- **Department Name: Electronics and Telecommunication Engineering**

- **PG Program Name: M.Tech Digital System**

Vision and Mission :-

Vision :-

Promote excellence in the field of Electronics & Telecommunication Engineering and allied areas through quality education and research to provide valuable assets for industry and society.

Mission:-

- ➢ To provide quality education through need based curriculum, effective teaching learning process and state-of-art infrastructure.
- ➢ To inculcate research aptitude leading to patents and publications in refereed journals.
- ➢ To imbibe professional ethics, leadership skills, social, cultural & environmental awareness with a passion for lifelong learning.
- ➢ To strengthen relationships with industry, society, government bodies and alumni.

Sr. No.	Program Outcomes
1.	Demonstrate expertise in design and development of digital systems
2.	Independently carry out research and development work to solve practical problems
3.	Write and present a technical reports and documents
4.	Apply knowledge of engineering and project Management to carry out dissertation work
5.	Engage in Lifelong learning to improve Knowledge & competence in world of rapid technological changes.
6.	Follow professional ethics and moral responsibilities.

Sr. No.	Semester	Course Code	Course Name	Course Outcome
1.	I	EDS1014	RTL SIMULATION AND SYNTHESIS WITH PLDs	1. Illustrate finite state machines & rtl design using reconfigurable logic. 2. Design ip cores.. 3. Develop prototypes using ip cores with performance guarantees 4. Use eda tools like cadence, mentor graphics and xilinx
2.		EDS1024	MICROCOTROLLERS AND PROGRAMMABLE DIGITAL SIGNAL PROCESSORS	1. Explain basic concepts of ARM processor core based SoC with several features/pheripherals based on requirements of embedded applications 2. Identify and characterize architecture of programmable DSP processors 3. Develop small applications by utilizing the ARM processor core and DSP processor based platform 4. Describe IDE for C Language
3.		EDS1034	Programming Languages for Embedded Software	1. Write an embedded C application of moderate complexity 2. Develop and analyze algorithms in C++ 3. Differentiate interpreted languages from compiled languages

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4.		EDS1044	VLSI Signal Processing	1. Perform pipelining and parallel processing in FIR filter systems to achieve high speed and low power 2. Design VLSI architectures for basic DSP algorithms 3. Study various techniques for optimizing chip area 4. Optimize efficient architectures, algorithms and circuits improving size, power consumption and speed
4.		ECS1034	WIRELESS SENSOR NETWORK	1. Design wireless sensor network system for different applications under consideration 2. Understand the hardware details of different types of sensors and select right type of sensor for various applications. 3. Identify radio standards and communication protocols to be used for wireless sensor network based systems and application. 4. Use operating systems and programming languages for wireless sensor nodes 5. Evaluate issues related to sensors like energy conservation and security challenges.
5.		EDS1054	Network Security and Cryptography	1. Identify and utilize different forms of cryptography techniques

Sr. No.	Semester	Course Code	Course Name	Course Outcome
				2. Incorporate authentication and security in the network applications 3. Distinguish among different types of threats to the system and handle the same
6.		EDS1064	CAD of Digital Systems	1. Use various phase of CAD for digital electronic systems from digital logic simulation to physical design including test and verification 2. 2. Demonstrate computational and optimization algorithms and tools application to solvig CAD related problems 3. Develop simulate and Implement the system using VHDL
4.		ECS1084	MECHATRONICS BASED SYSTEM	1. Explain elements required to develop mechatronics system. 2. Design mechatronics based system for specified application 3. Describe applications of mechatronics systems
5.		EDS1074	RESEARCH METHODOLOGY AND IPR	1. Formulate a research problem. 2. Analyze research related information 3. Prepare and present research proposal/paper by following research ethics 4. Make effective use of computers and computing tools to search information, analyze information and prepare report. 5. Describe nature and processes involved in development of intellectual property rights

Sr. No.	Semester	Course Code	Course Name	Course Outcome
6.		EDS1084	RTL SIMULATION AND SYNTHESIS WITH PLDs LAB	1. Identify problems in signal processing, communication systems etc using rtl design tools 2. Describe problems in signal processing, communication systems etc using rtl design tools. 3. Solve problems in signal processing, communication systems etc using rtl design tools. 4. Implement problems in signal processing, communication systems etc using rtl design tools. 5. Use eda tools like cadence, mentor graphics and xilinx.
7.		EDS1094	MICROCOTROLLERS AND PROGRAMMABLE DIGITAL SIGNAL PROCESSORS LAB	1. Install, configure and utilize tool sets for developing applications based on arm processor core soc and dsp processor. 2. Develop prototype codes using commonly available on and off chip peripherals on the cortex m3 and dsp development boards. 3. Optimize the given code & debug.
8.	II	EDS2014	ANALOG AND DIGITAL CMOS VLSI DESIGN	1. Analyze, design, optimize and simulate analog and digital circuits using cmos constrained by the design metrics. 2. Design layout and testing of analog and digital circuits. 3. Use eda tools like cadence, mentor graphics and other open source software tools like ngspice.

