



Amrutvahini College of Engineering, Sangamner

1.3.1: *Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum*

Upload the list and description of courses which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

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List of the course that address the crosscutting issues

The list of courses in each programme which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum is as given below.

Civil Engineering

Sr. No.	Core Course	Course No
1	SE Civil Engineering	Building Technology and Architectural Planning: 201001
2	SE Civil Engineering	Mechanics of structure: 201002
3	SE Civil Engineering	Geotechnical Engineering: 201008
4	SE Civil Engineering	Fluid Mechanics 201003
5	SE Civil Engineering	Survey: 201009
6	SE Civil Engineering	Concrete Technology: 201010
7	SE Civil Engineering	Structural Analysis: 201011
8	TE Civil Engineering	Hydrology and Water Resources; 301001
9	TE Civil Engineering	Design of Steel Structures; 301003
10	B.E. Civil Engineering	Elective IV Air pollution and Control: 401004 a

Computer Engineering

Sr. No.	Core courses	Course Name
1	SE Comp	210250: Business Communication Skills Lab
2	TE Comp	310254A - Information Security
3	BE Comp	410244(C): Cyber Security and Digital Forensics



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Electrical Engineering

Sr. No.	Core courses	Course Name
1	SE Electrical	203141: Power Generation Technology
2	SE Electrical	203145: Power System I
3	SE Electrical	[203145] Power System I
4	SE Electrical	203154: Solar Thermal Systems
5	SE Electrical	Audit Course II: Solar Photovoltaic System
6	SE Electrical	[203143] Analog and Digital Electronics
7	SE Electrical	203146: Electrical Machines-I
8	TE Electrical	303142: Electrical Machines-II
9	TE Electrical	303152A- Wind Energy System
10	TE Electrical	303150 : Energy Audit and Management
11	TE Electrical	303148 : Utilization of Electrical Energy
12	TE Electrical	311121: Industrial and Technology Management
13	TE Electrical	303149: Computer Aided Design of Electrical Machines
14	TE Electrical	303144: Electrical Installation Design and condition Based Maintenance
15	TE Electrical	303146: Power System-II
16	TE Electrical	303141: Advance Microcontroller and its Applications
17	TE Electrical	Audit Course III 303152(B): Microcontroller MSP 430 and Applications
18	BE Electrical	403143A: PLC and SCADA Applications
19	BE Electrical	403144(B): Electric and Hybrid Vehicle
20	BE Electrical	403141:Power System Operation and Control
21	BE Electrical	403148: Switchgear and Protection
22	BE Electrical	403 150 C-Elective III: Smart Grid

Electronics Engineering

Sr. No.	Core courses	Course Name
1	SE ELEX & COMP	204189:Electronic Skill Development
2	SE ELEX & COMP	204199:Employability Skill Development
3	SE ELEX & COMP	204190F:Audit Course-I Introduction to Japanese Language & Culture
4	SE ELEX & COMP	204201A:Audit Course-II: Enhancing Soft Skill & Personality
5	TE ELEX & COMP	310351A:Professional Ethics and Etiquettes
6	TE ELEX & COMP	310351B:Digital & social Media Marketing
7	TE ELEX & COMP	310352:Software Engineering and Project Management



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8	TE ELEX & COMP	310353:Computer Networks and Security
9	BE ELEX	404209A:Management Information system

Electronics & Telecommunication Engineering

Sr. No.	Core courses	Course Name
1	SE E&TC	204189: Electronic Skill Development
2	SE E&TC	204199: Employability Skill Development
3	TE E&TC	Japanese Language Audit Course (Audit Course)
4	TE E&TC	Cyber and Information Security (Audit Course)
5	TE E&TC	304188: Business Management
6	BE E&TC	Green Energy (Audit Course)
7	BE E&TC	Environmental issues and Disaster Management (Audit Course)

Engineering Science

Sr. No.	Core Course	Course Name
1	FE. Common	101007: Audit course
2	FE. Common	107009 :Engineering Chemistry
3	FE. Common	110013: Project based learning

Information Technology

Sr. No.	Core courses	Course Name
1	SE IT	214449: Soft Skills
2	TE IT	314450C: Foreign Language (Japanese Language-III) (Audit Course)
3	BE IT	314444: Human Computer Interaction

