

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
B.Sc. DEGREE: BRANCH IV – CHEMISTRY

SYLLABUS

(Effective from the Academic Year 2015 – 2016)

ENVIRONMENTAL STUDIES

CODE: 15CH/GC/ES22

CREDITS : 2

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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