

## COMMON PAPER – ENVIRONMENTAL STUDIES (21UEVS21)

|    | Part    | P                     | Title of the Course  | Course Code | H/W | L* | T* | P* | C  | Marks |     |       |
|----|---------|-----------------------|--|-------------|-----|----|----|----|----|-------|-----|-------|
|    |         |                       |  |             |     |    |    |    |    | I     | E   | T     |
| I  | I       | I L-I                 | .f;fhyj;jkpo;  | 21ULTA11    | 6   |    |    |    | 3  | 25    | 75  | 100   |
|    |         |                       | Basic Grammar and Translation - I  | 21ULAR11    |     |    |    |    |    |       |     |       |
|    | II      | II L-I                | Communicative English -I   | 21ULEN11    | 6   |    |    |    | 3  | 25    | 75  | 100   |
|    | III     | DSC-I                 | INORGANIC CHEMISTRY – I  | 21UCCH11    | 4   | 4  |    |    | 4  | 25    | 75  | 100   |
|    | III     | DSC-II                | METHODOLOGY OF PRACTICALS  | 21UCCH12    | 4   | 4  |    |    | 4  | 25    | 75  | 100   |
|    | III     | P-I                   | INORGANIC QUANTITATIVE ANALYSIS  | 21UCCH1P1   | 2   |    |    | 2  | 1  | 40    | 60  | 100/2 |
|    | III     | A-I/1                 | BIOCHEMISTRY - I   | 21UABC11    | 4   | 4  |    |    | 3  | 25    | 75  | 100   |
|    | III     | A-I/1P                | ANALYSIS OF CARBOHYDRATES AND FATTY ACIDS                                | 21UABC1P1   | 2   |    |    | 2  | 1  | 40    | 60  | 100/2 |
| IV | AECC-I  | Value Education-I     | 21USVE1A   | 2           | 2   |    |    |    | 25 | 75    | 100 |       |
|    |         | Value Education-II    | 21USVE1B   |             |     |    |    |    |    |       |     |       |
| II | I       | I L-II                | rkaj;jkpo;   | 21ULTA21    | 6   |    |    |    | 3  | 25    | 75  | 100   |
|    |         |                       | Basic Grammar and Translation - II                                       | 21ULAR21    |     |    |    |    |    |       |     |       |
|    | II      | II L-II               | Communicative English II   | 21ULEN21    | 6   |    |    |    | 3  | 25    | 75  | 100   |
|    | III     | DSC-III               | ORGANIC CHEMISTRY – I  | 21UCCH21    | 4   | 4  |    |    | 4  | 25    | 75  | 100   |
|    | III     | DSC-IV                | PHYSICAL CHEMISTRY-I   | 21UCCH22    | 4   | 4  |    |    | 4  | 25    | 75  | 100   |
|    | III     | P-II                  | PREPARATION OF ORGANIC COMPOUNDS AND PHYSICAL DETERMINATION OF CONSTANTS | 21UCCH2P1   | 2   |    |    | 2  | 1  | 40    | 60  | 100/2 |
|    | III     | A-I/2                 | BIOCHEMISTRY – II  | 21UABC21    | 4   | 4  |    |    | 3  | 25    | 75  | 100   |
|    | III     | A-I/2P                | ANALYSIS OF AMINO ACIDS AND PROTEINS                                     | 21UABC2P1   | 2   |    |    | 2  | 1  | 40    | 60  | 100/2 |
| IV | AECC-II | Environmental Studies | 21UEVS21   | 2           | 2   |    |    | 2  | 25 | 75    | 100 |       |

|                     |                       |
|---------------------|-----------------------|
| <b>Course Title</b> | Environmental Science |
| <b>Total Hrs.</b>   | 30                    |
| <b>Hrs./Week</b>    | 2                     |
| <b>Sub.Code</b>     | 21UEVS21              |
| <b>Course Type</b>  | AECC-II               |
| <b>Credits</b>      | 2                     |
| <b>Marks</b>        | 100                   |

### UNIT - I: Nature of Environmental Studies

Goals, Objectives and guiding principles of environmental studies. Towards sustainable development - Environmental segments– Atmosphere, Hydrosphere, Lithosphere, Biosphere – definition. Pollution episodes -- Hiroshima – Nagasaki, - Bhopal gas Tragedy, Fukushima. Stone leprosy in Taj Mahal, Minamata disease.

### UNIT - II: Natural Resources

Renewable and Non-Renewable resources - classification.

- Forest resources: Use and over - exploitation, Afforestation and deforestation.
- Water resources: Use and over - utilization and conservation of surface and ground water – Rain harvesting.
- Marine Resources: Fisheries and Coral reefs.
- Mineral resources: Use and exploitation - environmental impacts of extracting and using mineral resources.
- Food resources: Effects of modern agriculture fertilizers - pesticide problem.
- Energy resources: Growing energy needs - use of alternate energy source - Solar cells & wind mills.
- Land resources: Land degradation

### UNIT - III: Ecosystem

- Concept of Eco-systems - Tropic level, food chains, food web and Ecological pyramids, Living conditions on other planets (Brief account). Types, structure & Functions, prevention and control of pollution of the following:
  - a) Aquatic ecosystem
  - b) Terrestrial ecosystem – Grassland, Forest and Desert ecosystem

### UNIT - IV: Biodiversity & Its Conservation

Introduction - Definition: ecosystem diversity, species diversity and Genetic diversity. Hot spots of biodiversity - Western Ghats, Eastern Himalayas and Gulf of Mannar. Threats to

biodiversity - Habitat Loss, Poaching of wildlife and Man - wildlife conflicts. Nature reserves. Conservation of biodiversity: In-situ and Ex-situ, Environmental movements – Green peace and Chipco movement. Biodiversity law.

#### **UNIT - V: Environmental protection, Policies and practices**

Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.

Prevention, Control of Pollution and Environmental Laws:

- Water, Air and Noise (prevention & Control of Pollution) Act.
- Environmental Protection Act.
- Wildlife production Act, Forest Conservation Act, International agreements, Monstreal and Kyoto protocols and conservation on biological Diversity. The Chemical Weapons Convention (CWC)
- Role of Central & State Pollution Control Boards.

#### **Field work : 5 marks**

Visit to an area to document environmental assets: river/ forest / fauna.

or

Visit to a local polluted site-urban/rural/Industrial / Agricultural

or

Study of common plants, insects, birds and basic principles of identification

#### **REFERENCE BOOKS:**

1. Basic of Environmental Science. Vijayalakhmi, Murugesan and Sukumaran – Manonmaniam Sundaranar University publications.
2. Environmental Studies. John de Brito, Victor, Narayanan and Patric Raja - published by St. Xavier's College, Palayamkottai, 2008.
3. Environmental Science and Biotechnology. A.G. Murugesan and C. Raja Kumar - MJP Publishers.
4. Fundamental of Environmental pollution - Krishnan Kannan - Chand & Company Ltd., New Delhi, 1997.
5. Environmental Studies. S. Muthiah, Ramalakshmi publications, Tirunelveli.
6. EnRole of central and state pollution control boards. Environmental Studies. V.M. Selvaraj, Bavani Publications, Tirunelveli.