Mechanical Engineering

Sr. No.	Core courses	Course Name
1	SE Mech	202052 - Project Based Learning - II
2	SE Mech	202046 - Audit Course - III
3	SE Mech	202053 - Audit Course - IV
4	TE Mech	302055: Internship/Mini project
5	TE Mech	302047: Skill Development
6	BE Mech	Energy Audit and Management (Elective V) (402050B)
7	BE Mech	Industrial Engineering (Elective III) (402044D)



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Production Engineering

Sr. No.	Core courses	Course Name
1	SE A&R	202046 - Audit Course - III
2	SE A&R	202053 - Audit Course - IV
3	TE A&R	302048 - Audit Course - IV
4	TE A&R	302056 - Audit Course - IV
5	BE Prod.	411087 - Audit Course 7
6	BE Prod.	411093- Audit Course 8

MBA

Sr. No.	Core courses	Course Name
1	MBA first year	GC-02: Organizational Behaviour
2	MBA first year	GE-UL-11: Business, Government & Society
3	MBA second year	GC-15: Indian Ethos & Business Ethics
4	MBA second year	GC-UL-22: Corporate Social Responsibility & Sustainability



Description of courses which address the crosscutting issues

Description of courses which address the crosscutting issues in each programme is given below:

Civil Engineering

Core Course	Course No	Cross Cutting Issue	Description of Course
SE Civil Engineering	Building Technology and Architectural Planning: 201001	Professional Ethics	This course enables the students to understand the concept of types of building and basic requirements of building components.
		Environmental sustainability	This course creates awareness regarding eco friendly materials and safety in construction.
		Human Values	While designing the building principle of planning are follows.
SE Civil Engineering	Mechanics of structure: 201002	Professional Ethics	Material quality control by understanding by experimental investigation in laboratory as safety, Environmental impact and health. For the technological alternative it is essential to determine the physical properties of materials like, strength, toughness and, malleable, ductile, good conductors of heat and electricity. And other parameter to do the comparison.
		Environmental sustainability	Use materials in the most productive way with an emphasis on using less. Reduce Environmental impacts throughout the material life cycle. Assure we have sufficient resources to meet today's needs and those of the future. Norms of practice e.g IS codes
SE Civil Engineering	Geotechnical Engineering : 201008	Environmental Sustainability	The course highlights the causes and remedial measures of landslide. It also enables the students to understand evil effect of subsurface contamination on subsoil and various methods to control subsurface contamination.
SE Civil Engineering	Fluid Mechanics 201003	Professional Ethics	In this subject student get idea about various properties of fluid and how to measure the pressure using various gauges. Also students get idea about energy losses in pipes and remedial measure to avoid friction losses.
SE Civil Engineering	Survey: 201009	Professional Ethics	This course deals with the study of different types of surveying instruments and methods of surveying. This involves the survey for different types of works such as road work, building work, tunnel work, dam work etc. This course gives what are the different professional ethics we should follow while doing work in team.
		Environmental Sustainability	In this course while doing the survey for different work, we should follow the different guidelines which will takes into consideration effect of future work on the Environmental. This course creates the awareness among the students regarding the sustainability by following the guidelines which will reuse the



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Core Course	Course No	Cross Cutting Issue	Description of Course
			different natural materials for the proposed work.
SE Civil Engineering	Concrete Technology :201010	Professional Ethics	This course highlights the importance of concrete in the field of construction. Understanding the various properties of construction materials, testing of materials, different types of cement and concrete used for the construction work. Concrete mix design helps for selecting the proper proportion of ingredients.
SE Civil Engineering	Structural Analysis: 201011	Environmental Sustainability	In this course students get aware about safety requirements of various structure.
TE Civil Engineering	Hydrology and Water Recourses 301001	Professional Ethics	Students learn the rainfall, runoff and flood hydrograph related study; also study related to Irrigation, water management planning, regulating, designing, and construction, operation, maintenance and cost allocation of canal.
		Environmental Sustainability	After finding duty and delta for particular crop saving of water can be done.
		Environmental Sustainability	Create awareness about Public transport systems such as railway, concept of smart city.
TE Civil Engineering	Design of Steel Structures 301003	Professional Ethics	In this course students get aware about safety requirements of various steel structures.
		Environmental Sustainability	Saving of material after designing the steel member from IS 800:2007
BE Civil Engineering	Elective IV Air pollution and Control: 401004 a	Environmental Sustainability	This course contains Environmental issues related to air pollution problem. It involves importance of atmosphere, balance of ecosystem, control of all types of air pollution. The course helps in developing knowledge about control equipment's of air pollution, rule and regulation for emission control.
		Professional Ethics	This course enables the students to under the composition of air, investigation of air quality problems, use of various control equipment's, legislation and regulation in air pollution control, Environmental impact assessment and management.

