

**AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER**

**DEPARTMENT OF MECHANICAL ENGINEERING**

**ADDITIONAL MODULES INCLUDED IN THE TEACHING-LEARNING PROCESS**

<b>Module No.</b>	<b>Name of the module</b>	<b>Contents</b>
M1	Professional Ethics in Engineering	Engineering Ethics: Senses of 'Engineering Ethics', Variety of moral issues, Types of inquiry, Moral dilemmas, Moral Autonomy, Kohlberg's theory and Gilligan's theory, Consensus and Controversy, Professions and Professionalism, Professional Ideals and Virtues, Uses of Ethical Theories. Confidentiality, Conflicts of Interest, Occupational Crime, Professional Rights, Employee Rights. Moral Leadership, Code of Conduct, Corporate Social Responsibility. Professional Etiquettes. Engineering as Experimentation, Engineers as responsible Experimenters, Codes of Ethics, A Balanced Outlook on Law. Morals, values and Work Ethics
M2	Decision Making	Framework, methods, process; Problem Solving Steps and Problem Solving Tools, Techniques for prioritizing and choosing from options, decision strategies, Multi criteria decision making, Risk and opportunity analysis, Decision support tools and software
M3	Industrial Safety	Introduction to Industrial Safety, Risk Assessment & Hazard Identification, Industrial Hygiene, Occupational Health, Control of workplace hazards, Industrial Safety Management
M4	IPR	Introductions to Patents, Copyrights, Trademarks, Designs, Geographical Indications; Law of Patents, Indian IP Regime; Prior Art, Procedure, Management of IPR, Trade Secrets and Competition Law, Commercialization of Intellectual Property
M5	Technical writing	Seminar, Project Report, Product Specifications, Product Manuals, Assembly and Operating Manuals, Case studies, Technical marketing content
M6	Project Management	Project Management Framework, Project Management Processes, Role of the Project Manager, Project Integration Management, Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management, Project Stakeholder Management.
M7	Environmental studies and sustainable development	Concepts and strategies related to sustainable development and various components of environment, types, causes, effects and controls; Air, water, soil, chemical and noise pollution; Waste Management, Climate change, Environment Laws, ISO 14000 environmental management systems.
M8	Entrepreneurship	Introduction, The Start of the Entrepreneurial Journey, From Idea to Opportunity, Customer Validation and Customer Strategy, The Minimum Viable Product, Business Modelling, Strategy and Finance, Finding Ecosystem Support for your Innovation, Driving continuous improvement, opportunities for startup, Startup India Action Plan
M9	Economics and Financial Management for Engineers	Engineering present worth calculations, rates of return, pay back periods, life cycle costs; Effects of inflation and escalating prices; Financial statements, balance sheets, income statements, cash flow statements; Accounting principles; Capital budgeting and asset management for utilities and public infrastructure; Decision-making and analysis of capital alternatives; Financial management and business considerations

<b>Class</b>	<b>Semester</b>	<b>Module</b>	<b>Staff</b>
SE	I	Professional Ethics in Engineering (M1) Decision Making (M2)	Prof. S. T. Gadakh and Prof. K. K. Dighe Prof. S. B. Chaudhari
	II	Industrial Safety (M3)	Prof. O. U. Raktate
TE	I	Technical writing (M5) IPR (M4)	Prof. P. B. Wakchaure Prof. E. T. Bayas
	II	Project Management (M6) Environmental Studies and Sustainable Development (M7)	Prof. K. D. Dagale Prof. S. K. Amrutkar
BE	I	Entrepreneurship (M8)	Dr. V. D. Wakchaure, Prof. B. G. Shinde, Prof. S. K. Amrutkar
	II	Economics and Financial Management for Engineers (M9)	Dr. V. D. Wakchaure, Prof. D. S. Bajaj