DAYALBAGH EDUCATIONAL INSTITUTE
(DEEMED TO BE UNIVERSITY)
DAYALABGH AGRA – 282005

DEPARTMENT: Sociology & Political Science
FACULTY: Social Sciences

<table>
<tr><td colspan="4">Program Name- Post Graduate diploma: Safety, Health & Environment (PGDSHE)</td></tr>
<tr><td colspan="4">Status of Course: Major Course Credit:4</td></tr>
<tr><td colspan="4">Course Number: HED101, Course Title: ENVIRONMENT & ECOLOGY</td></tr>
<tr><td colspan="4">Lectures/ Week: of 55 mts. Each. [Week: 13 per semester]: L- 4</td></tr>
<tr><td colspan="4">Total Lectures / Semester: 52</td></tr>
<tr><td>1</td><td colspan="3">Introduction: This paper aims to introduce the students to the environment and its structure, segments and importance, Natural cycles; general process of gaseous & sedimentary cycles and human interventions, Natural resources; their importance, extraction and over exploitation, Ecosystem; basic concept of ecology, structure & functions of an ecosystem, pyramids, food chain, food web, ecological succession and mangrove forests. The Himalaya; its geography, major rivers & glaciers, hazards and tourism.</td></tr>
<tr><td>2</td><td colspan="3">Objectives:
1. To introduce the structure, segments and importance of environment,
2. To make them understand the natural cycles, their importance and human interventions that are altering these cycles,
3. To provide Knowledge about the various natural resources, their importance, extraction, over exploitation and motivate them to follow conservation practices,
4. To introduce the concept & structure of an ecosystem, including food chain & food web, ecological pyramids, ecological succession and characteristic features of different ecosystems,
5. To provide knowledge about specific ecosystems like mangrove forests,
6. To make them analyze the importance of Himalaya, its associated rivers & glaciers, hazards in Himalayan region and evaluate the Himalayan tourism.</td></tr>
<tr><td>3</td><td colspan="3">Course Outcomes (CO)
After completion of the course, students will be able to:
CO1: Understand the structure and segments of environment and analyze the importance of environment for a sustainable future,
CO 2: Understand the process and importance of natural cycles to sustain life and analyze human interventions and their impact on cycling of the elements in nature
CO3: Analyze the various important natural resources & their extraction & over exploitation and will be able to follow conservation practices
CO4: Understand the structure and functions of ecosystem, food chain & food web, ecological pyramids, ecological succession and importance of a self-sustained balanced ecosystem.
CO 5: Analyze the importance of mangrove forests from the ecological point of view.
CO6: Understand the importance of Himalaya & associated rivers & glaciers for our country
CO7: Analyze the adverse effect of tourism at Himalayan Region and importance of ecotourism for protection of biodiversity at Himalayan region</td></tr>
<tr><td>4</td><td>Course Contents</td><td>Period</td><td>Learning outcome</td></tr>
<tr><td></td><td>Unit – I INTRODUCTION TO ENVIRONMENT
Definition, scope and importance,
Environmental segments.</td><td>10</td><td>The students will be able to understand various environmental segments, and their role in supporting life in the biosphere.
The students will be able to draw diagrams of various layers of atmosphere
The students will be able to appreciate the importance of a clean and balanced environment</td></tr>
<tr><td></td><td>Unit – II NATURAL CYCLES OF ENVIRONMENT</td><td>10</td><td>The students will be able to understand the path of</td></tr>
</table>