Computer Engineering

Core courses	Course Name	cross cutting issue	Description of course
SE Comp	210250: : Business Communication Skills	Professional ethics , Communication Skills	The course highlights the importance of 1. To encourage the all-round development of students by focusing on soft skills. 2. To make the engineering students aware of the importance, the role and the content of soft skills through instruction, knowledge acquisition, demonstration and practice. 3. To develop and nurture the soft skills of the students through individual and group activities. 4.To expose students to right attitudinal and behavioral aspects and to build the same through



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			activities
TE Comp	310254A: Elective II- Information Security	Environment and Ecology, Sustainability	This course enables the students to understand meaning of following 1. To prepare the students to various forms of the Information Systems and its application in organizations. 2. To expose the students to the managerial issues relating to information systems and help them identify and evaluate various options in Information Systems. 3. To Prepare engineering students to analyze cost / revenue data and should able to do economic analyses in the decision making process to justify or reject alternatives / projects on an economic basis for an organization.
BE Comp	410244(C): Cyber Security and Digital Forensics	Human Values, Ethical values, Professional ethics, Sustainability, Adaptability	This course enables the students to understand meaning of 1.To offer an understanding of principle concepts, central topics and basic approaches in information and cyber security. 2.To know the basics of cryptography. 3. To acquire knowledge of standard algorithms and protocols employed to provide confidentiality, integrity and authenticity. 4. To enhance awareness about Personally Identifiable Information (PII), Information Management, cyber forensics.

Electrical Engineering

Core courses	Course Name	cross cutting issue	Description of course
SE Electrical	203141:Power Generation Technology	Environment and Ecology,	This course teaches how the generation system works with different fuels like coal, Nuclear material. It involves renewable energy sources to reduce increasing carbon emission.
		Sustainability	It highlights the importance of national productivity and sustainable development
SE Electrical	[203145] Power System I	Professional ethics	The course highlights the importance of power system in the field of Electrical Engineering. Understanding of various equipments used in power station, design calculations of mechanical infrastructure of power system components. Analysis of various parameters like Resistance and Inductance, Capacitance of Transmission lines and Performance of Transmission lines.
SE Electrical	203142: Material Science	Professional ethics	This course enables the students to understand properties of electrical engineering materials based on personal values. This highlights the selection of materials for applications in various electrical equipment.
		Environment and sustainability	This course increases awareness among students about environment and green technology using nanotechnology, battery and solar materials and create attitude towards sustainable lifestyle.



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SE Electrical	203154:Solar Thermal Systems	Professional ethics, Environment and sustainability	This course enables the students to understand basics and types of solar thermal systems, aware of different Standards and certification for Concentrator Solar Power.Solar energy is one of the cleanest sources of energy, and it's an extremely effective way of your household more efficient and sustainable. Solar panels don't use any water to generate electricity, they don't release harmful gases into the environment, and the source of their energy is abundant and, best of all, free.
SE Electrical	Audit Course II: Solar Photovoltaic System	Human Values, Environment, Sustainability	This course creates awareness to student about clean and green energy and this is very helpful for healthy life.
SE Electrical	[203143] Analog and Digital Electronics	Professional ethics Environment and sustainability	To create the awareness among students to follow preventive measures of safety to reduce electric, electronics shock and related accident. Try to avoid electronics waste and try to recycle and reused the electronics components. So that effective implementation of e waste management will be initiated. Through the e waste management save the 2 degree Celsius temperature of global according to paris contract 2020 for sustainable development goals target.
SE Electrical	203146: Electrical Machines-I	Environment and sustainability Professional ethics	Testing of transformer performance by indirect loading method results in energy conservation and hence reduces impact on environment. Understand best selection of machines for specific application based on cost & performance without compromising with safety.
TE Electrical	303142: Electrical Machines-II	Environment and sustainability	Testing of 1 ph induction motor performance by indirect loading method results in energy conservation and hence reduces impact on environment.
TE Electrical	303152A- Wind Energy System	Professional ethics,	The course create awareness about energy conservation by using wind energy system, generator design, standards and certification, quality assurance and standards, site assembling and fabrications.
		Environment and sustainability	This subject highlights environmental impacts of wind electricity generator, economics and sustainability of wind electricity, environmental impact and assessment.
TE Electrical	303150 : Energy Audit and Management	Professional ethics	Create awareness about energy conservation, Energy Management Strategy, energy security, Responsibilities and duties of energy manager
		Environment and Sustainability	Create awareness on Renewable sources of energy that will not result in pollution and it can be reused. This subject also gives information about importance of energy conservation, energy and environmental impacts.
TE Electrical	303148 : Utilization of Electrical Energy	Professional ethics	The course teaches to apply knowledge acquired can be applied in various fields such as electric heating, illumination, chemical processes, and electric traction, aware about the importance of maximizing the energy efficiency by optimum utilization of electrical energy. To develop ability



