

## 19MC1601 - ENGINEERING ETHICS

Course Category:	Mandatory Course	Credits:	0
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
Prerequisites:	Nil	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

### Course Outcomes

Upon successful completion of the course, the student will be able to:

<b>CO1</b>	Understand the core values that shape the ethical behaviour of an engineer and Exposed awareness on professional ethics and human values.	K2
<b>CO2</b>	Understand the basic perception of profession, professional ethics, various moral issues & uses of ethical theories.	K2
<b>CO3</b>	Understand various social issues, Industrial standards, code of ethics and role of professional ethics in engineering field.	K2
<b>CO4</b>	Demonstrate responsibilities of an engineer for safety and risk benefit analysis, professional rights and responsibilities of an engineer.	K3
<b>CO5</b>	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.	K3

### Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>CO1</b>						1	1	1	2					3
<b>CO2</b>						1	1	1	2					3
<b>CO3</b>						3	2	2	1					3
<b>CO4</b>						3	2							3
<b>CO5</b>						3	2		1	3				3

1- Low

2-Medium

3-High

## Course Content

<b>UNIT-1</b>	<b>HUMAN VALUES</b> 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.	<b>CO1</b>
<b>UNIT-2</b>	<b>ENGINEERING ETHICS</b> 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.	<b>CO2</b>
<b>UNIT-3</b>	<b>ENGINEERING AS SOCIAL EXPERIMENTATION</b> Engineering as Experimentation –Engineers as responsible Experimenters –Codes of Ethics –A Balanced Outlook on Law.	<b>CO3</b>
<b>UNIT-4</b>	<b>SAFETY, RESPONSIBILITIES AND RIGHTS</b> 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.	<b>CO4</b>
<b>UNIT-5</b>	<b>GLOBAL ISSUES</b> Multinational Corporations –Business Ethics –Environmental Ethics –Computer Ethics –Role in Technological Development –Weapons Development –	<b>CO5</b>

Engineers as Managers–Consulting Engineers–Engineers as Expert Witnesses and Advisors–Honesty –Moral Leadership–Sample Code of Conduct.
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### **Learning Resources**

<b>Text Books</b>	<ol style="list-style-type: none"><li>1. Mike W. Martin and Roland Schinzinger, “Ethics in Engineering”, Tata McGraw Hill, New Delhi, 2003.</li><li>2. Govindarajan M, Natarajan S, Senthil Kumar V. S, “Engineering Ethics”, Prentice Hall of India, New Delhi, 2004.</li></ol>
<b>Reference Books</b>	<ol style="list-style-type: none"><li>1. Charles B. Fleddermann, “Engineering Ethics”, Pearson Prentice Hall, New Jersey, 2004.</li><li>2. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, “Engineering Ethics –Concepts and Cases”, Cengage Learning, 2009</li></ol>
<b>e-Resources&amp; other digital material</b>	<ol style="list-style-type: none"><li>1. <a href="http://www.onlineethics.org">www.onlineethics.org</a></li><li>2. <a href="http://www.nspe.org">www.nspe.org</a></li><li>3. <a href="http://www.globalethics.org">www.globalethics.org</a></li><li>4. <a href="http://www.ethics.org">www.ethics.org</a></li></ol>