

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI – HYDERABAD CAMPUS
Second semester 2019-20

Course Handout (Part II)

Date: 06/01/2020

In addition to part I (general handout for all courses appended to the timetable) this portion gives specific details regarding the course.

Course No. : CHEM G521
Course Title : Environmental Chemistry
Instructor-In-Charge : N.Rajesh

- 1. Course Description:** Energy-flows and supplies, fossil fuels, nuclear energy, nuclear waste disposal, renewable energy, industrial ecology, green chemistry, ozone chemistry, effect of SO_x, NO_x as pollutants, reformulated gasoline, water pollution and treatment, organochlorine and organophosphate pesticides, eco-system effects, Toxic chemicals – Effect of dioxins, polychlorinated biphenyls (PCBs) and species of metals such as lead, mercury, cadmium etc.
- 2. Scope and Objective of the Course:** This course aims at covering topics in understanding the factors affecting environmental pollution and its abatement.
- 3. Text Book (TB):**
Fundamental Concepts of Environmental Chemistry, GS Sodhi, Third Edition, Narosa Publishing.

Reference Books:

1. Environmental Chemistry, Gary Von Loon, Stephen Duffy, Oxford 2000
2. Environmental Chemistry A.K. Bhagi, G.R Chatwal, by Himalaya Publishing, 5th Edition, 2003.

4. Course Plan:

Lec. No.	Topic	Reference
1-5	Abiotic origin: Atmosphere	Ch. 4 (TB)
6-10	Energy; Energy Flow ,Fossil Fuels, Nuclear energy	Ch. 9,10,13 (TB)
11-18	Air Pollutants: Sulfur Oxides, Nitrogen Oxides, Photochemical Smog, Green house Gases, Depletion of Stratospheric Ozone	Ch. 14,15,17-19 (TB)
19-23	Water pollutants: Heavy metals ,Soaps and detergents ,Water Treatment	Ch.22,24,26 (TB)
24-32	Pollutants from Industry: Polymers and Plastics, Polychlorinated biphenyls, food additives	Ch. 27, 29, 30 (TB)
33-35	Pollutants from Industry: Fertilizers	Ch. 31(TB)
36-38	Waste Management: Solid Waste ,Hazards waste	Ch. 34, 35(TB)
39-40	Environmental Restoration: International Efforts, India Efforts	Ch. 37, 38(TB)

5. Evaluation scheme.

Component	Weightage (%)	Date	Duration	Nature of component
Seminars	20	Continuous	50 min	Open
Assignments*	20	Continuous		Take home
Mid semester test	20	5/3 9.00 - 10.30AM	90 min	Closed book
Comprehensive exam	40	9/5 AN	3 hrs	Closed book

* **Assignments:** To be announced by the instructor.

6. Make up policy: Make up will be for only genuine reasons

7. Chamber consulting hours: To be announced

8. Notices will be displayed in the chemistry department notice board.

9. Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Instructor-in-charge
CHEM G521