

**KOLHAN UNIVERSITY  
CHAIBASA**



**SYLLABUS FOR FYUGP, NEP – 2020  
B. Sc. ENVIRONMENT AND WATER MANAGEMENT**

**Designed By**

**Mala Mandhyan  
Head, B.Sc. EWM  
Mrs KMPM Vocational College,  
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**Subject: B. Sc. Environment & Water Management****Course Code: MJ-1****Course: Environmental pollution****Learning Outcomes**

1. Learner will be able to understand the effects of water and air pollution on the environment.
2. Learners will develop scientific attitude to abate environmental Pollution.
3. Learner will experience the real-world problem of thermal pollution and will acquire a set of values for environmental protection.
4. Learner will develop improved understanding of fresh water and marine pollution and will be able to develop scientific thinking about the measures to control water pollution.
5. Learner will be able to evaluate the relations among environment, human, and health.
6. Learners will enhance their knowledge about soil erosion and conservation.

Unit	Topics	Details	Credit hours
1	<b>Environmental Pollution</b>	Definition of Pollution, Pollutants, classification of pollutants	5
2	<b>Air Pollution</b>	Ambient Air quality: Sources and types of pollutants (Primary and Secondary) sources, National ambient air Quality standards, Urban air Quality.	5
3	<b>Noise Pollution</b>	Sources, frequency, intensity and permissible ambient noise Standards, noise measurements, Impact on life forms and humans: control measures.	10
4	<b>Freshwater and</b>	Sources of surface and groundwater Pollution; Sources & effects of inorganic pollutants, organic pollutants, sewage & domestic waste, detergents, biological pollutants. Water Quality parameters and standards.	10
5	<b>Marine Pollution</b>	Sources of marine pollution, oil spill, its effects and control.	
6	<b>Thermal pollution:</b>	Introduction, sources, effects and control	5
7	<b>Soil pollution</b>	Definition, causes of soil pollution and land degradation ;effects of soil pollution on environment, vegetation and other life forms, control strategies	10
			45
	<b>Practical</b>	<ul style="list-style-type: none"> <li>• Determination of Physical Parameters of Freshwater Source (pH, Turbidity, Temperature)</li> <li>• Measurement of Noise level</li> <li>• Estimation of Soil pH.</li> <li>• Estimation of Soil moisture.</li> <li>• Determination of oil &amp; grease</li> </ul>	
			30

**References:**

1. Environmental Chemistry, H. Kaur (Pragati Prakashan)
2. Environmental Chemistry, A. K. Dey (New Age International Publication)
3. A Basic Course in Environmental Studies, S.Deswal /A.Deswal (Educational and Technical Publication)
5. Solid Waste Management, K, Shashi Kumar (P.H.I Learning Private Limited)
6. Purohit, S.S. & R. Ranjan, R. 2007. Ecology ,Environment & Pollution [Agrobios (India), 2003]

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**Subject: B. Sc. Environment & Water Management**  
**Course Code: MN – 1A**  
**Course: Disaster Management and Industrial Safety.**

**Learning outcomes**

1. Learners will be able to understand the basic concept of disaster(s) and disaster management, their significance and types.
2. Learners will develop the analytical skills to study relationship between vulnerability, disasters, disaster prevention and risk reduction.
3. Learners will gain a preliminary understanding of approaches to Disaster Risk Reduction (DRR).
4. Learners will be empowered with the awareness of institutional processes in the country for Disaster Management.

Unit	Topic	Details	Credit hours
1	<b>Disaster Management</b>	Introduction to Disaster, Types of Disaster, Risk and Vulnerability, Concept and scope of disaster management emergency management. Phases and professional activities – Mitigation, preparedness, response, recovery.	15
2	<b>Tools of Disaster management</b>	Emergency Management Information Systems (EIMS) organizations related to disaster management. International organizations – International Association of Emergency Managers, Red cross/Red crescent, United Nations, World Bank. National Organizations – National Institute of Disaster Management, Emergency management and research institute (EMRI), National remote sensing institute (NIRS).	15
3	<b>Introduction to Industrial Safety</b>	Introduction to Industrial safety, Industrial safety Principles safety and productivity, Need for safety, the role of safety professional/officer, safety organizations, accidents. OSHA & Industrial Hygiene.	15
4	<b>Safety management and legislation</b>	Industrial safety management, safety audit , Safety awareness and training , effective steps to implement safety procedures Personal Protective Equipment's ,Indian safety legislation, accident prevention.	15
			<b>60</b>

**References:**

1. Environment: Problems and Solutions, D.K. Asthana and Meera Asthana, S. Chand & Co., New Delhi
2. Environmental Hazards, Smith, K.Routledge, London.
3. Deshmukh. L.M., Industrial Safety Management, 3rd Edition, Tata McGraw Hill, New Delhi, 2008.
4. Jain.R.K and Sunil Rao, Industrial Safety, Health and Environmental Management Systems, 1st Edition, Khanna Delhi 2006.
5. Dr.KU.Mistry - Fundamentals of Industrial Safety and Health, Sidharth Prakashan, Ahmedabad.
6. Grimaldi and Simonds, Safety Management, AITES Publishers,New Delhi (2001)