

Faculty of Engineering, O.U. AICTE Model Curriculum with effect from Academic Year 2020-21

Course Code	Course Title					Core/Elective	
MC802CE	Environmental Science					Mandatory	
Prerequisite	Contact Hours per Week				CIE	SEE	Credits
	L	T	D	P			
-	2	-	-	-	30	70	-
Course Objectives <ul style="list-style-type: none"> ➤ To create awareness and impart basic knowledge about the environment and its allied problems. ➤ To know the functions of ecosystems. ➤ To understand importance of biological diversity. ➤ To study different pollutions and their impact on environment. ➤ To know social and environment related issues and their preventive measures. Course Outcomes After completing this course, the student will be able to: <ol style="list-style-type: none"> 1. Adopt environmental ethics to attain sustainable development. 2. Develop an attitude of concern for the environment. 3. Conservation of natural resources and biological diversity. 4. Creating awareness of Green technologies for nation's security. 5. Imparts awareness for environmental laws and regulations. 							

UNIT-I The Multidisciplinary Nature of Environmental Studies: Definition, scope and importance, need for public awareness.

Natural Resources: Water Resources – Use and over utilization of surface and ground water, flood, drought, conflicts over water, Dams: Benefits and Problems. Food Resources –World Food Problems, effects of modern agriculture, fertilizer-pesticides problems, water logging, salinity, Forest Resources – Use and over exploitation, deforestation & its effect on tribal people. Land Resources– Land Degradation, environmental effect of mining, man induced landslides, soil erosion and desertification. Energy Resources –Growing energy needs, Renewable and Non-renewable energy resources.

UNIT-II Ecosystems: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in ecosystem, food chains, ecological pyramids, ecological succession, types of ecosystems (marine, pond, river, forest, grassland, desert)

UNIT-III Biodiversity: Levels of Biodiversity, Bio-geographical classification of India, Value of biodiversity, Threats to biodiversity, endangered and endemic species of India, Conservation of biodiversity, global and national efforts.

UNIT-IV Environmental Pollution: Definition, Causes, effects and control measures of air pollution, water pollution, soil pollution, noise pollution, thermal pollution, solid waste management.

Environment Protection Act: Air, water, forest and wildlife Acts, issues in the enforcement of environmental legislation.

UNIT-V Social Issues and the Environment: Watershed management and environmental ethics. Climate change, global warming, acid rain, ozone layer depletion. **Environmental Disaster Management:** Types of disasters, impact of disasters on environment, infrastructure, and development. Basic principles of disaster mitigation, disaster management, and methodology. Disaster management cycle and disaster management in India.

Field Work:

- o Visit to a local area to document environmental issues- agricultural area/ pond/lake/terrestrial ecosystem
- o Visit to a local polluted area- market/slum area/Industrial area/traffic area

Suggested Reading:

1. A.K. De, *Environmental Chemistry*, Wiley Eastern Ltd.
2. E.P. Odum, *Fundamentals of Ecology*, W.B. Saunders Co., USA.
3. M.N. Rao and A.K. Datta, *Waste Water Treatment*, Oxford and IBK Publications.
4. Benny Joseph, *Environmental Studies*, Tata McGraw Hill, 2005.
5. V.K. Sharma, *Disaster Management*, National Centre for Disaster Management, IPE, 1999

HUMAN RESOURCE DEVELOPMENT AND ORGANIZATIONAL BEHAVIOR

OE 602MB

Instruction: 3 periods per week

Duration of SEE: 3 hours

CIE: 30 marks

SEE: 70 marks

Credits: 3

Objectives:
1. Understand management process and functions
2. Comprehend decision making and negotiations
3. Learn psychological contract
4. Study the models of organization behaviour
5. Managing stress and counseling
Outcomes: Student will be able to
1. Explain various facets of management
2. Elaborate on ways of making decision
3. Elucidate different motivation content theories
4. Describe approaches to leadership
5. Suggest methods for stress management and counseling

UNIT – I

Management Process and Functions, Scientific and Modern Management, 3D Model of Managerial Behavior - MBO - MBWA - Line and Staff - The Peter's Principle - Parkinson's Law - Approaches to Organization Structure-Management - Classical, Human Relations, Systems and Contingency Approaches, Hawthorne's Experiments - Human Engineering.

