| Course Code | UES20AE1T | Course Name | ENVIRONMENTAL STUDIES | Course Category | AE | Ability Enhancement Courses | L | T | P | C |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 3 | 0 | 0 | 3 |

| Pre-requisite Courses | *Nil* | Co-requisite Courses | *Nil* | Progressive Courses | *Nil* |
|---|---|---|---|---|---|
| Course Offering Department | *Computer Applications* | Data Book / Codes/Standards | *Nil* | | |

| Course Learning Rationale (CLR): | *The purpose of learning this course is to:* |
|---|---|
| CLR-1 : | *To teach the importance of environment* |
| CLR-2 : | *To impart the knowledge about ecosystem* |
| CLR-3 : | *To teach about Biodiversity* |
| CLR-4 : | *To create awareness about environmental pollution* |
| CLR-5 : | *To understand about Environment Protection* |

| Course Learning Outcomes (CLO): | *At the end of this course, learners will be able to:* | Learning: Level of Thinking (Bloom) | Expected Proficiency (%) | Expected Attainment (%) |
|---|---|---|---|---|
| CLO-1 : | *To gain knowledge on the importance of natural resources and energy* | 2 | 75 | 60 |
| CLO-2 : | *To understand the structure and function of an ecosystem* | 2 | 80 | 70 |
| CLO-3 : | *To imbibe an aesthetic value with respect to biodiversity, understand the threats and its conservation and appreciate the concept of interdependence* | 2 | 70 | 65 |
| CLO-4 : | *To understand the causes of types of pollution and disaster management* | 2 | 70 | 70 |
| CLO-5 : | *To observe and discover the surrounding environment through field work* | 2 | 80 | 70 |

| Program Learning Outcomes (PLO) | 1 Fundamental Knowledge | 2 Application of Concepts | 3 Link with Related Disciplines | 4 Procedural Knowledge | 5 Skills in Specialization | 6 Ability to Utilize Knowledge | 7 Skills in Modeling | 8 Analyze, Interpret Data | 9 Investigative Skills | 10 Problem Solving Skills | 11 Communication Skills | 12 Analytical Skills | 13 ICT Skills | 14 Professional Behavior | 15 Life Long Learning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLO-1 : | *H* | *H* | *H* | - | - | - | - | - | - | - | - | - | - | - | - |
| CLO-2 : | - | *H* | - | *H* | - | - | - | - | - | - | - | - | - | - | - |
| CLO-3 : | *H* | - | - | | - | - | - | - | - | - | - | - | - | - | - |
| CLO-4 : | *H* | - | *H* | *H* | *H* | - | - | - | - | - | - | - | - | - | - |
| CLO-5 : | - | *H* | - | *H* | - | - | - | - | - | - | - | - | - | - | - |

| Duration (hour) | | 9 | 9 | 9 | 9 | 9 |
|---|---|---|---|---|---|---|
| S-1 | SLO-1 | *Environmental Studies- Concept* | *Concept of an ecosystem* | *Biodiversity at Global, National And Local Levels* | *Causes, Effects and Control Measures of Nuclear hazards* | *Need for equitable utilization* |
| | SLO-2 | *Scope and Importance of Environmental Studies* | *Ecosystem degradation and Resource utilization* | *India as a Mega Diversity Nation* | | *Equity – Disparity* |
| S-2 | SLO-1 | *Need for public awareness.* | *Structure and Functions of an ecosystem* | *Threats to biodiversity: habitat loss, poaching of wildlife* | *Solid Waste Management Causes, Effects and Control Measures of Urban and Industrial Waste* | *Urban – rural equity issues* |
| | SLO-2 | *Institutions in Environment* | *Producers, consumers and decomposers* | *man-wildlife conflicts* | | *The need for Gender Equity* |
| S-3 | SLO-1 | *People in Environment* | *Energy flow in the ecosystem* | *Endangered species of India* | *Role of Individuals In Pollution Prevention* | *Preserving resources for future generations* |
| | SLO-2 | *Awareness about Environmental Studies* | *The water cycle , The Carbon cycle , The Oxygen cycle , The Nitrogen cycle , The energy cycle and, Integration of cycles in nature* | *Endemic species of India* | | *The rights of animals* |