	Water Cycle, Nitrogen Cycle, Phosphorus Cycle, Sulphur Cycle, Carbon Cycle		transport of various elements through biotic and abiotic components. The students will be able to draw diagrams of various natural cycles. The students will be able to evaluate human interventions creating imbalance in cycling of the elements.
	Unit – III NATURAL RESOURCES Natural Resources: Extraction, Use & Exploitation, Conflicts, Environmental Consequences and Case Studies related Forest resources, Water Resources, Mineral Resources, Land Resources & Energy Resources.	10	The students will be able to classify various natural resources on different basis. The students will be able to understand the significance of these resources. The students will be motivated to adopt conservation practices for sustainable use of natural resources. The students will be able to analyze the consequences of over exploitation of natural resources and its impact on physical environment.
	Unit – IV ECOLOGY AND ECOSYSTEMS Concept of an ecosystem, its structure & function. Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids. Types, characteristic features & structure of various Ecosystems. Mangrove Forest: Effect on health and environment	14	The students will be able to distinguish between different types of ecosystems and can analyze characteristic features and draw diagrams of various ecosystems. The students will be able to draw & explain the structure & functions of an ecosystem and various types of pyramids found in an ecosystem. The students will be able to establish relationships between various biotic communities at different trophic levels and explain and draw food web. The students will be able to Explain the types and general process of ecological succession. The students will be able to analyze the importance of mangrove forests and locate them.
	Unit – V THE HIMALAYA Geography and Transverse Subdivisions of the Himalaya, Major rivers and glaciers of Himalayan Region, Major rivers and Environment: Ganga & Yamuna Cleaning Projects & Programs. Environmental Hazards in the Himalayan Region, Tourism at Himalaya and its impact on the Environment.	8	The students will be able to explain the geography, subdivisions and importance of Himalaya for India. The students will be able to identify the rivers and glaciers found in the Himalayan region. The students will be able to explain and analyze the impact of hazards in the Himalayan region. The students will be able to draw conclusion over the importance and impact of tourism at Himalaya and the importance of ecotourism to preserve biodiversity of Himalayan region.

Textbooks:

1. P.R. Yadav & S.R. Mishra Environmental Ecology, Discovery Publishing House, New Delhi (2004)
2. R.L. Kotpal & N.P. Bali: Concepts of Ecology, Vishal Publishing Company, Punjab (2018)
3. Erach Bharucha: Textbook Of Environmental Studies, Universities Press (India) Private Limited, Hyderabad (2010)

Reference Books

1. NS Subrhmanyam: Ecology, Narosa Publishing House, N. Delhi (2001)
2. P.D. Sharma: Ecology and Environment, Rastogi Publications, Meerut (2010)

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DEPARTMENT: Sociology & Political Science
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<table>
<tr><td colspan="4">Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)</td></tr>
<tr><td colspan="4">Status of Course & Credit: Major Course & 4</td></tr>
<tr><td colspan="4">Course Number & Title: HED-102 Occupational Health</td></tr>
<tr><td colspan="4">Lectures/ Week: of 55 mts. Each. [Week: 13 per semester]: L-4</td></tr>
<tr><td colspan="4">Total Lectures / Semester: 52</td></tr>
<tr><td>1</td><td colspan="3">Introduction: This course provides an in-depth understanding of the various health risks associated with different occupation. Students will present common occupational diseases, sources of noise and vibration, and the significance of industrial hygiene. Additionally, we will discuss preventive measures, legal aspects, and the overall importance of maintaining health and safety standards in the workplace.</td></tr>
<tr><td>2</td><td colspan="3">Objectives:
1. To recognize common occupational diseases and ailments prevalent in various work environments and understand effective control measures.
2. To explore the sources and effects of noise and vibration in industries and their impact on human health and the environment.
3. To examine the care and treatment of common ailments related to eyes, nose, throat, teeth, and skin, alongside the importance of housekeeping and health monitoring.
4. To analyze the principles of occupational diseases and industrial hygiene, including lighting, ventilation, and fire hazards.
5. To introduce students with the legal aspects surrounding occupational health, particularly the Factory Act and its implications for health risk management.</td></tr>
<tr><td>3</td><td colspan="3">Course Outcomes (CO)
After completion of the course, students will be able to:
CO1: To identify and describe common occupational diseases and propose control measures.
CO2: To assess the sources and effects of noise and vibration in industries and control methods.
CO3: To develop strategies for the care and treatment of health issues related to occupation.
CO4: To develop solutions for improving industrial hygiene, including lighting and ventilation.
CO5: To present relevant legal frameworks, like the Factory Act, and understand their implication.</td></tr>
<tr><td>4</td><td>Course Contents to be covered</td><td>Period</td><td>Bloom’s Taxonomy Learning outcome</td></tr>
<tr><td></td><td>UNIT 1: Common occupational diseases and control measures.</td><td>10</td><td>students will identify common occupational diseases and control measures, explaining prevention strategies and applying knowledge through case studies related to particle inhalation.</td></tr>
<tr><td></td><td>UNIT 2: Sources of Noise & Vibration in Industries and Environment, Control methods, Effects of Noise and Vibration</td><td>11</td><td>Student will focus on recognizing sources of noise and vibration in industrial settings, understanding their health effects, and analyzing data on noise levels to assess potential impacts.</td></tr>
</table>