UNIT – II

Decision Making and Negotiations: Approaches to Decision making - Rational, Behavioral, Practical, and Personal Approaches - Open and Closed Models of Decision Making, Types and steps in planning, Authority, Responsibility, Centralization, Decentralization and Recentralization, Bureaucracy.

UNIT – III

Psychological contract - Personality Traits, Big 5 personality traits, MBTI inventory, the Process of Perception - Perceptual distortions and errors, Kelly's personal construct Theory, Motivation-Content Theories: Maslow, Alderfer, Herzberg, McClelland. Process Theories: Vroom, Potter and Lawler, Equity Theory - Goal Theory - Attribution Theory.

UNIT – IV

Models of Organization Behavior - Autocratic, Custodial, Supportive, Collegial and System Models, Transactional Analysis, Johari Window. Group Dynamics: Typology of Groups - Conflicts in groups - The nature, of conflict - Reactions to conflict - A model of conflict. Trait and Behavioral Approaches to Leadership, Managerial Grid, Path-Goal Theory, Vroom's Decision Tree Approach to Leadership - Hersey and Blanchard Model

UNIT – V

Organization Design, Organization culture and organization climate, Stress Management and Counseling, Management of change and organization development. Communication - Emerging aspects of OB.

Suggested Readings:

1. Harold Koontz and Heinz Weihrich, *Essentials of Management*, 9th Edition, McGraw Hill Education, 2015.

2. Curtis W. Cook and Phillip L. Hunsaker, *Management and Organizational Behavior*, 3rd Edition, McGraw-Hill, 2010.

DISASTER MITIGATION

OE 601 CE

Instruction: 3 periods per week

Duration of SEE: 3 hours

CIE: 30 marks

SEE: 70 marks

Credits: 3

Objectives:
1. To impart knowledge of the basic principles of disaster management.
2. To give knowledge of the various types of disasters.
3. To understand the disaster management cycle and framework.
4. To become aware of the disaster management systems in India.
5. To become aware of the applications of the latest technologies in disaster management
Outcomes: After completing this course, the student will be able to
1. Define and explain the terms and concepts related to disaster management.
2. Describe the various categories of disasters and their specific characteristics.
3. Explain the pre-disaster, during disaster and post-disaster measures and framework
4. Describe the disaster management acts and frameworks specific to India
5. List and explain the various technological applications to aid disaster management.

UNIT-I

Introduction: Understanding the Concepts and definitions of Disaster, Hazard, Vulnerability, Risk, and Capacity – Disaster and Development, and disaster management.

UNIT-II

Disasters: Geological Disasters (earthquakes, landslides, tsunami, mining); Hydro-Meteorological Disasters (floods, cyclones, lightning, thunder-storms, hail storms, avalanches, droughts, cold and heat waves) Biological Disasters (epidemics, pest attacks, forest fire); Technological Disasters (chemical, industrial, radiological, nuclear) and Manmade Disasters (building collapse, rural and urban fire, road and rail accidents, nuclear, radiological, chemicals and biological disasters) Global Disaster Trends – Emerging Risks of Disasters – Climate Change and Urban Disasters

UNIT-III

Disaster Management Cycle and Framework: Disaster Management Cycle – Paradigm Shift in Disaster Management Pre-Disaster – Risk Assessment and Analysis, Risk Mapping, zonation and Microzonation, Prevention and Mitigation of Disasters, Early Warning System; Preparedness, Capacity Development; Awareness. During Disaster – Evacuation – Disaster Communication – Search and Rescue – Emergency Operation Centre – Incident Command System – Relief and Rehabilitation. Post-disaster – Damage and Needs Assessment, Restoration of Critical Infrastructure – Early Recovery – Reconstruction and Redevelopment; IDNDR.

UNIT-IV

Disaster Management in India: Disaster Profile of India – Mega Disasters of India and Lessons Learnt Disaster Management Act 2005 – Institutional and Financial Mechanism National Policy on Disaster Management, National Guidelines and Plans on Disaster Management; Role of Government (local, state and national), Non-Government and Inter Governmental Agencies.

