

VME02 ETHICS IN ENGINEERING

COURSE OBJECTIVES:

- Understanding the importance of ethics and moral values in engineering practice.
- Developing awareness about professional responsibility and ethical decision-making.
- Understanding the role of engineers in society, environment, and sustainable development.
- Promoting integrity, accountability, and safety in engineering design and implementation.

COURSE OUTCOMES:

- Understand the fundamental principles of engineering ethics.
- Analyze ethical dilemmas and apply ethical decision-making frameworks.
- Recognize professional responsibilities towards society, safety, and environment.
- Follow codes of ethics and professional standards in engineering practice.

SYLLABUS

UNIT I – Introduction to Engineering Ethics (04)

Definition of Ethics – Importance of Ethics in Engineering – Moral Values and Professional Conduct – Ethics vs Law – Ethical Theories – Responsibility of Engineers to Society – Case Studies.

UNIT II – Professional Responsibilities of Engineers (06)

Engineering Profession – Roles and Responsibilities – Professional Integrity – Conflicts of Interest – Confidentiality – Intellectual Property Rights – Codes of Ethics.

UNIT III – Safety, Risk and Liability (07)

Safety and Risk in Engineering – Risk Assessment – Public Safety and Welfare – Product Liability – Negligence – Ethical Responsibility in Design.

UNIT IV – Environmental and Social Ethics (07)

Environmental Responsibility – Sustainable Development – Environmental Protection – Social Impact of Engineering Projects – Engineers and Public Policy.

UNIT V – Ethical Decision Making (06)

Ethical Decision Models – Ethical Dilemmas – Whistle Blowing – Corporate Social Responsibility – Ethical Leadership – Case Studies.

TOTAL: 30 PERIODS

TEXTBOOK:

Charles E. Harris et al., Engineering Ethics: Concepts and Cases, Cengage Learning.

REFERENCE BOOK:

Mike W. Martin & Roland Schinzinger, Ethics in Engineering, McGraw-Hill.