	UNIT 3: Care of sensitive body organs & their treatment, Housekeeping, Industrial Health Monitoring.	10	Students will recall ailments affecting the eyes, nose, throat, teeth, and skin, discuss the importance of industrial health monitoring, and demonstrate care practices for specific conditions
	UNIT 4: Occupational diseases & Industrial Hygiene, Fire Hazards, Occupational health safety for farmers	11	It will cover key components of industrial hygiene, where students will identify best practices, understand their relationship to occupational diseases, and evaluate the effectiveness of current hygiene measures.
	UNIT 5: Factories Act and Legal Aspects with references to health risk.	10	Find out the legal aspects of occupational health, enabling students to summarize key provisions of the Factory Act, understand their implications for health risk management, and create compliance plans that ensure adherence to legal standards in various industries.

Textbook:

1. Occupational Diseases: A Guide to the Diagnosis and Management: Stephen D. Levin (2017).
2. Fundamentals of Industrial Hygiene: Barbara A. Plog (2018).
3. Noise and Vibration Control Engineering: Principles and Applications" by L. S. T. & H. M. (2016). Wiley.

Reference

1. Occupational Health: A Comprehensive Approach” by Michael A. McCunney (2018)
2. Occupational Health and Safety Management” by C. Ray Asfahl (2019)

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DEPARTMENT: Sociology & Political Science
FACULTY: Social Sciences

Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)			
Status of Course & Credit: Major Course & 4			
Course Number & Title: HED-103 Research Methodology & Analysis			
Lectures/ Week: of 55 mts. Each. [Week 13 per semester]: L-4			
Total Lectures / Semester: 52			
1	**Introduction:** This course aims to focus students with the essential skills and knowledge to study effective research in environmental studies. It covers various methodologies and tools vital for analysing data, understanding research ethics, and presenting the findings.		
2	**Objectives:** 1. To introduce students with the concepts, significance, and objectives of research, particularly in the context of environmental studies. 2. To introduce various methods of data collection, including qualitative and quantitative approaches, and to develop skills in crafting questionnaires and conducting interviews. 3. To enhance students' ability to find, evaluate, and synthesize information from various sources, including libraries and online databases. 4. To present with knowledge of statistical tools and techniques necessary for data analysis, interpretation, and presentation. 5. To teach students in the effective illustration and visualization of data using various diagrammatic techniques, aiding in clearer communication of research findings.		
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: To present the ability to design and implement research projects in environmental contexts. CO2: To apply various data collection methods and analyse data using statistical techniques to derive meaningful conclusions. CO3: To Present research findings effectively through written reports and visual aids, with charts and diagrams. CO4: To Understand and apply ethical considerations in research, including issues related to plagiarism and intellectual property rights. CO5: To develop problem-solving skills through the analysis of complex environmental issues and the formulation of research questions.		
4	**Course Contents to be covered**	**Period**	**Bloom's Taxonomy Learning outcome**
	UNIT 1: ENVIRONMENTAL RESEARCH Meaning and Scope of Social Research, Objectives of Research, Types of Research Process, Quality of Research Worker, Environmental	10	Students learn the basics of environmental research, including its purpose, different types, and what makes a good researcher. They will study specific topics like neighborhood studies and the effects of urban areas, helping them understand

