



I Year- I Semester		L	T	P	C
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<b>PROFESSIONAL ETHICS AND HUMAN VALUES (R13108)</b>					

**Prerequisite Course:** The students should have awareness about Engineering, the industry, the problems, issues, challenges and think of solutions.

**Course Description and Objectives:**

1. The students learn and aware of basic principles of Professional Ethics and Human Values.
2. The students learn and aware of the evolution of professional Ethics and Human Values and theories and their application.
3. The students will be aware of engineering as Social Experimentation.
4. The students will be aware of Engineers' Responsibility for Safety and Risk.
5. The students will be aware of Engineers' Responsibilities and Rights.
6. The students will be aware of Global Issues.

**Course Outcomes:**

Upon completion of the course, the student will be able to achieve the following outcomes.

Cos	Course Outcomes	POs
1	Know the definitions, aware of basic Principles of PEHV and apply them	2
2	Know the theories and evolution of PEHV	3
3	Apply the principles Social Experimentation and solve the problems	3
4	Know the Responsibilities for Safety and Risk and study Case studies	3
5	Know the Responsibilities and Rights of Engineers	2
6	Know the Global issues, professional Associations, and contribution as consultants	2

**Syllabus:**

**UNIT I:**

Human Values: Morals, Values and Ethics – Integrity – Work Ethics – Service Learning – Civic Virtue – Respect for others – Living Peacefully – Caring – Sharing – Honesty –Courage – Value time – Co-operation – Commitment – Empathy – Self-confidence – Spirituality- Character.

**UNIT II:**

Engineering Ethics: The History of Ethics-Purposes for Engineering Ethics-Engineering Ethics-Consensus and Controversy –Professional and Professionalism –Professional Roles to be played by an Engineer –Self Interest, Customs and Religion-Uses of Ethical Theories-Professional Ethics-Types of Inquiry – Engineering and Ethics Kohlberg's Theory – Gilligan's Argument –Heinz's Dilemma.



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**

**KAKINADA–533003, Andhra Pradesh, India**

R-13 Syllabus for ECEJNTUK

**UNIT III :**

Engineering as Social Experimentation: Comparison with Standard Experiments – Knowledge gained – Conscientiousness – Relevant Information – Learning from the Past – Engineers as Managers, Consultants, and Leaders – Accountability – Role of Codes – Codes and Experimental Nature of Engineering.

**UNIT IV : :**

Engineers' Responsibility for Safety and Risk: Safety and Risk, Concept of Safety – Types of Risks – Voluntary v/s Involuntary Risk- Short term v/s Long term Consequences- Expected Probability- Reversible Effects- Threshold Levels for Risk- Delayed v/s Immediate Risk- Safety and the Engineer – Designing for Safety – Risk-Benefit Analysis- Accidents.

**UNIT V ; :**

Engineers' Responsibilities and Rights: Collegiality-Techniques for Achieving Collegiality –Two Senses of Loyalty- obligations of Loyalty misguided Loyalty – professionalism and Loyalty- Professional Rights –Professional Responsibilities – confidential and proprietary information-Conflict of Interest-solving conflict problems – Self-interest, Customs and Religion- Ethical egoism-Collective bargaining-Confidentiality-Acceptance of Bribes/Gifts when is a Gift and a Bribe-examples of Gifts v/s Bribes-problem solving-interests in other companies Occupational Crimes-industrial espionage-price fixing-endangering lives- Whistle Blowing-types of whistle blowing-when should it be attempted-preventing whistle blowing.

**UNIT VI :**

Global Issues: Globalization- Cross-culture Issues-Environmental Ethics-Computer Ethics-computers as the instrument of Unethical behaviour-computers as the object of Unethical Acts-autonomous computers-computer codes of Ethics- Weapons Development-Ethics and Research-Analysing, Ethical Problems in Research-Intellectual Property Rights.

**Text Books:**

1. "Engineering Ethics and Human Values" by M.Govindarajan, S.Natarajan and V.S.SenthilKumar PHI Learning Pvt. Ltd-2009
2. "Professional Ethics and Morals" by Prof.A.R.Aryasri, Dharanikota Suyodhana-Maruthi Publications
3. "Professional Ethics and Human Values" by A.Alavudeen, R.Kalil Rahman and M.Jayakumaran Laxmi Publications
4. "Professional Ethics and Human Values" by Prof.D.R.Kiran
5. "Indian Culture, Values and Professional Ethics" by PSR Murthy-BS Publication
6. "Ethics in Engineering" by Mike W. Martin and Roland Schinzinger – Tata McGraw-Hill – 2003.
7. "Engineering Ethics" by Harris, Pritchard and Rabins, CENGAGE Learning, India Edition, 2009.