| | | | | | | |
|---|---|---|---|---|---|---|
| S-4 | SLO-1 | Introduction to natural resources- Associated Problems | Ecological succession | Environmental Pollution- Definition | Disaster management- Nature Floods, Earthquakes | The ethical basis of environment education and awareness |
| | SLO-2 | Renewable and Nonrenewable resources | Food chains, Food webs and Ecological pyramids | | | |
| S-5 | SLO-1 | Forest resources | Ecosystem, Introduction, Types, Characteristic features, Structure and functions | Causes, Effects and Control Measures of Air Pollution | Cyclones Landslides | The conservation ethic and traditional value systems of India |
| | SLO-2 | Water Resources | Forest ecosystem | | | |
| S-6 | SLO-1 | Mineral Resources | Grassland ecosystem | Causes, Effects and Control Measures of Water Pollution | Social Issues and the Environment From Unsustainable to Sustainable Development | Wasteland Reclamation |
| | SLO-2 | Food Resources | Desert ecosystem | | | |
| S-7 | SLO-1 | Energy Resources | Aquatic ecosystems (ponds, lakes, streams) | Causes, Effects and Control Measures of Soil Pollution | Water Conservation | Climate change & Global warming |
| | SLO-2 | Land Resources | Aquatic ecosystems (rivers, estuaries, oceans) | | | |
| S-8 | SLO-1 | Renewable and non-renewable resources- Wind | Value Of Biodiversity | Causes, Effects and Control Measures of Marine pollution | Rain Water Harvesting Watershed | Acid rain & Ozone layer depletion |
| | SLO-2 | Renewable and non-renewable resources- geothermal | Consumptive Value And Productive Value | | | |
| S-9 | SLO-1 | Renewable and non-renewable resources- Solar | Social Value and Ethical Value | Causes, Effects and Control Measures of Noise Pollution | Environmental Ethics: Issues and Possible Solutions | Nuclear Accidents and Nuclear Holocaust |
| | SLO-2 | Renewable and non-renewable resources- Biomass | Aesthetic Value and Option Value | Causes, Effects and Control Measures of Thermal Pollution | Resource consumption patterns | |

| | |
|---|---|
| **Learning Resources** | **Theory:**<br>1. Bharucha Erach, (2013), Textbook of Environmental Studies for Undergraduate Courses (Second edition). Telangana, India: Orient BlackSwan.<br>2. Basu Mahua, Savarimuthu Xavier, (2017), SJ Fundamentals of Environmental Studies. Cambridge, United Kingdom: Cambridge University Press<br>3. Dr.R.Jeyalakshmi.2014.,Text book of Environmental Studies, Devi publications, Chennai<br>4. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380013, India, Email:mapin@icenet.net (R) |

**Learning Assessment**

| Level | Bloom's Level of Thinking | Continuous Learning Assessment (50% weightage) | | | | | | | | Final Examination (50% weightage) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CLA – 1 (10%) | | CLA – 2 (10%) | | CLA – 3 (20%) | | CLA – 4 (10%)# | | | |
| | | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice | Theory | Practice |
| Level 1 | Remember | 40% | - | 40% | - | 40% | - | 40% | - | 40% | - |
| | Understand | | | | | | | | | | |
| Level 2 | Apply | 30% | - | 30% | - | 30% | - | 30% | - | 30% | - |
| | Analyze | | | | | | | | | | |
| Level 3 | Evaluate | 30% | - | 30% | - | 30% | - | 30% | - | 30% | - |
| | Create | | | | | | | | | | |
| | Total | 100 % | | 100 % | | 100 % | | 100 % | | 100 % | |

# CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

| **Course Designers** | | |
|---|---|---|
| **Experts from Industry** | **Experts from Academic** | **Internal Experts** |
| *1. Mr. Suresh S, Program Head, Hello FM* | *1. Dr. G Balasubramania Raja, Prof & Head, Manonmaniam Sundranar University Mail- gbs_raja@yahoo.com* | *1. Dr. Rajesh R, Head, SRM IST* |
| | | *2.Dr.S.Albert Antony Raj, Associate Professor and Head, SRMIST* |