	Research.		the importance of researching environmental issues.
	UNIT 2: METHODS OF DATA COLLECTION Sources of data, Questionnaire, Interview; Focused, Structured, Observation, Types of Questions, Case- Study Method, Sampling Techniques, Tools of Data Collection.	10	Students will explore different sources of data and learn to create questionnaires and schedules. Also study methods like interviews and observations, gaining skills to choose the right data collection techniques for their research.
	UNIT 3: SEARCHING SKILLS Development of searching skills, Introduction to IPR, Plagiarism and Ethics, Writing research report	10	students develop skills to find and evaluate information. They will learn how to search libraries and online resources, focusing on proper referencing and text organization. The unit also covers plagiarism and research ethics, ensuring students understand how to conduct research responsibly.
	UNIT4: STATISTICAL TOOLS & TECHNIQUES Measures of Central Tendencies, Mean, Median, Mode, Precision, Accuracy, Measures of Dispersion, Stdv, Correlation regression, Standard error, t-test, ζ-score, null hypothesis, Sample collection,	12	Students will learn about averages, variation, and how to test hypotheses using statistical methods like t-tests. By the end of this unit, they will be able to perform basic analyses and understand their results.
	UNIT5: DIAGRAMMATIC REPRESENATION OF DATA Interpretation of data, reduction techniques. Table making, Figure, Bar diagrams, scatter plots, error bars, time series, Histogram & Pie diagram	10	students will learn how to present data visually. Present different ways to create charts and graphs, like bar charts and pie charts. This unit emphasizes the importance of clear visuals in research, helping students effectively communicate their findings.

Textbook:

1. Research Methodology: A Step-by-Step Guide for Beginners. 5th ed. London: SAGE Publications: by Kumar, R. (2019).
2. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* 2nd ed. Thousand Oaks, CA: SAGE Publications, Ragin, C. C. (2020).
3. Ecology Methods for Field and Laboratory Investigations Tata Mc Graw Hill Publishing Co. Ltd. New Delhi, P Michael (1986)

References:

1. Research Methods in Environmental Science: by Peter A. Murphy (2021)
2. Research Methods: The Basics: by Nicholas Walliman (2018)
3. Academic Research and Writing: A Guide for College Students: by Angela M. McCarthy (2019)
4. Statistics for Research: With a Guide to SPSS: by George Argyrous (2018)

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<tr><td colspan="4">Status of Course & Credit: Major Course & 4</td></tr>
<tr><td colspan="4">Course Number & Title: HED-104 Industrial Safety</td></tr>
<tr><td colspan="4">Lectures/ Week: of 55 mts. Each. [Week 13 per semester]: L-4</td></tr>
<tr><td colspan="4">Total Lectures / Semester: 52</td></tr>
<tr><td>1</td><td colspan="3">Introduction: This course focuses on key safety principles and practices to protect workers in various industrial settings. Students will learn about accident prevention, the use of personal protective equipment (PPE) and chemical safety. It also covers legal aspects of workplace safety, equipping students with the knowledge and skills to promote safer work environments.</td></tr>
<tr><td>2</td><td colspan="3">Objectives:
1. To provide an overview of industrial safety, including the need for safety measures and the fundamental principles guiding occupational health and safety policies.
2. To educate on the importance and selection of personal protective equipment (PPE) and safe work practices across various industrial settings.
3. To develop skills in creating and executing emergency control plans, both on-site and off-site, and understand safety procedures in hazardous situations.
4. To familiarize students with chemical safety protocols, including concentration units, control measures, and threshold limits.
5. To analyze the legal aspects of occupational health and safety, including relevant laws and standards such as ISO 45001:2018.</td></tr>
<tr><td>3</td><td colspan="3">Course Outcomes (CO)
After completion of the course, students will be able to:
CO1: Identify Safety Needs for safety measures in industrial environments, including the types and causes of accidents.
CO2: Study about Select suitable personal protective equipment for various work scenarios and understand inspection norms.
CO3: To develop emergency plans that address potential risks and outline evacuation and prevention strategies.
CO4: To analyse chemical safety practices, including concentration limits and control measures necessary for safe handling.
CO5: To understand and interpret the legal responsibilities of safety officers and management under current occupational safety regulations and ISO standards.</td></tr>
<tr><td>4</td><td>Course Contents to be covered</td><td>Period</td><td>Bloom’s Taxonomy Learning outcome</td></tr>
<tr><td></td><td>Unit 1: ACCIDENT HISTORY
Fundamentals of Safety, Industrial</td><td>10</td><td>Students will recall types of industrial accidents, explain the fundamentals of safety measures, and apply safe work practices through case study</td></tr>
</table>

