

## ENVIRONMENTAL MANAGEMENT & AUDIT

|  |                  |                                  |           |                      |                                  |
|--|------------------|----------------------------------|-----------|----------------------|----------------------------------|
| <b>Course Code</b>                     | 20CE2702A        | <b>Year</b>                      | IV        | <b>Semester(s)</b>   | I                                |
| <b>Course Category</b>                 | Open Elective-IV | <b>Branch</b>                    | EEE       | <b>Course Type</b>   | Theory                           |
| <b>Credits</b>                         | 3                | <b>L-T-P</b>                     | 3-0-0     | <b>Prerequisites</b> | 20MC1301 - Environmental Science |
| <b>Continuous Internal Evaluation:</b> | <b>30</b>        | <b>Semester End Evaluation :</b> | <b>70</b> | <b>Total Marks:</b>  | <b>100</b>                       |

| Course Outcomes   |   |          |          |     |                 |     |          |     |     |               |      |      |            |          |
|---|---|----------|----------|-----|-----------------|-----|----------|-----|-----|---------------|------|------|------------|----------|
| Upon successful completion of the course, the student will be able to:  |   |          |          |     |                 |     |          |     |     |               |      |      |            |          |
| <b>CO1</b>  | <b>Illustrate</b> basic knowledge on solid waste management   |          |          |     |                 |     |          |     |     |               |      |      |            | L2       |
| <b>CO2</b>  | <b>Demonstrate</b> the handling of biomedical waste and its disposal  |          |          |     |                 |     |          |     |     |               |      |      |            | L3       |
| <b>CO3</b>  | <b>Distinguish</b> the E-waste sources, problems, control measures and E-waste rules  |          |          |     |                 |     |          |     |     |               |      |      |            | L3       |
| <b>CO4</b>  | <b>Outline</b> the basic principles of EIA.   |          |          |     |                 |     |          |     |     |               |      |      |            | L2       |
| <b>CO5</b>  | <b>Understand</b> the activities in environmental auditing.   |          |          |     |                 |     |          |     |     |               |      |      |            | L2       |
| Contribution of Course Outcomes towards achievement of Program Outcomes |   |          |          |     |                 |     |          |     |     |               |      |      |            |          |
|   | PO1   | PO2      | PO3      | PO4 | PO5             | PO6 | PO7      | PO8 | PO9 | PO10          | PO11 | PO12 | PSO1       | PSO2     |
| <b>CO1</b>  | 2   | 2        | 2        |     |                 |     | 2        |     |     |               |      |      | 2          | 2        |
| <b>CO2</b>  | 2   | 2        | 2        |     |                 |     | 2        |     |     |               |      |      | 2          | 2        |
| <b>CO3</b>  | 3   | 3        | 3        |     |                 |     | 2        |     |     |               |      |      | 3          | 2        |
| <b>CO4</b>  | 2   | 2        | 2        |     |                 |     | 2        |     |     |               |      |      | 2          | 2        |
| <b>CO5</b>  | 2   | 2        | 2        |     |                 |     | 2        |     |     |               |      |      | 2          | 2        |
| <b>Avg.</b>   | <b>2</b>  | <b>2</b> | <b>2</b> |     |                 |     | <b>2</b> |     |     |               |      |      | <b>2</b>   | <b>2</b> |
| <b>1- Low</b>   |   |          |          |     | <b>2-Medium</b> |     |          |     |     | <b>3-High</b> |      |      |            |          |
| Course Content  |   |          |          |     |                 |     |          |     |     |               |      |      |            |          |
| <b>UNIT-1</b>   | <b>INTRODUCTION TO SOLID WASTE MANAGEMENT</b><br>Sources and types of municipal solid wastes-waste generation rates-factors affecting generation, characteristics, segregation of solid wastes – source reduction of waste – objectives of waste processing, elements of solid waste management –public role in solid waste management. |          |          |     |                 |     |          |     |     |               |      |      | <b>CO1</b> |          |
| <b>UNIT-2</b>   | <b>BIOMEDICAL WASTE MANAGEMENT</b><br>Definition-Sources-Classification of biomedical waste – Objectives of Biomedical waste management-segregation-containers for biomedical waste- Labelling Collection-Transport-Disposal methods  |          |          |     |                 |     |          |     |     |               |      |      | <b>CO2</b> |          |
| <b>UNIT-3</b>   | <b>E-WASTE MANAGEMENT</b><br>E-waste: Sources- Types- components; Collection process- Segregation- Disposal methods; Effect on air, water and soil; Health hazards; Role of individual for E-waste management. Current E-waste Management Rules   |          |          |     |                 |     |          |     |     |               |      |      | <b>CO3</b> |          |
| <b>UNIT-4</b>   | <b>ENVIRONMENTAL IMPACT ASSESSMENT (EIA)</b><br>Introduction-Definition-Scope-Objectives of EIA-Basic EIA Principles, Classification of EIA-Life Cycle Assessment-Environmental Policy of India. Baseline Data Acquisition: Environmental Inventory- Rapid EIA.   |          |          |     |                 |     |          |     |     |               |      |      | <b>CO4</b> |          |
| <b>UNIT-5</b>   | <b>ENVIRONMENTAL AUDIT INTRODUCTION</b>   |          |          |     |                 |     |          |     |     |               |      |      | <b>CO5</b> |          |

|  |  |  |
|--|--|--|
|  | Environmental audit Significance for Industry-Elements of Environmental audit. Process of environmental audit-Pre audit- Activity -Activities at site- Post audit. |  |
|--|--|--|

### **Learning Resources**

|   |  |
|---|--|
| <b>Text Books</b>                               | <ol style="list-style-type: none"><li>1. Agarwal, K.M., Sikdar, P.K., Deb., S.C (2005) A Text Book of Environment, Macmillan India Limited.</li><li>2. Sharma, R.D. (1976), Organisational Management, Light and Life Publishers, New Delhi.</li><li>3. Varma and Agarwal, Theory &amp; practice of Management Forward Book Depot, New Delhi</li></ol> |
| <b>Reference Books</b>                          | <ol style="list-style-type: none"><li>1. Kovntz, H and C. Danvel (1978): Essential of management, second edition, Tata Mc Graw Hill publishing company, New Delhi.</li><li>2. Erickson, P.A. (1977) Environmental Impact Assessment – Principles and Erickson, P.A. (1977)</li></ol>   |
| <b>E-Resources &amp; other digital material</b> | <p><a href="http://nptel.ac.in">http://nptel.ac.in</a></p>   |