GOVERNMENT POLYTECHNIC JAGATSINGHPUR

MECHANICAL ENGINEERING DEPARTMENT LESSON PLAN

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| Discipline :-  **Mechanical** | Semester:-**3RD** | Name of the Teaching Faculty  SOUMYA PRAKASH SUTAR |
| Subject:- **Environmental Studies** | No of Days/per Week Class **Allotted :-04** | Semester From date : **15.09.2022** TO Date:**22.12.2022**  Week-15 |
| **Week** | **Class Day** | **Theory/ Practical Topics** |
| 1st | 1st | **CHAPTER-1: The Multidisciplinary nature of environmental studies**  Introduction |
| 2nd | Definition, scope and importance. |
| 3rd | Need for public awareness. |
| 4th | **CHAPTER-2: Natural Resources:**  Forest resources: Use and over-exploitation, deforestation, case studies, |
| 2nd | 1st | Timber extraction mining, dams and their effects on forests and tribal  people. |
| 2nd | Water resources: Use and over-utilization of surface and ground water,  floods, drought, conflicts over water, dam’s benefits and problems. |
| 3rd | Mineral Resources: Use and exploitation, |
| 4th | Environmental effects of extracting and using mineral resources. |
| 3rd | 1st | Food Resources: World food problems, changes caused by agriculture and  over grazing |
| 2nd | Effects of modern agriculture, fertilizers- pesticides problems, water  logging, salinity |
| 3rd | Energy Resources: Growing energy need |
| 4th | Renewable and non-renewable energy sources, use of alternate energy  sources, case studies. |
| 4th | 1st | Land Resources: Land as a resource, land degradation, Landslides, soil  erosion, and desertification. |
| 2nd | Role of individual in conservation of natural resources, Equitable use of  resources for sustainable life styles. |
| 3rd | **CHAPTER-3: Systems:**  Concept of an eco-system. |
| 4th | Structure and function of an eco-system |
| 5th | 1st | Producers, consumers, decomposers. |
| 2nd | Energy flow in the eco systems. |
| 3rd | Ecological succession. |
| 4th | Food chains, food webs and ecological pyramids |
| 6th | 1st | Introduction, types, characteristic features of eco system: |
| 2nd | structure and function of the following ecosystem: Forest ecosystem, Aquatic eco  systems (ponds, streams, lakes, rivers, oceans, estuaries). |
| 3rd | **CHAPTER-4: Biodiversity and it’s Conservation:**  Introduction |
| 4th | Definition: genetics, species and ecosystem diversity. |

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| 7th | 1st | Biogeographically classification of India. |
| 2nd | Value of biodiversity: consumptive use, productive use, |
| 3rd | Value of biodiversity in social ethical, aesthetic and optin values. |
| 4th | Biodiversity at global, national and local level. |
| 8th | 1st | Threats to biodiversity: Habitats loss, poaching of wild life |
| 2nd | Threats to biodiversity: man wildlife conflicts. |
| 3rd | **CHAPTER-5: Environmental Pollution:**  Definition Causes, effects and control measures of: |
| 4th | Air pollution. |
| 9th | 1st | Water pollution |
| 2nd | Soil pollution |
| 3rd | Marine pollution |
| 4th | Noise pollution. |
| 10th | 1st | Thermal pollution |
| 2nd | Nuclear hazards. |
| 3rd | Solid waste Management: Causes |
| 4th | Effects and control measures of urban and industrial wastes. |
| 11th | 1st | Role of an individual in prevention of pollution. |
| 2nd | Disaster management: Floods, earth quake, cyclone and landslides. |
| 3rd | **CHAPTER-6: Social issues and the Environment**:  Form unsustainable to sustainable development. |
| 4th | Urban problems related to energy. |
| 12th | 1st | Water conservation, rain water harvesting, water shed management |
| 2nd | Resettlement and rehabilitation of people; its problems and concern |
| 3rd | Environmental ethics: issue and possible solutions |
| 4th | Climate change, global warming, acid rain, |
| 13th | 1st | Ozone layer depletion, nuclear accidents and holocaust, case studies. |
| 2nd | Air (prevention and control of pollution) Act. |
| 3rd | Water (prevention and control of pollution) Act. |
| 4th | Public awareness. |
| 14th | 1st | **CHAPTER-7: Human population and the environment:** introduction |
| 2nd | Population growth and variation among nations. |
| 3rd | Population explosion- family welfare program. |
| 4th | Environment and human health. |
| 15th | 1st | Human rights. |
| 2nd | Value education |
| 3rd | Role of information technology in environment and human health |
| 4th | Important question discussion |