	Accidents, Safe Work Practices		analysis.
	Unit 2: WORK PRACTICES Introduction to PPE, Non-Respiratory and Respiratory System, Safety Inspection Norms at work site,	10	Students will identify various types of PPE and their importance, describe PPE selection requirements, and apply this knowledge during simulated site inspections.
	Unit 3: WORK PROCEDURES Emergency Control Plan, Confined Space-Risk/safe preventive measures, Fire prevention plan	10	Students will analyze emergency control plans, evaluate on-site emergency response strategies, and create a comprehensive emergency response plan for hypothetical scenarios.
	Unit 4: CHEMICAL SAFETY Units of Concentration, Standard Laboratory Practices, Chemical safety equipment	10	Students will recall units of concentration, summarize control measures for hazardous substances, and apply laboratory practices to develop a chemical safety checklist.
	UNIT 5: LEGAL ASPECTS & ISO 45001: 2018 Government's Role, The Occupational Safety, OHSAS, Energy Management System (ISO 50001: 2018 standard)/ Carbon footprint management	12	Students will assess safety officers' roles under the Occupational Safety Code and create a safety management policy plan in line with ISO 45001:2018 standards.

Textbooks:

1. Gokhale, S. (2020). *Industrial Safety and Health Management*. 2nd ed. New Delhi: PHI Learning
2. Harris, R. (2019). *Safety and Health for Engineers*. 2nd ed. New York: Wiley.

Reference:

1. Krause, T. R., & Bohr, J. (2017). *Safety Management: A Comprehensive Approach to Managing Safety and Health in the Workplace*. 3rd ed. New York: McGraw-Hill
2. Wagner, C. E. (2019). *Chemical Safety Management: A Practical Guide to Hazardous Substances in the Workplace*. 1st ed. London: Routledge.
3. Choudhry, R. M., & Fang, D. (2018). *Safety Management in Construction: Best Practices and Applications*. 2nd ed. New York: CRC Press.

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Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)	
Status of Course & Credit: Major Course & 4	
Course Number & Title: HED-105 Practical	
Lectures/ Week: of 55 mts. Each. [Week 13 per semester]: L-6	
Total Lectures / Semester: 78	
1	**Introduction:** This course is introduced to analyze water and air quality using simple methods. Focusing on important parameters like pH, hardness, and pollutants, this course emphasizes practical skills and their impact on public health and the environment.
2	**Objectives:** 1. To equip students with the knowledge of key water quality parameters and their significance. 2. To develop skills in performing practical analyses of water and air quality using simple methods. 3. To enable students to interpret and evaluate the results of water and air quality tests. 4. To promote an understanding of environmental health and the impact of water and air quality on public health. 5. To encourage the application of scientific methods in environmental monitoring and assessment.
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: Proficient in Testing Techniques: Students will be able to effectively conduct tests for water quality parameters such as pH, conductivity, and hardness. CO2: Data Analysis Skills: Students will demonstrate the ability to analyze and interpret data related to both water and air quality. CO3: Critical Thinking: Students will develop critical thinking skills related to environmental health issues and the importance of monitoring water and air quality. CO4: Report Writing: Students will be able to compile and present their findings in a clear and concise manner. CO5: Informed Decision Making: Students will gain the ability to make informed decisions regarding environmental health based on their analyses.

Note: The practical will be on kit based.

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Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)	
Status of Course & Credit: Major Course & 4	
Course Number & Title: HED-106 Industrial Training	
Lectures/ Week: of 55 mts. Each. [Week 13 per semester]: L-4	
Total Lectures / Semester: 52	
1	**Introduction:** This course bridges the gap between theoretical knowledge and its application, enabling students to develop essential skills relevant to their field. Through hands-on training, students will explore industry practices, enhance their employability, and build professional networks. The course emphasizes critical thinking, problem-solving, and effective communication, preparing students for future career challenges. By the end of the training, students will be equipped to apply their learning in a professional context, reflecting on their experiences for personal and professional growth.
2	**Objectives:** 1. Apply Theoretical Knowledge: Enable students to apply theoretical knowledge from their studies in real-world industrial settings. 2. Skill Development: Facilitate the development of practical skills relevant to the industry, enhancing employability. 3. Industry Awareness: Increase awareness of current industry practices, trends, and challenges. 4. Professional Networking: Encourage students to build professional relationships and networks within their field. 5. Problem-Solving: Promote critical thinking and problem-solving skills through hands-on experience in industrial environments.
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: Demonstrate Practical Skills: Exhibit proficiency in industry-specific tasks and operations relevant to their training. CO2: Integrate Knowledge: Integrate theoretical concepts learned in the classroom with practical applications in the workplace. CO3: Evaluate Industry Practices: Critically evaluate and analyze industry practices and processes encountered during the training. CO4: Communicate Effectively: Communicate professionally with peers and industry professionals, demonstrating interpersonal and teamwork skills. CO5: Reflect on Experience: Reflect on their industrial training experience to identify areas for personal and professional growth.