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			amongst the students to analyze the performance of arc furnaces, electric traction, different sources of light, illumination schemes.
TE Electrical	311121: Industrial and Technology Management	Professional ethics,	To learn the rules of good behavior for today's most common social and business situations. To create the awareness among students to follow the professional ethics, avoid the plagiarism of Patent, IPR, copyright, etc
		leadership	To develop inter personal skills and be an effective goal oriented leader and to develop personalities of students in order to empower them and get better insights into ones responsibilities in personal life to build better human being.
		Human Values	To create the awareness among students to follow human values such as honesty, discipline, sincerity, etc. To introduce the students to skills necessary for getting, keeping and being successful in a profession To expose students to right attitudinal and behavioral aspects and to build the same through activities
TE Elect	303149: Computer Aided Design of Electrical Machines	Professional ethics.	The course teaches to apply knowledge of Electrical Machines, for engineering applications, Design of electrical machine as well as to analyze different parameters, Design a machine to meet desired needs within safety of IS Standard.
TE Electrical	303144: Electrical Installation Design and condition Based Maintenance	Professional ethics,	The course teaches to basic concepts, design and estimation of distribution systems & substation.
		environment, sustainability,	Practice professional and ethical responsibility to carry out the maintenance of electrical devices to ensure the reliable working of the same
		Human Values	Ensures the electrical safety about human being while working in factory. To take the Prevention of Accidents & precautions and understanding of CPR treatment to be followed in the factory.
TE Electrical	303146: Power System-II	Professional ethics,	The course teaches the concept of transmission line to apply knowledge of mathematics, science for engineering applications. Identify, formulate, and solve engineering problems, Practice professional and ethical responsibility. Use the techniques, skills, and modern engineering tools such as matlab necessary for engineering practice.
		Environment and sustainability, Human Values	The course teaches design and conduct experiments, as well as to analysis of load flow, understand a corona effect for realistic constraints on health and safety
TE Electrical	303141: Advance Microcontroller and its Applications	Professional ethics, environment, sustainability	The course teaches to apply knowledge of mathematics, science for engineering applications, Design and conduct experiments, as well as to analyze and interpret data, Design a component to meet desired needs within realistic constraints of health and safety, Identify, formulate, and solve engineering problems, Practice professional and ethical responsibility, Use the techniques, skills,



