management on organizations.	PO6, PSO2
Services and Global Marketing	MB402-3	CO1. Understand the significance of services in the market.	PO1, PSO2
		CO2. Understand challenges in delivering quality services.	PO4, PSO2
		CO3. Apply marketing mix strategies for different service sectors.	PO4, PO6, PSO2
		CO4. Understand the global marketing environment.	PO3, PSO2
		CO5. Analyze global product planning and identify global customer needs.	PO4, PSO2
Software Project Management	MB402-4	CO1. Understand project planning and software products.	PO1, PO4, PSO2
		CO2. Recognize project evaluation and cost estimation techniques.	PO4, PSO2
		CO3. Understand activity sequencing and scheduling.	PO4, PSO2
		CO4. Recognize the importance of project management and control.	PO4, PSO2
		CO5. Recognize staffing requirements in software projects.	PO6, PSO2

Services and Global Marketing	MB402-3	CO1. Understand the significance of services in the market.	PO1, PSO2
		CO2. Understand challenges in delivering quality services.	PO4, PSO2
		CO3. Apply marketing mix strategies for different service sectors.	PO4, PO6, PSO2
		CO4. Understand the global marketing environment.	PO3, PSO2
		CO5. Analyze global product planning and identify global customer needs.	PO4, PSO2
Comprehensive Viva-Voce	MB404	CO1. Comprehend management knowledge and refresh fundamental concepts.	PO1, PO2, PSO1
		CO2. Improve understanding of subjects studied in previous semesters.	PO2, PSO1
		CO3. Recall and refresh concepts from different subjects.	PO2, PO6, PSO1
Comprehensive Viva-Voce	MB404	CO4. Enhance interview-facing skills.	PO3, PO6, PSO1