

GOVT. POLYTECHNIC, NAYAGARH

LESSON PLAN

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| DISCIPLINE:<br>MECHANICAL ENGINEERING       | SEMESTER: 3 <sup>rd</sup> (2024-25)            | NAME OF THE<br>FACULTY:<br>Himanshu Patra, GF(Mech)                      |
| SUBJECT:<br>ENVIRONMENTAL<br>STUDIES (TH-5) | NO. OF DAYS/WEEK CLASS<br>ALLOTTED:<br>4P/WEEK | SEMESTER FROM<br>DATE: 01/07/2024<br>TO : 08/11/2024<br>NO. OF WEEKS: 15 |

| Sl<br>No. | week | CLASS<br>Day | Topics to be covered  |
|-----------|------|--------------|---|
| 1         | 1st  | 1st day      | Unit 1: The Multidisciplinary nature of environmental studies   |
|           |      | 2nd day      | Definition  |
|           |      | 3rd day      | scope and importance  |
|           |      | 4th day      | Need for public awareness   |
| 2         | 2nd  | 1st day      | Renewable and non renewable resources   |
|           |      | 2nd day      | Natural resources and associated problems. Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams and their effects on forests and tribal people. |
|           |      | 3rd day      | Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.  |
|           |      | 4th day      | Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources.   |
| 3         | 3rd  | 1st day      | Food Resources: World food problems ,changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizers pesticides problems, waterlogging, salinity.                         |
|           |      | 2nd day      | Energy Resources: Growing energy need, renewable and nonrenewable energy sources, use of alternate energy sources, case studies.  |
|           |      | 3rd day      | Land Resources: Land as a resource ,land degradation ,man induces landslides, soil erosion, and desertification.  |
|           |      | 4th day      | Role of individual in conservation of natural resources.  |
| 4         | 4th  | 1st day      | Role of individual in conservation of natural resources.  |
|           |      | 2nd day      | Equitable use of resources for sustainable lifestyles.  |
|           |      | 3rd day      | Concept of an ecosystem. Structure and function of an ecosystem.  |
|           |      | 4th day      | Producers, consumers, decomposers.  |
| 5         | 5th  | 1st day      | Energy flow in the ecosystems.  |

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|    |      | 2nd day | Ecological succession.   |
|    |      | 3rd day | Food chains, food web and ecological pyramids.   |
|    |      | 4th day | Introduction, types, characteristic features, structure and function of the following ecosystem: |
| 6  | 6th  | 1st day | Forest ecosystem:  |
|    |      | 2nd day | Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).                           |
|    |      | 3rd day | Introduction-Definition: genetics, species and ecosystem diversity.                              |
|    |      | 4th day | Biogeographically classification of India.   |
| 7  | 7th  | 1st day | Value of biodiversity: consumptive use, productive use,  |
|    |      | 2nd day | Social, ethical, aesthetic and opt in values.  |
|    |      | 3rd day | Biodiversity at global and national level.   |
|    |      | 4th day | Biodiversity at local level.   |
| 8  | 8th  | 1st day | Threats to biodiversity: Habitats loss, poaching of wild life.                                   |
|    |      | 2nd day | man wildlife conflicts.  |
|    |      | 3rd day | Definition Causes, effects and control measures of: Air pollution.                               |
|    |      | 4th day | Water pollution.   |
| 9  | 9th  | 1st day | Soil pollution   |
|    |      | 2nd day | Marine pollution   |
|    |      | 3rd day | Noise pollution.   |
|    |      | 4th day | Thermal pollution  |
| 10 | 10th | 1st day | Nuclear hazards.   |
|    |      | 2nd day | Solid waste Management   |
|    |      | 3rd day | Causes, effects and control measures of urban and industrial wastes.                             |
|    |      | 4th day | Role of an individual in prevention of pollution.  |
| 11 | 11th | 1st day | Disaster management  |
|    |      | 2nd day | Floods, earth quake, cyclone and landslides.   |
|    |      | 3rd day | From unsustainable to sustainable development. Urban problems related to energy.                 |

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|    |      | 4th day | Water conservation, rain water harvesting                            |
| 12 | 12th | 1st day | water shed management.   |
|    |      | 2nd day | Resettlement and rehabilitation of people; its problems and concern. |
|    |      | 3rd day | Environmental ethics: issue and possible solutions.                  |
|    |      | 4th day | Climate change, global warming, acid rain, ozone layer depletion     |
| 13 | 13th | 1st day | nuclear accidents and holocaust, case studies                        |
|    |      | 2nd day | Air (prevention and control of pollution) Act.                       |
|    |      | 3rd day | Water (prevention and control of pollution) Act.                     |
|    |      | 4th day | Public awareness.  |
| 14 | 14th | 1st day | Population growth and variation among nations.                       |
|    |      | 2nd day | Population explosion-family welfare program.                         |
|    |      | 3rd day | Population explosion-family welfare program.                         |
|    |      | 4th day | Environment and human health.  |
| 15 | 15th | 1st day | Environment and human health.  |
|    |      | 2nd day | Human rights and Value education.                                    |
|    |      | 3rd day | Role of information technology in environment and human health.      |
|    |      | 4th day | Revision and PYQ Practice  |

glimanshi Patel  
10th (chE)