ENGINEERING ETHICS

Course Code	19MC1601	Year	III	Semester	II
Course Category	Mandatory Course	Branch	ME	Course Type	Theory
Credits	0	L – T – P	3 – 0 – 0	Prerequisites	Nil
Continuous Internal Evaluation	100	Semester End Evaluation	0	Total Marks	100

Course Outcomes		Levels
Upon successful completion of the course, the student will be able to		
CO1	Understand the core values that shape the ethical behavior of an engineer and Exposed awareness on professional ethics and human values	L2
CO2	Understand the basic perception of profession, professional ethics, various moral issues &uses of ethical theories	L2
CO3	Understand various social issues, Industrial standards, code of ethics and role of professional ethics in engineering field	L2
CO4	Demonstrate responsibilities of an engineer for safety and risk benefit analysis, professional rights and responsibilities of an engineer	L3
CO5	Acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives	L3

	Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Moderate, 1: Low)													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1						1	1	3	1	2				3
CO2						1	1	3	1	2				3
CO3						3	2	3		1				3
CO4						3	2	1						3
CO5						3	2	2		1	3			3

Syllabus		
Unit No	Contents	Mapped Cos
I	**HUMAN VALUES** Morals, values and Ethics –Integrity –Work ethic –Service learning –Civic virtue –Respect for others –Living peacefully –Caring –Sharing –Honesty –Courage –Valuing time –Cooperation –Commitment –Empathy –Self-confidence –Character –Spirituality –Introduction to Yoga and meditation for professional excellence and stress management.	CO1
II	**ENGINEERING ETHICS** Senses of „Engineering Ethics" –Variety of moral issues –Types of inquiry –Moral dilemmas –Moral Autonomy –Kohlberg"s theory –Gilligan"s theory –Consensus and Controversy –Models of professional roles – Theories about right action –Self-interest –Customs and Religion –Uses of Ethical Theories.	CO2

III	**ENGINEERING AS SOCIAL EXPERIMENTATION** Engineering as Experimentation –Engineers as responsible Experimenters – Codes of Ethics –A Balanced Outlook on Law.	CO3
IV	**SAFETY, RESPONSIBILITIESAND RIGHTS** Safety and Risk –Assessment of Safety and Risk –Risk Benefit Analysis and Reducing Risk –Respect for Authority –Collective Bargaining – Confidentiality –Conflicts of Interest –Occupational Crime –Professional Rights –Employee Rights –Intellectual Property Rights (IPR) – Discrimination.	CO4
V	**GLOBAL ISSUES** Multinational Corporations–Business Ethics-Environmental Ethics– Computer Ethics-Role in Technological Development–Weapons Development–Engineers as Managers–Consulting Engineers–Engineers as Expert Witnesses and Advisors–Honesty –Moral Leadership–Sample Code of Conduct.	CO5

Learning Recourse(s)
Text Book(s)
1. Mike W. Martin and Roland Scherzinger, "Ethics in Engineering", Tata McGraw Hill, New Delhi, 2003. 2. Govindarajan M, Natarajan S, Senthil Kumar V. S, "Engineering Ethics", Prentice Hall of India, New Delhi, 2004.
Reference Book(s)
1. Charles B. Fleddermann, "Engineering Ethics", Pearson Prentice Hall, New Jersey, 2004. 2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, "Engineering Ethics – Concepts and Cases", Cengage Learning, 2009
e-Resources & other digital material
1. www.onlineethics.org 2. www.nspe.org 3. www.globalethics.org 4. www.ethics.org