

# PSN College of Engineering and Technology (Autonomous)



Melathediyoor, Tirunelveli - 627 152, Tamilnadu

Approved by AICTE and Affiliated to Anna University

Accredited by NAAC and Recognised by UGC under section 2(f) and 12(B)

An ISO 9001 : 2015 Certified Institution



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## Curriculum Enrichment - Courses

Sl. No.	Activity	Supporting Document
1	Environmental Science	<a href="#">View Document</a>
2	Professional Ethics	<a href="#">View Document</a>
3	Value Education and Human Values	<a href="#">View Document</a>



**PSN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
(Autonomous)  
Melathediyoor, Tirunelveli

**MANDATORY COURSES FOR B.E. DEGREE PROGRAMME**

**COMING UNDER REGULATION 2018**

<b>501801</b>	<b>ENVIRONMENTAL SCIENCE</b> (To be offered in the III Semester)			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
				2	0	0	2
<b>Programme:</b>	B.E (CSE)	<b>Sem:</b>	03	<b>Category:</b>		BS	
<b>Prerequisite:</b>	Engineering Chemistry						
<b>Aim:</b>	To learn the students about our Environmental System						
<b>Course Objectives:</b>							
	To study about the dynamic processes and understand the features of the earth's interior and surface conditions.						
<b>Course Outcomes:</b> At the end of the course, students would:							
<b>CO1:</b>	Understand the different environmental systems						
<b>CO2:</b>	Know about biodiversity.						
<b>CO3:</b>	Understand different environmental pollution						
<b>CO4:</b>	Study and understand the natural resources						
<b>CO5:</b>	Understand social issues						

**COURSE OUTCOMES VS PROGRAM OUTCOMES MAPPING:**

Course Outcomes	Program Outcomes												Program Specific Outcomes	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO 1	1	1	1			2	1						1	
CO 2		1		1		2	1							1
CO 3						1	1							
CO 4						1	1							
CO 5						1	1							

  
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UNIT – I	ENVIRONMENTAL SYSTEMS (OLD ENVIRONMENT AND ECOSYSTEMS)	Hrs
	Definition scope and importance of environment. Need for public awareness. Concept of an ecosystem. Structure and function of an ecosystem - producers, consumers and decomposers. Energy flow in the ecosystem. Ecology succession – food chains, food webs and ecological pyramids. Introduction, types, characteristic feature, structure and function of the (a) forest ecosystem (b) grassland ecosystem (c) desert ecosystem (d) aquatic ecosystems (ponds, streams, rivers)	6
UNIT - II	BIODIVERSITY	Hrs
	Introduction to biodiversity definition: genetic, species and ecosystem diversity, Biogeographically classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and optional values, Biodiversity at local levels– Global level, Kalakad and Mundanthurai Tiger Reserve (KMTR). India as a mega diversity nation. Hot – spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man – wildlife conflicts. Endangered and endemic species of India. Field study of common plants, insects, birds, field study of simple ecosystems – pond, river, hill slopes, etc.,	6
UNIT – III	ENVIRONMENTAL POLLUTION	Hrs
	Definition. Causes, effects and control measures of: (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Thermal pollution (g) Radiation Hazards. (h) Use and throw plastic (j) Agrochemicals Management and prevention of municipal solid wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: floods, earthquake, cyclone and landslide, Tsunami. Field study of local polluted site – Urban/Rural/Industrial/Agricultural.	6
UNIT – IV	NATURAL RESOURCES	Hrs
	Forest resources: Use and over – exploitation, deforestation. Water resources: use and over – utilization of surface and ground water, dams – benefits and problems, sand mining. Food resources – changes caused agriculture and overgrazing, effects of modern agriculture. Energy resources: growing energy needs. Renewable and non-renewable energy sources. Role of an Individual in conservation of natural resources.	6
UNIT – V	SOCIAL ISSUES AND ENVIRONMENT	Hrs
	Population explosion. From unsustainable to sustainable development. Water conservation rain water harvesting, watershed management. Climate change, global warming, ozone layer depletion, acid rain. Environment protection act. Air (Prevention and control of pollution) act. Water (Prevention and control of pollution) act. Wildlife protection act (1972). Forest conservation act. Role of State and Central pollution control boards. Family welfare program HIV/AIDS, child welfare, women welfare.	6


**Total: 30 Periods**

**Text Book(s):**

1. Dr A. Ravikrishnan “Environment Science and Engineering” Sri Krishna Hitech Publications, Chennai, Revised Edition June 2013.

