

**21UHUC101/201      Society, Environment and Engineering      (2-0-0) 2**

**Contact Hours: 26      CIE: 50 Mark      SEE: 50 Marks      Exam Duration: 02 Hrs.**

**Course Learning Objectives (CLOs):**

The student is expected to learn the societal structure, development processes, and concern towards environment, appropriate technology and role of Engineers in providing engineering solutions for societal comfort.

**Course Outcomes (COs):**

Description of the Course Outcome: At the end of the course the student will be able to:		Mapping to POs(1,12)		
		Substantial Level (3)	Moderate Level (2)	Slight Level (1)
<b>CO-1</b>	Analyse the social structure and development needs	6,7		8
<b>CO-2</b>	Create awareness about the need of balanced ecosystems and identify the reasons for environment degradation.	6,7		8
<b>CO-3</b>	Apply mitigation techniques for conservation of environment	6,7		8
<b>CO-4</b>	Evaluate the need and impact of technology on social system and climate	6,7		8
<b>CO-5</b>	Recite his/her role as a facilitator for sustainable development	6,7		8

POs	1	2	3	4	5	6	7	8	9	10	11	12
<b>Mapping Level</b>						3	3	1				

Prerequisites: Nil

## **Contents:**

### **Unit I**

**Societal Structures and Dynamics:** An analysis of basic sociology concepts and their applications to contemporary society; cultural heritage, occupation mobility and income distribution, social tensions and their causes; societal responsibility and social institutions.

Transformation of industrial society into information society, Development processes: parameters for development of interrelationship between social economic and scientific factors. Role of science and technology in development planning; its objectives and assessment. **06 Hrs.**

### **Unit II**

**Ecosystems:** Natural ecosystems, Principles of eco-balance, Biosphere cycle, carbon dioxide cycle, causes of eco-imbalance - its effects and remedies.

Environmental Degradation: Causes of degradation– its effects, Control of air, water, soil, and pollutions, Solid waste management, Protection of ozone layer. **05 Hrs.**

### **Unit III**

**Conservation of environment:** Optimum utilization of natural resources, Renewable and non-renewable resources, Conflict of resources, Global environmental issues, Climate change as a threat to human civilization and Mitigation measures. **05 Hrs.**

### **Unit IV**

**Technology:** Definition, Impact of technology on environment & society, Benefits of technology due to new inventions, Conflict of technology, technology creation for societal change, Appropriate technology, Intermediate technology, labor based and labor intensive technology, Shifts in employment due to technological advancement, Role of technology to unmask social problems, Impact of technology on culture, tradition and social values. **05 Hrs.**

### **Unit V**

**Technology for Sustainable development:** Definition and concept, Technology for sustainable energy and materials. Agricultural age, industrial age and information age, Characteristics of information society, Information as power and wealth. Community management, Engineers role as facilitator. **05 Hrs.**

**Question Paper Pattern:**

- 1) Each question will carry 10 marks with maximum of two sub divisions
- 2) Each unit will consists of two full questions
- 3) Students have to answer one full question from each unit and total five questions to be answered.
- 4) The question paper will have built in choice in the unit.

**Reference Books:**

1. B. C. Punmia, Ashok Kumar Jain and Arun Kumar Jain, "Environmental Engineering", 16<sup>th</sup> Edition, Laxmi Publications (P) Ltd., New Delhi, 2016
2. H.G. Wells, "Brief History of Civilization",
3. J. Neharu, "Glimps of World History", 2004