

(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd Semester/Even Semester)
Session – (2022-2023)

Name of the Teacher/s: Dr. Swatika Sharma

Department: P.G. Department of Chemistry

Class: M.Sc II (3rd Semester)

Subject: Environmental Chemistry

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	22-08-2022	14-09-2022	Unit-I (i): ENVIRONMENT: (Revision) Introduction of environment, Green Chemistry, Discussion on segments of Environment, an elaborate discussion on composition of Atmosphere, vertical temperature profile of atmosphere, heat budget of earth atmospheric system, vertical stability of atmosphere, biogeochemical cycles: nitrogen cycle, sulphur cycle, phosphorus cycle, oxygen cycle, carbon cycle, biodistribution of elements. UNIT-I (ii): ENVIRONMENT TOXICOLOGY: Introduction of environment toxicology, biochemical effects of arsenic, cadmium, lead, mercury (minamata incident, biological methylation), carbon monoxide, nitrogen oxides, sulphur dioxide, ozone and pan. cyanide, solutions to environmental problems, biodegradability (specifically of detergents and plastics), principles of decomposition, better industrial processes, chemical-industrial disasters: bhopal gas tragedy, chernobyl disaster, three mile island accident, seveso disaster	Lecture method, PPT, E-notes, Audio/ video lecture Group Discussion, Class test

2.	15-09-2022	15-10-2022	<p>UNIT-II (i): INDUSTRIAL POLLUTION: Introduction to industrial pollution, cement pollution (sources and impacts), cement based solidification/stabilization (s/s with cement) or remediation of contaminated sites with cement, sugar mill pollution (sources and impacts), pollution from distillery industry and its impacts, drug pollution (sources and impacts), pollution from paper and pulp industry, environmental impacts of thermal power plants, thermal pollution, environmental impacts of nuclear power plants, metallurgy pollution, pollution from polymer industry, radionuclide analysis, disposal of wastes and their management, minamata disaster.</p> <p>UNIT-II (ii): SOILS: Definition of soil, soil formation, soil-profile, composition of soil, inorganic and organic components of soil, macronutrients and micronutrients from soil for plants, fertilizer and pesticide pollution in soil, metallic pollution in soil, plastic pollution in soil, waste treatment</p>	Lecture method, PPT, E-notes, Audio/ video lecture Group Discussion, Class test
3.	16-10-2022	26-10-2022	<p>UNIT-III: HYDROSPHERE: Chemical composition of water bodies (fresh water and sea water), hydrological cycle, aquatic inorganic pollution, aquatic organic pollution, pesticides pollution in water, agricultural pollution, effects of sewage and waste water, detergent pollution in water, oil spills and oil pollution</p> <p>Water quality parameters, analysis of water pollutants, (biological oxygen demand, dissolved oxygen, chemical oxygen demand, fluorides, oil and grease, arsenic, cadmium, chromium, mercury, lead, selenium, nitrates,</p>	Lecture method, PPT, E-notes, Audio/ video lecture Group Discussion, Class test
4.	27-10-2022	07-11-2022	<p>UNIT-III: HYDROSPHERE: Analysis of sulphates, phosphates, residual chlorine and chlorine demand) purification of water, wastewater treatment.</p> <p>UNIT-IV: ATMOSPHERE: Discussion on chemical composition of</p>	Lecture method, PPT, E-notes, Audio/ video lecture Group Discussion, Class test

			atmosphere-particles, ions and radicals in the atmosphere, chemical and photochemical reactions in atmosphere, smog (types, formation and impacts), hydrochlorofluorocarbons/ chlorofluorocarbons, ozone depletion. Brief discussion on global warming, greenhouse effect, acid rain,	
5.	10-11-2022	18-11-2022	UNIT-IV: ATMOSPHERE: Air quality monitoring including sampling of pollutants, continuous monitoring instruments, monitoring of carbon monoxide, NO _x , SO ₂ , H ₂ S, hydrocarbons, aromatic hydrocarbons in exhaust, air, petrol, analysis of particulate matter, air pollution control methods, control of air pollutants.	Lecture method, PPT, E-notes, Audio/ video lecture Group Discussion, Class test
6.	19-11-2022	21-11-2022	Revision/doubts/Remedial	Lecture method, PPT, E-notes, Audio/ video lecture Group Discussion, Class test
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
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*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.
Other Methods adopted by the teacher – Please write the specific teaching method