

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**B.Sc. DEGREE: BRANCH VI.A. - ADVANCED ZOOLOGY AND BIOTECHNOLOGY**

**SYLLABUS**

(Effective from the Academic Year 2015 – 2016)

**ENVIRONMENTAL STUDIES**

**CODE: 15ZL/GC/ES22**

**CREDITS : 2**

**L T P : 2 0 0**

**TOTAL TEACHING HOURS : 26**

**OBJECTIVES OF THE COURSE**

- To create an awareness about current environmental issues
- To educate students on conservation and management of natural resources
- To encourage students to be ecosensitive and ecofriendly

**Unit 1**

**Introduction**

**(6 hrs.)**

- 1.1 Components of the Environment – Classification and Characteristics of Resources – Renewable and Non – Renewable Resources
- 1.2 Need for Public Awareness in Conservation of Natural Resources
- 1.3 Energy Flow in Ecosystems – Aquatic and Terrestrial – Food Chain and Food Web

**Unit 2**

**Pollution and Socio Economic Aspects of the Environment**

**(10 hrs.)**

- 2.1 Types of Pollution – Air, Water, Solid Waste, Noise
- 2.2 Problems - Green House Effect – Depletion of the Ozone Layer – Climate Change
- 2.3 Bio Diversity - Definition - Loss of Bio Diversity – Threats to Biodiversity and Conservation of Biodiversity
- 2.4 Human Behaviour: - Population – Urbanization – Poverty (As Cause and Result of Pollution and Degradation)
- 2.5 Technology: Agriculture and Industry – Deforestation. Misuse and Abuse of the Resources
- 2.6 Effects and Consequences of Environmental Problems

**Unit 3**

**Sustainable Development, Remedies and Policy Implications**

**(10 hrs.)**

- 3.1 Environmental Disasters Natural and Human Made – Bhopal Gas Tragedy – Chernobyl Accident – Fukushima Nuclear Crisis - Gulf War – Love Canal Episode – Tsunami – Volcanic Eruptions
- 3.2 Methods Evolved to Measure and Check Environmental Degradation and Pollution – Carbon Footprint, Carbon Credit, Ecological Footprint, and Ecological Shadow
- 3.3 Environmental Movements in India – Chipko Movement, Narmada Bachao Andolan, Sethu Samudram Project
- 3.4 Environmental Acts – Policy Measures with respect to India
- 3.5 International Environmental Agreement – Stockholm Conference – Montreal Protocol – Rio Meet – Kyoto Conference – UN Conference on Climate Change (Copenhagen)

### **Field visit**

Eco initiatives at the campus: Garbage Segregation and Vermicomposting – Greywater Recycling – Rainwater Harvesting – Solar Powered Lights – Biodiversity

### **TEXT BOOK**

Bharucha, E. *Textbook of Environmental Studies*. Hyderabad: Universities Press, 2005.

### **REFERENCE BOOKS**

Ignacimuthu, S. *Environmental Awareness and Protection*. New Delhi: Phoenic House, 1997.

Jadhav, H and V. M. Bhosale. *Environmental Protection and Law*. New Delhi: Himalaya, 1995.

Odum, E.P. *Fundamentals of Ecology*. U.S.A: W.B. Saunders, 1971.

Mies, M and V. Shiva. *Ecofeminism*, London: Zed Books, 1989.

Singh, H.R. *Environmental Biology*. New Delhi: S.Chand, 2005.

### **PATTERN OF EVALUATION (Internal assessment)**

#### **Continuous Assessment:**

One Hour Test – 25 Marks

One Component – 25 Marks