

**Lecture Plan**

**Name of the college: Government College of Arts, Science and Commerce, Sanquelim- Goa**

**Name of Faculty:** Dr. Sagar Narayan Patil      **Subject:** Chemistry

**Paper code:** CHC-231; Environmental Sustainability: Natural resources and Community      **Program:** MC chemistry

**Academic year:** June 24 - 2025      **Semester:** III      **Total (15)**

- Course Objectives:**
- 1. To introduce the various terms encountered in environment and sustainability.
  - 2. To explain the underlying aspects of environmental pollution, waste management and municipal water treatment.
  - 3. To discuss the various natural resources, environmental issues, human rights and disaster management.

- Student Learning Outcome: students will be able to,**
1. To describe the fundamentals of environment and sustainable development.
  2. To discuss the significance of natural resources and biodiversity.
  3. To propagate environmental education, human rights and awareness of disaster management.

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
July	1/7/2024	31/07/2024	9	Natural Resources Land and water resources, forest resources and energy resources. Renewable and non-renewable resources, utilisation of resources. Biodiversity, factors responsible for determination of biodiversity, reasons for conserving biodiversity and obstacles in biodiversity conservation.	Concepts and problems, ISA01	PPT/ Smart Board	1. Bharucha, E., Textbook of environmental studies for undergraduate courses. 3rd edition, University Grants Commission, New Delhi, 2021. 2. Agrawal, K. C., Environmental biology, Agro Botannica, Bikaner, 1999. 3. Chhatwal, R. J., Environmental sciences: A systematic approach, 1st revised edition, UDH Publishers & Distributors (P) Ltd, New Delhi, 2009.

August	01/08/2024	31/08/2024	10	. Environmental issues and concern Environmental pollution and hazards. Waste management, Global environmental issues, Municipal waste water treatment	Concepts and problems ISA II	Smart Board	1. Bharucha, E., Textbook of environmental studies for undergraduate courses. 3rd edition, University Grants Commission, New Delhi, 2021. 2. Agrawal, K. C., Environmental biology, Agro Botannica, Bikaner,1999. 3. Chhatwal, R. J., Environmental sciences: A systematic approach,1st revised edition, UDH Publishers & Distributors (P) Ltd, New Delhi, 2009.
September	02/09/2024	30/09/2024	8	Human communities and Environment Human population: Growth and trends, human health and welfare, human rights and value education. Disaster management: floods, earthquakes, cyclones, landslides	Concepts and problems And solutions , ISA3	Smart Board	1. Bharucha, E., Textbook of environmental studies for undergraduate courses. 3rd edition, University Grants Commission, New Delhi, 2021. 2. Agrawal, K. C., Environmental biology, Agro Botannica, Bikaner,1999. 3. Chhatwal, R. J., Environmental sciences: A systematic approach,1st revised edition, UDH Publishers & Distributors (P) Ltd, New Delhi, 2009.
October	01/10/2024	22/10/2024	6	Natural Resources, Environmental issues and concern, Human communities and Environment Human population	Concepts and problems And solutions , revisions	Smart Board	1. Bharucha, E., Textbook of environmental studies for undergraduate courses. 3rd edition, University Grants Commission, New Delhi, 2021. 2. Agrawal, K. C., Environmental biology, Agro Botannica, Bikaner,1999. 3. Chhatwal, R. J., Environmental sciences: A systematic approach,1st revised edition, UDH Publishers & Distributors (P) Ltd, New Delhi, 2009.

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CHC142; ISA:7.5 marks