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			and modern engineering tools necessary for engineering practice
TE Electrical	Audit Course III 303152(B): Microcontroller MSP 430 and Applications	Professional ethics, sustainability	The course teaches to apply knowledge of mathematics, science for engineering applications, Design and conduct experiments, as well as to analyze and interpret data, Design a component to meet desired needs within realistic constraints of health and safety, Identify, formulate, and solve engineering problems, Practice professional and ethical responsibility, Use the techniques, skills, and modern engineering tools necessary for engineering practice
BE Electrical	403143A: PLC and SCADA Applications	Professional ethics	The course teaches to apply knowledge gained about PLCs and SCADA systems to real-life industrial applications and make our system safer by automation. This subject give knowledge of automation for improving quality and quantity of manufactured product in industries
BE Electrical	403144(B): Electric and Hybrid Vehicle	Human Values, Environment and Ecology, Ethical values, Sustainability	This course enables the students to understand the importance of environment, makes the young generation students aware of their social responsibilities, increases awareness among students about environment and create attitude towards sustainable lifestyle, also Highlights of the national sustainable development and inclusive growth.
BE Electrical	403141 :Power System Operation and Control	Professional Ethics	This course teaches how the power system utilities work to provide Electricity from generation end to end consumer. It involves different operations to maintain good quality of power supply and the control techniques related to it.
		Human Values	To imagine life without these systems is a thought experiment that is virtually impossible. Simply put; life in a world without these systems would be nearly unrecognizable in comparison to the life that most of us currently lead.
BE Electrical	403148: Switchgear and Protection	Professional ethics	This course enables the students to understand arc interruption methods ,construction and working of different types of circuit breakers, Describe different type of relays, Practice professional and ethical responsibility, Use the techniques, skills, and modern engineering tools necessary for to resolve faults occurs in system.
BE Electrical	403 150 C- Elective III: Smart Grid	Professional ethics,	This course enables the students to understand evolution of smart grid enabling technology about intelligent control of power grid with the various generating sources of electricity.
		Environment Sustainability	Social responsibilities, increases awareness among students about environment use of renewable and create attitude towards sustainable lifestyle.



Electronics/ Electronics & Computer Engineering

Core courses	Course Name	Cross cutting issue	Description of course
SE ELEX & COMP	204189:Electronic Skill Development	Professional ethics	The course highlights the importance of basic electronics engineering, fundamentals of programming, open source electronics platform based on easy to use hardware & software for development of electronics applications.
SE ELEX & COMP	204199:Employability Skill Development	Professional ethics, Human values, Ethical Values	The course teaches to- 1. Develop good communication skills – both oral as well as written. 2. Encourage creative and critical thinking 3. Nurture collaborative behavior to work efficiently in groups
SE ELEX & COMP	204190F:Audit Course-I Introduction to Japanese Language & Culture	Professional Ethics, Human values	The course highlights the needs of ever growing industry with respect to language support & introduced to Japanese society and culture through language .
SE ELEX & COMP	204201A:Audit Course-II: Enhancing Soft Skill & Personality	Professional Ethics, Human Values	Improves communication, interaction & presentation of idea. Develop right attitudinal & behavioral change.
TE ELEX & COMP	310351A:Professional Ethics and Etiquettes	Professional Ethics, Human Values	The course teaches to- 1. Summarize the principles of proper courtesy as they are practiced in the workplace. 2. Describe ways to apply proper courtesy in different professional situations. 3. Practice appropriate etiquettes in the working environment and day to day life. 4. Build proper practices for global corporate world.
TE ELEX & COMP	310351B:Digital & social Media Marketing	Professional Ethics,	At the end of this course, learner would be able to: 1. Understand the concept of digital marketing and its real-world iterations 2. Articulate innovative insights of digital marketing enabling a competitive edge 3. Understand how to create and run digital media based campaigns 4. Identify and utilize various tools such as social media etc.
TE ELEX & COMP	310352:Software Engineering and Project Management	Professional Ethics	Course introduce the students to software engineering, the fundamentals of software engineering principles and practices, including project management, configurations management, requirements definition, system analysis, design, testing, and deployment with hands-on experience in a group software development project .



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	310353:Computer Networks and Security	Environment , Sustainability	Course highlights security issues involved in LAN and Internet
BE ELEX	404209A:Management Information system	Professional Ethics,	This course introduces the students to existing and upcoming technologies, wide variety of their applications for business and e-Commerce, and issues involved in their management.