**Reference Book(s):**

1. Dharmendra S. Sengar, “Environmental law”, prentice hall of India PVT. Ltd , New Delhi, 2007
2. Erach Bharucha, “Textbook of Environmental Studies”, Universities Press (I) PVT, Ltd, Hydrabad, 2015
3. G. Tyler Miller and Scott E. Spoolman, “Environmental Science”, Cengage Learning India PVT, Ltd, Delhi, 2014

  
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503231	PROFESSIONAL ETHICS				L	T	P	C
					1	0	0	1
Programme:	B.E. (CSE)	Sem:	VII	Category:	ES			
Prerequisite:	NIL							
Aim:	To enable the students to create an awareness on Engineering ethics and human values to instill moral and social values.							
<b>Course Objectives:</b>								
1	Introduces the concept of human values							
2	Inculcate about the Engineering ethics to the students							
3	Introduces the basic analyze of engineering as social experimentation							
4	To know more about responsibilities and rights							
5	To learn more about Global issues							
<b>Course Outcomes:</b> The students will be able to:								
CO1:	Understand the fundamental concepts of human values							
CO2:	Understand the concept of Engineering ethics							
CO3:	Analyze the engineering as social experimentation							
CO4:	Understand the concepts of responsibilities and rights							
CO5:	Understand the concept of Global issues							

### COURSE OUTCOMES VS PROGRAM OUTCOMES MAPPING

Course Outcomes	Program Outcomes												Program Specific Outcomes	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
	CO 1	2					2						2	
CO 2	2					2			2			2	2	
CO 3	2								1			1		1
CO 4	2					2			1			1		1
CO 5	2					1			2			1		1

#### Unit I Human Values

Moral values and Ethics-Integrity-work ethics- service learning (3 hrs)

#### Unit II Engineering Ethics

Senses of Engineering Ethics- variety of Moral issues-Gilligan's theory-Types of inquiry-self interest (3 hrs)

#### Unit III Engineering as Social Experimentation

Engineering as Experimentation-Code of Ethics- A balanced outlook on law (3 hrs)

#### Unit IV Responsibilities and Rights

Collective bargaining-confidentiality –Professional Rights- Employee rights- IPR (3 hrs)

#### Unit V Global Issues

Environmental Ethics- computer Ethics-Moral leadership- code of conduct (3 hrs)


Total: 15 Periods

#### Text Book(s):

1. Mike.W.Martin and Roland schinzinger-, Ethics in Engineering, Tata McGraw hill,New Delhi, Fourth edition 2019

#### Reference Book(s):

1. Govindarajan M, Natarajan.S and Senthil Kumar V.S. Engineering Ethics, Prenticehall of India, New Delhi, 2003
2. Charles. B.Fledderman - Engineering Ethics, Pearson prentice hall, New Jersey,2004

  
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501802	VALUE EDUCATION AND HUMAN RIGHTS				L	T	P	C
Programme:	B.E (CSE)				2	0	0	2
Prerequisite:	NIL	Sem:	05	Category:	BS			
Aim:	To learn about ethics and Human values in our society							
<b>Course Objectives:</b>								
Values are socially accepted norms to evaluate objects, persons, and situations for the student which form part and parcel of sociality.								
<b>Course Outcomes:</b> At the end of the course, students would:								
CO1:	Values tend to influence attitudes and behavior that help to solve common human problems.							
CO2:	Learn the global development							
CO3:	Learn the ethics in our society							
CO4:	Understand about Therapeutic Measures							
CO5:	Study about Human rights							

