FACULTY OF ENGINEERING AND TECHNOLOGY
First Year Bachelor of Technology
In Effect from Academic Year 2018-19

Subject Code:1ET1000192	Subject Title: ETHICAL PRACTICES IN ENGINEERING
Pre-requisite Subject	-

Course Objective:

- To introduce engineering students to the concepts, theory and practice of engineering ethics in academic, professional, and personal life environments.
- To explore one's own values in ethical issues.
- To identify the core values that shapes the ethical behavior of an engineer.
- To improve skills in both written and oral communication with regard to ethical and professional issues in engineering.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
				Theory		Practical		
Lecture	Tutorial	Practical	Credit	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Total
-	2	-	-	-	-	-	-	-

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
1.	**Introduction to Engineering Ethics**	3	
	• Definition of ethics in general • Definitional Framework: beliefs, values, ethics, laws, morals, human rights, social responsibilities, freedoms, ethical problem, ethical breach, ethical dilemma • Ethics in general Vs Ethics in engineering • Importance of ethics in science and engineering		
2.	**Human values: an integral component of Engineering ethics**	3	
	• Concept of human values • Need and role of human values in a profession • Morals, Values and Ethics – Integrity – Work Ethic – Honesty – Courage –Empathy – Self-Confidence – Character		
3.	**Ethics in Engineering**	3	
	• Ethical theories : Immanuel Kant, Kohlberg's theory - Gilligan's theory Egoism, Utilitarianism • Models of Professional Roles - theories about right action - Self-interest - customs and religion - uses of ethical theories. Valuing Time – Co-operation – Commitment • Moral dilemmas, analysis, and hierarchy of moral values. • Distinguishing between external and internal morality		

4.	**Engineering and society**	3	
	• Engineering as social experimentation • Societal contribution of engineering • Consideration of social codes of conduct and well- wisher of society and environment • Engineer's scope of contribution		
5.	**Responsibilities and Human concern**	3	
	• Responsibilities to the workplace, society and nation as a whole • Moral leadership and environmental ethics • Cultural concern		

Course Outcome: At the end of the course, students can

- understand and appreciate the meaning of ethics, values and attitudes.
- be guided in their ethical thinking and considerations as they relate in their chosen field
- be aware of the different ethical dilemma/issues in all spheres of life
- appreciate and internalize the code of conduct for engineers.

List of References:

1. Seebauer, E.G. and Barry, R.L. *Fundamental of Ethics for Scientists and Engineers* (New York: Oxford University Press, 2001)
2. Martin, Mike and Schinzinger, Roland. *Ethics in Engineering*(McGraw-Hill, New York 1996).
3. Govindarajan M, Natarajan S, Senthil Kumar V. S, *"Engineering Ethics"*, Prentice Hall of India, New Delhi, 2004.
4. The Center for Engineering, Ethics and Society (CEES)http://www.onlineethics.org/ (for case studies)
5. Charles E Harris, Michael S. Protchard and Michael J Rabins, *"Engineering Ethics – Concepts and Cases"*, Wadsworth Thompson Leatning, United States, 2000 (Indian Reprint now available)

Tutorial work:

1. Discussion of case studies
2. Group discussion on global issues concentrating on ethics
3. Watching videos showing importance of ethical practices and worst outcome of unethical act