Note: The course based on industrial training

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Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)			
Status of Course & Credit: Major Course & 4			
Course Number & Title: HED-201 Environmental Law & E.I.A.			
Lectures/ Week: of 55 mts. Each. [Week 13 per semester]: L-4			
Total Lectures / Semester: 52			
1	**Introduction:** This course objectives to understand environmental legislation in India, covering key laws and enforcement challenges. Students will be aware about the roles of pollution control boards, Environmental Impact Assessments (EIA), and foster a deeper understanding of environmental protection and advocacy.		
2	**Objectives:** 1. To Examine major environmental laws and regulations in India, including their historical context and implications. 2. To comprehend the principles of chemical safety, including concentration units, control measures, and laboratory practices. 3. To Identify challenges and mechanisms for the enforcement of environmental laws. 4. To Learn the process of Environmental Impact Assessment (EIA) and its significance in decision-making. 5. To Discuss the importance of international agreements and standards in environmental protection		
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: To Identify various environmental pollutants and their sources CO2: To explain the structure and functions of Central and State Pollution Control Boards. CO3: To evaluate the effectiveness of specific environmental laws and regulations. CO4: To Analyze case studies of public interest litigations (PILs) and their impact on environmental policies. CO5: To Conduct an EIA and prepare a comprehensive report, including cost-benefit analyses. CO6: Discuss the implications of international treaties on national environmental policies.		
4	**Course Contents to be covered**	**Period**	**Bloom's Taxonomy Learning outcome**
	UNIT 1: ENVIRONMENTAL LEGISLATION Role and functions of pollution control boards, duties and responsibilities of citizens for environmental protection	10	Students will identify types and causes of industrial accidents, explain safety fundamentals, and apply safe work practices through
	UNIT 2: ENVIRONMENTAL LAWS: Wildlife Protection Act 1972, The Water Act 1974. Air (Prevention and Control of Pollution) Act 1981, Forest	10	To focuses on recognizing various personal protective equipment (PPE), understanding the work permit system, and applying safety precautions effectively in high-pressure situations.

	Conservation Act 1980, Environment (Protection) Act 1986, Hazardous waste Rules, 2008, Bio-Medical Waste Rules 2016.		
	UNIT 3: ENFORCEMENT OF ENVIRONMENTAL LAWS Issues involved in enforcement of environmental legislation, public awareness, public interest litigations (PILs) and its role in control of environmental pollution in India.	10	The learner will identify key components of emergency plans, explain their significance, and apply risk prevention measures for confined spaces.
	UNIT 4: ENVIRONMENT IMPACT ASSESSMENT Environmental Impact Assessment (EIA), Steps of EIA, General guidelines for the preparation of EIA report, Scope and types of environmental audit, cost benefit analysis.	10	Presenting recalling units of concentration, describing control measures, and assessing safety protocols in laboratories.
	UNIT 5: CERTIFICATION AND INTERNATIONAL ENVIRONMENTAL TREATIES: EIA Accreditation, Kyoto Protocol, Environmental Management Plan (EMP), International Organization for Standardization (ISO), ISO 14000 standards and certification, Carbon Footprints: Concept, Causes and Ways of reducing it, Carbon Credits.	12	To identify stakeholder roles in occupational safety, explaining the provisions of relevant legislation, and applying ISO standards in safety management practices.