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9.		EDS2024	VLSI Design verification and Testing	1. Use design and Verification techniques and create reusable test environments 2. Verify increasingly complex design more efficiently and effectively 3. 3. Implement test generation algoritms using EDA tools like Cadenc, Mentorgraphics
10.		EDS2034	Advanced Computer Architecture	1. Protocol, algorithm, tradeoffs rationale 2. Routing, transport, DNS resolutions 3. Network extension and next generation architectures
11.		EDS20144	Low Power VLSI Design	1. Identify the sources of power dissipation I digital IC systems and unde4rtstand the impact of power on system performance and reliability 2. Characterize and model power consumption and understand the basic analysis methods 3. Design low power and high performance systems 4. Explore on the latest techniques used for designing power efficient systems
12.		ECS2044	INTERNET OF THINGS	1. Identify iot technology in certain scenarios 2. Describe technology which are available for iot solution 3. Apply technology for iot applications
13.		EDS2054	System design with Embedded Linux	1. Design real time embedded systems using the concepts of RTOS 2. Write,debug and profile applications and drivesrs in embedded LINUX

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				3. Create LINUX BSP for a hardware platform 4. Design and embedded system with embedded Linux OS
14.		EDS2064	Physical Design Automation	1. Design automation problems in physical design process of VLSI circuits 2. Demonstrate logic partitioning, floor planning, placement global routing, clock and power routing techniques 3. Develop and enhance the existing algorithms and computational techniques for physical design process of VLSI systems
15.		EDS2074	ANALOG AND DIGITAL CMOS VLSI DESIGN LAB	1. Design digital and analog circuit using cmos. 2. Use eda tools like cadence, mentor graphics and other open source software tools like ngspice
16.		ECS2064	SOFT COMPUTING	1. Identify and describe soft computing techniques and their roles in building intelligent machines 2. Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems 3. Apply genetic algorithms to combinatorial optimization problems 4. Apply neural networks to pattern classification and regression problems 5. Effectively use existing software tools to solve real problems using a soft computing approach

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17.		SHP515	NUMERICAL COMPUTATION TECHNIQUES	1. Estimate the error. 2. Apply the relevant numerical method for interpolating the polynomial. 3. Develop the equation of the curve to fit for given data. 4. Estimate numerically the solution of given algebraic equation. 5. Use the relevant method for solving the simultaneous linear equations and compute the eigen values. 6. Construct the fuzzy set for given linguistic variable and apply fuzzy logic.
7.		EDS2084	VLSI DESIGN VERIFICATION AND TESTING LAB	1. Verify increasingly complex designs more efficiently and effectively. 2. Use eda tools like cadence, mentor graphics.
8.		SHP551	Technical Communication	1. Acquire skills required for good oral and written communication 2. Demonstrate improved writing and reading skills 3. Ensure the good quality of oral and written communication
9.		EDS52114	Mini project	1. Select title of mini-project and formulate its objectives correctly 2. Develop, simulate and implement the system by complying with desired technical specifications 3. Analyze and synthesize obtained results in theoretical and practical context

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				4. Present findings in logical order 5. Write a report to document his/her findings
10.		EDS3013	Field Training	1. Apply engineering knowledge learned during the program 2. Apply his/her technical skills to industrial problem 3. Propose creative and innovative solution to the given problem 4. Work in multi-disciplinary setting 5. Show concern for society, environment and other social concerns 6. Complete given tasks according to the industrial needs with full integrity and responsibility
11.		EDS3023	Dissertation Phase-I	1. Identify research opportunities in his/her domain or multidisciplinary domains 2. Formulate the problem statement and its objectives correctly 3. Apply the principles of project management during development of the project 4. Present synopsis in logical order 5. Write synopsis of the proposed system

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12.		EDS3033/ EDS3043	Dissertation Phase-II	1. Identify research opportunities in his/her domain or multidisciplinary domains. 2. Formulate the problem statement and its objectives correctly 3. Develop, simulate and implement the system by complying with desired technical specifications 4. Analyze and synthesize obtained results in theoretical and practical context 5. Present report in logical order 6. Write report of the system implementation 7. Apply the principles of project management during development of the project
13.		EDS4013	Dissertation Phase-III	1. Identify research opportunities in his/her domain or multidisciplinary domains. 2. Formulate the problem statement and its objectives correctly 3. Develop, simulate and implement the system by complying with desired technical specifications 4. Analyze and synthesize obtained results in theoretical and practical context 5. Present report in logical order 6. Write report of the system implementation

Sr. No.	Semester	Course Code	Course Name	Course Outcome
				7. Apply the principles of project management during development of the project
14.		EDS4023 EDS4033	Dissertation Phase-IV	1. Identify research opportunities in his/her domain or multidisciplinary domains. 2. Formulate the problem statement and its objectives correctly 3. Develop, simulate and implement the system by complying with desired technical specifications 4. Analyze and synthesize obtained results in theoretical and practical context 5. Present report in logical order 6. Write report of the system implementation 7. Apply the principles of project management during development of the project