**COURSE OUTCOMES VS PROGRAM OUTCOMES MAPPING:**

Course Outcomes	Program Outcomes												Program Specific Outcomes	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO 1	1								2		1		1	
CO 2									2		1			1
CO 3											1			
CO 4											1			
CO 5								1						

<b>UNIT - I</b>	<b>INTRODUCTION</b>	<b>Hrs</b>
CONCEPT OF HUMAN VALUES, VALUE EDUCATION TOWARDS PERSONAL DEVELOPMENT: Aim of education and value education; Evolution of value-oriented education; Concept of Human values; types of values; Components of value education. PERSONAL DEVELOPMENT: Self-analysis and introspection; sensitization towards gender equality, physically challenged, intellectually challenged. Respect to - age, experience, maturity, family members, neighbours, co-workers. CHARACTER FORMATION TOWARDS POSITIVE PERSONALITY: Truthfulness, Constructively, Sacrifice, Sincerity, Self-Control, Altruism, Tolerance, Scientific Vision		6
<b>UNIT - II</b>	<b>VALUE EDUCATION TOWARDS NATIONAL AND GLOBAL DEVELOPMENT NATIONAL AND INTERNATIONAL VALUES</b>	<b>Hrs</b>
Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity. Social Values - Pity and probity, self-control, universal brotherhood. Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith. Religious Values - Tolerance, wisdom, character. Aesthetic values - Love and appreciation of literature and fine arts and respect for the same. National Integration and international understanding.		6
<b>UNIT - III</b>	<b>IMPACT OF GLOBAL DEVELOPMENT ON ETHICS AND VALUES</b>	<b>Hrs</b>
Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, professional challenges and compromise. Modern Challenges of Adolescent Emotions and behavior; Sex and spirituality: Comparison and competition; positive and negative thoughts. Adolescent Emotions, arrogance, anger, sexual instability, selfishness, defiance.		6


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UNIT - IV	THERAUPATIC MEASURES	Hrs
Control of the mind through a. Simplified physical exercise b. Meditation – Objectives, types, effect on body, mind and soul c. Yoga – Objectives, Types, Asanas d. Activities: (i) Moralization of Desires (ii) Neutralizations of Anger (iii) Eradication of Worries (iv) Benefits of Blessings		6
UNIT - V	HUMAN RIGHTS	Hrs
1. Concept of Human Rights – Indian and International Perspectives a. Evolution of Human Rights, b. Definitions under Indian and International documents 2. Broad classification of Human Rights and Relevant Constitutional Provisions. a. Right to Life, Liberty and Dignity, b. Right to Equality, c. Right against Exploitation d. Cultural and Educational Rights, e. Economic Rights, f. Political Rights, g. Social Rights 3. Human Rights of Women and Children a. Social Practice and Constitutional Safeguards • Female Foeticide and Infanticide • Physical assault and Harassment • Domestic Violence • Condition of Working Women b. Institution For Implementation • Human Rights Commission • Judiciary c. Violations and Redressal • Violation By Statue • Violation By Individuals • Nuclear Weapon and Terrorism • Safeguards		6

Total: 30 Periods

**Reference Book(s):**

1. M.G.Chitakra: Education and Human Values, A.P.H.Publishing Corporation, NewDelhi, 2003
2. Chakravarthy, S.K. : Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi , 1999.
3. Satchidananda, M.K.: Ethics, Education, Indian Unity and Culture,Ajantha Publications, Delhi, 1991
4. Das, M.S. & Gupta, V.K. : Social Values among Young adults: A changing Scenario, M.D. Publications, New Delhi, 1995
5. Bandiste, D.D.: Humanist Values: A Source Book, B.R. Publishing Corporation, Delhi, 1999
6. Ruhela, S.P. : Human Values and education, Sterling Publications, New Delhi, 1986
7. Kaul, G.N.: Values and Education in Independent Indian, Associated Publishers, Mumbai, 1975
8. Swami Budhananda (1983) How to Build Character A Primer : Ramakrishna Mission, New Delhi
9. A Cultural Heritage of India (4 Vols.), Bharatiya Vidya Bhavan, Bombay.

  
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