Electronics and Telecommunication Engineering

Core courses	Course Name	Cross Cutting Issue	Description of course
SE E&TC	204189: Electronic Skill Development	Professional ethics	The course highlights the importance of Basic Electronics Engineering, Fundamentals of Programming, Open Source electronics platform based on easy-to-use hardware and software for the design of electronic circuits.
SE E&TC	204199: Employability Skill Development	Professional ethics, Human Values, Ethical values	The course teaches to apply knowledge of and Practice professional and ethical responsibilities such as Understanding Self and Soft Skills, Leadership Skills and Group Dynamics, and Quantitative Ability & Logical Reasoning. The course objectives are: Develop good communication skills – both oral as well as written. Encourage creative and critical thinking among students. Nurture collaborative behavior to work efficiently in groups.
TE E&TC	Japanese Language Audit Course (Audit Course)	Human Values, Ethical values, Professional ethics	This course enables the students to learn Japanese language and its cultural issues with utmost professionalism to adapt in the work culture.
TE E&TC	Cyber and Information Security (Audit Course)	Human Values, Ethical values, Professional ethics, and Sustainability	This course enable the students to understand To learn the issues of security in IT To investigate various security threats in IT To increase the awareness about information and network security
TE E&TC	304188: Business Management	Human Values, Ethical values, Professional ethics	This course enables the students to learn Human Values, Ethical values, Professional ethics. The course objectives are: To get awareness about various domains in Business Management. To understand concept of Quality Management, Financial Management and Project Management. To learn Human Resource Management, marketing management are the major tasks in Business
BE E&TC	Green Energy (Audit Course)	Human Values, Ethical values, Environment and Sustainability	This course provides an introduction to energy systems and renewable energy resources, with a scientific examination of the energy field and an emphasis on alternate energy sources and their technology and application. The students will explore society's present needs and future energy demands,



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			examine conventional energy sources and systems, including fossil fuels and nuclear energy, and then focus on alternate, renewable energy sources such as solar, biomass (conversions), wind power, geothermal, and hydro. Energy conservation methods will be emphasized.
BE E&TC	Environmental issues and Disaster Management (Audit Course)	Human Values, Ethical values, Environment and Sustainability	This course enables the students to learn the issues related with Environment and Sustainability. The course objectives are: To develop understanding of Environment Issues and Biodiversity To introduce to the students the environment, Disaster Management To enable students to understand ecosystem and preservation of environment To understand Disaster Management and handling them

Information Technology

Core courses	Course Name	cross cutting issue	Description of course
SE IT	214449: Soft Skills	Professional ethics , Communication Skills	The course highlights the importance of 1. To encourage the all-round development of students by focusing on soft skills. 2. To make the engineering students aware of the importance, the role and the content of soft skills through instruction, knowledge acquisition, demonstration and practice. 3. To develop and nurture the soft skills of the students through individual and group activities. 4.To expose students to right attitudinal and behavioral aspects and to build the same through activities
TE IT	314450C: Foreign Language (Japanese Language-III) (Audit Course)	Human Values, Ethical values, Professional ethics.	This course enables the students to learn Japanese language and its cultural issues with utmost professionalism to adapt in the work culture.



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TE IT	314444 : Human Computer Interaction.	Human Values, Ethical values, Professional ethics, Sustainability, Adaptability	<p>This course enables the students to understand meaning of</p> <ol style="list-style-type: none"> 1. A greying society, with an increasingly aged work force. 2. Short technological life cycles triggered by fast changing technological systems and resulting in fast changing mental models of technology. 3. An increase in the complexity of technologies to be handled by divers skilled workers <p>Understanding of invisible technology.</p>
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Mechanical Engineering

Core courses	Course Name	Cross- cutting issue	Description of course
SE Mech	202052 - Project Based Learning - II	Human Values, Professional ethics, Environment and Sustainability.	The mainstream engineering education follows traditional classroom teaching, in which the major focus is mainly on the lecture and the student has very little (if any) choice on the learning process. However this course will help in adopting a teaching approach that would assist students not only in developing a core set of industry relevant skills, but also enable them to adapt to changes in their professional career.
SE Mech	202046 - Audit Course - III	Human Values, Professional ethics	Such audit courses can help the student to get awareness of different issues which make an impact on human lives and enhance their skill sets to improve their employability.
SE Mech	202053 - Audit Course - IV	Human Values, Professional ethics	Such audit courses can help the student to get awareness of different issues which make an impact on human lives and enhance their skill sets to improve their employability.
TE Mech	302055: Internship/Mini project	Professional ethics, Environmental Awareness, social ethics	Internship provides an excellent opportunity to learner to see understand the conceptual aspects learned in classes and deployed into the practical world. Industry/on project experience provides much more professional experience as value addition to classroom teaching.
TE Mech	302047: Skill Development	Professional ethics, Environmental Awareness	Students will learn the skills required in an industry such as design, development, assembly & disassembly. Students will learn the skills required for fault diagnose of engine and transmission of different automotive and various home appliances. Students will also learn the skills required for maintenance of any machine tool. awareness about industrial environment..
BE Mech	Energy Audit and Management (Elective V) (402050B)	Professional ethics, environment and sustainability	Significance of Waste heat recovery and Cogeneration. Energy Audit of the residence / society / college where students are studying. - Carry out electrical tariff calculation and accurately predict the electricity bill required for the installation. - Suggest various methods to reduce energy consumption of the equipment / office / premises



