**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**

**DEPARTMENT OF MECHANICAL ENGINEERING**



**LESSON PLAN**

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| SUBJECT: ENGINEERING MATERIAL | ACADEMIC SESSION: 2022-23 |
| FACULTY: MR. **S.P.B.B.BHATTA** | SEMESTER: 3RD |
|  | SEC: B |

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| P T G F (Mech Engg.) |

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| **Discipline:**  **Mechanical Engineering** | **Semester: 3rd A** | | **Name of the teaching faculty:**  **S.P.B.B.BHATTA** |
| **Subject:**  **ENVIRONMENTAL STUDIES** | **No. of Days/ per week class allotted: 04periods per week**  **Mon-1 period, WED-1 period,THU-1 period, SAT -1 period)** | | **Semester From Date: 15-09-2022 To Date: 22-12-2022**  **No. of weeks: 14 weeks** |
| **Week** | **Class Day** | **No of period available** | **Theory Topics** |
| 1ST | (15.09.2022) | 1 | **Unit 1: The Multidisciplinary nature of environmental studies**  Definition, |
| (16.09.2022) | 1 | scope and importance, |
| 2nd | (20.09.2022) | 1 | Need for public awareness |
| (21.09.2022) | 1 | Need for public awareness |
| (22.09.2022) | 1 | **Unit 2: Natural Resources**  **Renewable and non renewable resources:**  a) 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. |
| (23.09.2022) | 1 | Water resources: Use and over-utilization of surface and ground  water, floods, drought, conflicts over water, dam’s benefits and  problems. |
| 3rd | (27.09.2022) | 1 | Mineral Resources: Use and exploitation, environmental effects of  extracting and using mineral resources. |
| (28.09.2022) | 1 | Food Resources: World food problems ,changes caused by  agriculture and overgrazing,effectsofmodernagriculture,fertilizers  pesticidesproblems, water logging, salinity,. |
| (29.09.2022) | 1 | Energy Resources: Growing energy need, renewable and non  renewable energy sources, use of alternate energy sources, case  studies. |
| (30.09.2022) | 1 | Land Resources: Land as a resource ,land degradation ,man induces  landslides, soil erosion, and desertification.  b) Role of individual in conservation of natural resources.  c) Equitable use of resources for sustainable lifestyles. |
| 4th | (11.10.2022) | 1 | **Unit 3: Systems**  Concept of an ecosystem.  Structure and function of an ecosystem. |
| (12.10.2022) | 1 | Producers, consumers, decomposers. |
| (13.10.2022) | 1 | Energy flow in the ecosystems. |
| (14.10.2022) | 1 | Ecological succession.  Food chains, food web sand ecological pyramids. |
| 5th | (18.10.2022) | 1 | Introduction, types, characteristic features, structure and function  of the following ecosystem: |
| (19.10.2022) | 1 | Forest ecosystem:  Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) |
| (20.10.2022) | 1 | **Unit 4: Biodiversity and it’s Conservation**  Introduction-Definition: genetics, |
| (21.10.2022) | 1 | species and ecosystem diversity. |
| 6th | (26.10.2022) | 1 | Biogeographically classification of India |
| (27.10.2022) | 1 | Value of biodiversity: consumptive use |
| (28.10.2022) | 1 | productive use, social  ethical, aesthetic and opt in values. |
| 7TH | (01.11.2022) | 1 | Biodiversity at global, national and local level. |
| (02.11.2022) | 1 | Threats to biodiversity: Habitats loss |
| (03.11.2022) | 1 | poaching of wild life, man  wildlife conflicts  Class test-02 |
| (04.11.2022) | 1 | **Unit 5: Environmental Pollution.**  Definition Causes, effects and control measures of:  a) Air pollution. |
| 8TH | (09.11.2022) | 1 | Definition Causes, effects and control measures of:  b)Water pollution. |
| (10.11.2022) | 1 | Definition Causes, effects and control measures of:  c) Soil pollution |
| (11.11.2022) | 1 | Definition Causes, effects and control measures of:  d) Marine pollution |
| 9TH | (15.11.2022) | 1 | **Internal examination** |
| (16.11.2022) | 1 | **Internal examination** |
| (17.11.2022) | 1 | Definition Causes, effects and control measures of:  e) Noise pollution. |
| (18.11.2022) | 1 | Definition Causes, effects and control measures of:  f) Thermal pollution |
| 10TH | (22.11.2022) | 1 | Definition Causes, effects and control measures of:  g) Nuclear hazards |
| (23.11.2022) | 1 | Solid waste Management: Causes, effects |
| (24.11.2022) | 1 | control measures of urban and  industrial wastes. |
| (25.11.2022) | 1 | Role of an individual in prevention of pollution. |
| 11TH | (29.11.2022) | 1 | Disaster management: Floods |
| Wednesday  (30.11.2022) | 1 | Class test-03 |
| Thursday  (01.12.2022)  Friday  (02.12.2022) | 1  1 | earth quake, cyclone and landslides.  **Unit 6: Social issues and the Environment**  From unsustainable to sustainable development**.**  Urban problems related to energy. |
| 12TH | (06.12.2022) | 1 | Water conservation, rain water harvesting, water shed management |
| (07.12.2022) | 1 | Resettlement and rehabilitation of people; its problems and concern. |
| (08.12.2022) | 1 | Environmental ethics: issue and possible solutions. |
| (09.12.2022) | 1 | Climate change, global warming, acid rain, ozone layer  depletion, nuclear accidents and holocaust, case studies. |
| 13TH | (13.12.2022) | 1 | Air (prevention and control of pollution) Act.  Water (prevention and control of pollution) Act.  Public awareness. |
| (14.12.2022) | 1 | **Unit 7: Human population and the environment**  Population growth and variation among nations.  Population explosion-family welfare program. |
| (15.12.2022) | 1 | Human rights.  Value education |
| (16.12.2022) | 1 | Role of information technology in environment and human health |
| 14TH | (20.12.2022) | 1 | **REVISION** |
| (21.12.2022) | 1 | **REVISION** |
| (22.12.2022) | 1 | **REVISION** |