DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Vision

Create eminent and ethical leaders in the field of Electronics and Communication through quality professional education to excel in academia and industry.

Mission

- Provide theoretical and practical knowledge through quality education and life skills training to make competent graduates with leadership and social commitment.
- To impart entrepreneurial orientation and motivation for research among the students through knowledge transfer between industrial, academic & research institutions.

Programme Specific Objectives

Professional skills: Associate the concepts related to Electronics, Communication, Embedded Systems,Signal Processing and VLSI to solve real life problems.

Problem solving ability: Comprehend technology advancement to analyze and design systems using modern design tools for the benefit of the society.

Lifelong learning and ethical Values: Have good communication skills, work as a team,develop leadership qualities,become professionals or entrepreneurs with ethical values.

Programme Educational Objectives

1. Graduates shall have fundamental and advanced knowledge in electronics and communication engineering along with knowledge in mathematics, science and computing and get employed in national or international organizations or government agencies.
2. Graduates shall have ability in analyzing, designing and creating innovative solutions which lead to a lifelong learning process or higher qualification, making them experts in their profession thus helping to solve electronics & communication engineering and social problems.

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3. Graduates shall have good organizing capability, presentation skills, communicating ability, leadership, team work and ethical practices.

Programme Outcomes

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and 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 and sustainability: Understand the impact of the 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.

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List of courses that integrates cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum

Sl. No	Subject	Subject Code	COURSE OBJECTIVE	Deployment Strategy and Tool	Cross cutting Issues Integrated
1	Introduction to Sustainable Engineering	BE 103	To have an increased awareness among students on issues in areas of sustainability To understand the role of engineering and technology within sustainabledevelopment To know the methods, tools, and incentives for sustainable product-service system development To establish a clear understanding of the role and impact of various aspects of engineering and engineering decisions on environmental, societal, and economic problems.	Chalk and talk method ,PPT,video	**Environment and Sustainability**
2	Engineering Chemistry	CY 100	To enable the students to acquire knowledge in the concepts of chemistryforEnvironment andSustainability engineering applications and to familiarize the students with different application oriented topics like new	Chalk and talk method, PPT	**Environment and Sustainability**

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			generation engineering materials,storage devices, different instrumental methods etc. And to develop abilities and skills that are relevant to the study and practice of chemistry.		
3	Engineering Physics	PH 100	Most of the engineering disciplines are rooted in Physics. In fact a good engineer is more or less an applied physicist. This course is designed to provide a bridge to the world of technology from the basics of science and to equip the students with skills in scientific inquiry, problem solving, and laboratory techniques.	Chalk and talk method, PPT	**Environment and Sustainability**
4	Design and Engineering	BE 102	o understand the engineering aspects of design with reference to simple products □ To foster innovation in design of products, processes or systems □ To develop design that add value to products and solve technical problems	Chalk and talk method and PPT	**Environment and Sustainability, Human Values and Professional Ethics**
5	Industrial Psychology & Organizational Behaviour	MP469	•To create a knowledge about human psychology •To learn about theories of motivation and group behavior. •To understand the socio-cultural aspects in organizations	Chalk and talk method,PPT	**Human Values and Professional Ethics into the Curriculum**
5	project	EC492	To apply engineering knowledge in practical problem solving.To foster innovation in design of products, processes or systems.To develop creative	Presentation and implementation	**cross cutting issues relevant to Gender, Environment**

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			thinking in finding viable solutions to engineering problems		**and Sustainability, Human Values and Professional Ethics into the Curriculum**
6	SUSTAINABLE ENERGY PROCESS	BT362	To introduce the current and potential future energy systems, covering resources, extraction, conversion, and applications, with emphasis on meeting regional and global energy needs in a sustainable manner	Presentation and implemenation	**cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum**
7	Life Skill	HS 210	To develop communication competence in prospective engineers. To enable them to convey thoughts and ideas with clarity and focus. To develop report writing skills. To equip them to face interview & Group Discussion. To inculcate critical thinking process. To prepare them on problem solving skills. To provide symbolic, verbal, and graphical interpretations of statements in a problem description. To understand team dynamics & effectiveness. To create an awareness on Engineering Ethics and Human Values. To instill Moral and Social Values, Loyalty and also to learn	Chalk and talk method, PPT	**cross cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum**

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			to appreciate the rights of others. To learn leadership qualities and practice them.		
8	PRINCIPLES OF MANAGEMENT	HS300	To develop ability to critically analyse and evaluate a variety of management practices in the contemporary context; To understand and apply a variety of management and organisational theories in practice; To be able to mirror existing practices or to generate their own innovative management competencies, required for today's complex and global workplace; To be able to critically reflect on ethical theories and social responsibility ideologies to create sustainable organisations.	Chalk and talk method and PPT	**Environment and Sustainability, Human Values and Professional Ethics**
9	Business Economics	HS200	To familiarize the prospective engineers with elementary Principles of Economics and Business Economics. To acquaint the students with tools and techniques that are useful in their profession in Business Decision Making which will enhance their employability. To apply business analysis to the firm under different market conditions. To apply economic models to examine current economic scenario and evaluate policy options for addressing economic issues.	Chalk and talk method and PPT	**Human Values and Professional Ethics**

			To gain understanding of some Macroeconomic concepts to improve their ability to understand the business climate. To prepare and analyse various business tools like balance		
10	EC 451	Seminar	□ To study the various types of environmental pollution □ To study the impact of various types of pollutants and their assessment techniques	Chalk and talk method and PPT	**Environment and Sustainability, Human Values and Professional Ethics**
11	Design Project	CS341	To understand the engineering aspects of design with reference to simple products □ To foster innovation in design of products, processes or systems □ To develop design that add value to products and solve technical problems	Chalk and talk method and PPT	**Environment and Sustainability, Human Values and Professional Ethics**

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