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BE Mech	Industrial Engineering (Elective III) (402044D)	Professional ethics, Human values.	This course teaches the students to apply the Industrial Engineering concept in the industrial environment, Manage and implement different concepts involved in methods study and understanding of work content in different situations, Undertake project work based on the course content, Describe different aspects of work system design and facilities design pertinent to manufacturing industries, Identify various cost accounting and financial management practices widely applied in industries, Develop capability in integrating knowledge of design along with other aspects of value addition in the conceptualization and manufacturing stage of various products.
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Automation & Robotics and Production Engineering:

Core courses	Course Name	cross cutting issue	Description of course
SE A&R	202046 - Audit Course - III	Professional ethics	The course highlights the importance of technical English and its importance in the industrial field.
SE A&R	202053 - Audit Course - IV	Professional ethics	This course enables the students to understand the technical writing/research writing skills which will be helpful to pursue their research in higher learning.
TE A&R	302048 - Audit Course - IV	Professional ethics	The course creates awareness about entrepreneurship and IP strategy among the students.
TE A&R	302056 - Audit Course - IV	Professional ethics	This course enables the students to understand management information system in industrial environment.
BE Prod.	411087 - Audit Course 7	Human Values	This course enables the students to understand the importance and different approaches to Human rights, different mechanisms of United Nations to ensure and protect the Human Rights, different Constitutional provisions and legislations to protect Human Rights in India, Analyse the functions of NHRC, Judiciary and PIL for protecting Human Rights in India, Examine the challenges to Human Rights of different vulnerable sections.
BE Prod.	411093 - Audit Course 8	Professional ethics	The course creates awareness about leadership excellence. The major thrust areas are team working and collaborations, meeting and email etiquettes, time management.

Engineering Science (First Year Engineering)

Core Course	Course Name	Cross cutting issue	Description of course
FE. Common	101007: Audit course	Environmental Study	This course highlights on knowledge about concepts and strategies related to sustainable development and various components of environment..Also creates awareness and gives information related to biotic and abiotic factors within an ecosystem, to identify food chains, energy flow and relationships. This course enhances ability to understand the value of biodiversity and current efforts to conserve biodiversity on national and local scale.



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FE. Common	107009 : Engineering Chemistry	Natural resources and fuels	Engineering Chemistry gives knowledge of sources of water, how surface water ,rain water and underground water becomes impure due to man made activities. This course also give practical knowledge of analysis of water regarding its impurities in terms of hardness level, alkalineness of water etc. It also elaborates various renewable and non renewable sources of energy, use of solid ,liquid and gaseous fuels for domestic and industrial purposes.
FE. Common	110013: Project based learning	Social learning	This course enables students to relate daily issues with learning .while doing mini project in group student will learn finding an issue, then study material available related to that project, fining materials required for its construction, to think in group and find solution and finally construct project.

MBA

Core courses	Course Name	cross cutting issue	Description of course
MBA first year	GC-02: Organizational Behaviour	Professional ethics, Moral & ethical values, Gender equality	Course focuses on crosscutting issues such as Human values, conflict management, stress management. Course covers areas like personality, attitude, perception, leadership, group & team dynamics.
MBA first year	GE-UL-11: Business, Government & Society	Ethical Behaviour, Social Responsibilities, gender issues, social justice	Course focuses on crosscutting issues such as Ethical Behaviour, Social Responsibilities, gender issues, social justice
MBA second year	GC-15: Indian Ethos & Business Ethics	Universal Human values, Indian heritage scriptures, Business Ethics, Climate Change, Natural resource depletion	Course focuses on crosscutting issues such as Universal Human values, Indian heritage scriptures, Business Ethics, Climate Change, Natural resource depletion
MBA second year	GC-UL-22: Corporate Social Responsibility & Sustainability	Corporate Social Responsibility, CSR Expectations in rich and poor societies	Course focuses on crosscutting issues such as Corporate Social Responsibility, CSR Expectations in rich and poor societies