UNIT-V

Applications of Science and Technology for Disaster Management: Geo-informatics in Disaster Management (RS, GIS, GPS and RS) Disaster Communication System (Early Warning and Its Dissemination) Land Use Planning and Development Regulations Disaster Safe Designs and Constructions Structural and Non-Structural Mitigation of Disasters S&T Institutions for Disaster Management in India.

Suggested Reading:

1.	Rajib, S and Krishna Murthy, R. R, <i>Disaster Management Global Challenges and Local Solutions</i> ” CRC Press, 2009.
2.	Navele, P & Raja, C. K, <i>Earth and Atmospheric Disasters Management, Natural and Manmade. B. S. Publications.2009</i>
3.	Battacharya, T., <i>Disaster Science and Management. Tata McGraw hill Company, 2017</i>
4.	Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
5.	<i>An overview on natural & man-made disasters and their reduction, R K Bhandani, CSIR, New Delhi</i>
6.	Encyclopedia of disaster management, Vol I, II and III Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 2006
7.	Disasters in India Studies of grim reality, Anu Kapur& others, 2005, 283 pages, Rawat Publishers, Jaipur
8.	<i>Disaster Management Act 2005, Publisher by Govt. of India</i>
9.	<i>Publications of National Disaster Management Authority (NDMA) on Various Templates and Guidelines for Disaster Management</i>
10.	National Disaster Management Policy, 2009, Govt. of India
11.	Jagbirsingh, Disaster management–Future challenges and opportunities, I.K. International publishing house, 1st edition, 2007.
12.	Coppala P Damon, Introduction to International Disaster management, Butterworth-Heinemann, 2015.

GENDER SENSITIZATION

Course Code: MC901EG

CIE:30

SEE:70

Course Objectives

- To develop students' sensibility with regard to issues of gender in contemporary India.
- To provide a critical perspective on the socialization of men and women.
- To introduce students to information about some key biological aspects of genders.
- To help students reflect critically on gender violence.
- To expose students to more egalitarian interactions between men and women.

Course Outcomes

At the end of the course students will be able to

- Students will have developed a better understanding of important issues related to gender in contemporary India.
- Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
- Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
- Students and professionals will be better equipped to work and live together as equals. Students will develop a sense of appreciation of women in all walks of life

UNIT-I

Understanding Gender: Why Should We Study It? Socialization: Making Women, Making Men: Introduction-Preparing for Womanhood-Growing up male-First lessons in caste-Different Masculinities; Just Relationships: Being Together as Equals: Mary Kom and Onler- Love and acid just do not mix Love Letters-Mothers and Fathers-Further reading: Rosa Parks-The brave heart.

UNIT-II

Gender And Biology: Missing Women: Sex selection and Its Consequences – Declining sex ratio. Demographic Consequences; Gender Spectrum: Beyond the Binary – Two or many – Struggles with discrimination; Our Bodies, Our Health.

UNIT-III

Gender and Labour: Housework: the Invisible Labour: “My mother doesn’t work”- Share the Load”; Women's Work; Its Politics and Economics: Fact and fiction-Unrecognized and unaccounted work- Wages and conditions of work.

UNIT-IV

Issues of Violence: Sexual Harassment: Say No! : Sexual harassment – not eve-teasing-Coping with everyday harassment- “Chupulu”; Domestic Violence: Speaking Out: Is home a safe place? When women unite-Rebuilding lives-New forums for justice; Thinking about Sexual Violence: Blaming the victim – “I fought for my life”. The caste face of violence

UNIT – V

GENDER STUDIES: Knowledge - Through the Lens of Gender - Point of view - Gender and the structure of knowledge – Unacknowledged women artists of Telangana: Whose History?

Questions for Historians and Others: Reclaiming a past-Writing other histories-Missing pages from modern Telangana history. Suggested Reading:

1. A.Suneetha, Uma Bhrugubanda, Duggirala Vasanta, Rama Melkote, Vasudha Nagaraj Asma Rasheed, Gogu Shyamala, Deepa Sreenivas and Susie Tharu, "Towards a World of Equals: A Bilingual Text book on Gender" Telugu Akademi, Hyderabad, 1st Edition, 2015.
2. www.halfthesky.cgg.gov.in