Textbooks

1. Abbasi, S. A., & Arya, D. S. (2003). *Environmental Impact Assessment*. Discovery Publishing House.
2. Pr Trivedi & Gurdeep Raj (1992): Concepts in Environment, Akashdeep Publishing House, New Delhi
3. International Environmental Agreements an Indian Perspective: Ministry of Environment & Forests, Goi, N.D.
4. Sustainable Air Pollution Management, R Chandappa and Umesh Kulshrestha 2016

Reference

1. Hunter, D., Salzman, J., & Zaelke, D. (2019). *Environmental Law*. 8th Edition. Foundation Press.
2. Rao, V. R. P. S. M. (2017). *Environmental Policy and Law*. Deep & Deep Publications

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<tr><td colspan="4">Status of Course & Credit: Major Course & 4</td></tr>
<tr><td colspan="4">Course Number & Title: HED-202 Environment & Society</td></tr>
<tr><td colspan="4">Lectures/ Week: of 55 mts. Each. [Week: 13 per semester]: L-4</td></tr>
<tr><td colspan="4">Total Lectures / Semester: 52</td></tr>
<tr><td>1</td><td colspan="3">Introduction: This course introduces to present the relationship between environmental factors and societal structures. As environmental issues become increasingly pressing, understanding the impact of these factors on society is crucial for developing effective strategies for sustainable living.</td></tr>
<tr><td>2</td><td colspan="3">Objectives:
1. To understand students with the principles and objectives of environmental education and its significance in the National Education Policy (NEP) 2020.
2. To observe the effects of environmental changes on societal dynamics, including demographic shifts and health implications.
3. To promote national and international strategies for sustainable development and their relevance to local contexts.
4. To investigate the intersections of sanitation, health, and cultural practices, and their implications for public health.
5. To study the importance of biodiversity, threats it faces, and conservation strategies at various levels.</td></tr>
<tr><td>3</td><td colspan="3">Course Outcomes (CO)
After completion of the course, students will be able to:
CO1: To develop the key concepts in environmental education and management
CO2: To develop the principles of environmental education and its societal relevance.
CO3: To Apply environmental management concepts to local issues
CO4: To Analyze the relationship between environmental changes and demographic shifts.
CO5: To Assess the effectiveness of sustainable development strategies and develop a biodiversity conservation action plan and create an awareness program for sanitation issues.</td></tr>
<tr><td>4</td><td>Course Contents to be covered</td><td>Period</td><td>Bloom’s Taxonomy Learning outcome</td></tr>
<tr><td></td><td>UNIT 1: ENVIRONMENTAL EDUCATION & ENVIRONMENTAL MANAGEMENT
Objectives of Environmental Education, Action Plans
Environmental Education in National Education Policy (NEP)2020.
Features of Environmental Management, Management of Environmental Education</td><td>10</td><td>Students will define key concepts and describe the principles of environmental education, while implementing strategies for its integration into curriculum.</td></tr>
<tr><td></td><td>UNIT 2: ENVIRONMENTAL IMPACT ON</td><td>10</td><td>Students will identify demographic changes due to</td></tr>
</table>

	SOCIETY Demographic changes- Rural migration, Urban migration, Lifestyle, Modification, Business, Educational Implications, Health implications.		environmental factors and explain their implications on health and lifestyle, analyzing relevant case studies
	UNIT 3: SUSTAINABLE DEVELOPMENT The importance of environment to society, National & International Strategies for sustainable development- The World summit, GATT Agreements	10	Students will define sustainable development, summarize key initiatives, and apply these principles to local issues.
	UNIT 4: SANITATION, HEALTH AND SOCIETY Hygiene, Culture and Sanitation in India's Public health, New Culture of Urban Sanitation, Social structure, Cultural belief and practices, Sustainable Development Goals and Environment	10	To describe the connection between sanitation and public health and develop practical community solutions.
	UNIT 5: BIO-DIVERSITY AND ITS CONSERVATION Biodiversity, Biodiversity at global, national and local levels, Threats to biodiversity: habitat loss, Endangered and endemic species of India, Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.	12	Students will define biodiversity, explain its importance and threats, and propose both in-situ and ex-situ conservation strategies.

Textbooks:

1. Saxena, N. (2021). *Environmental Studies: A Global Perspective*. 2nd ed. New Delhi: Kalyani Publishers.
2. Gupta, A. (2020). *Environmental Education: Principles and Practices.* New Delhi: PHI Learning.
3. Ramakrishna, K. (2022). *Sustainable Development: Principles and Practices*. 1st ed. New Delhi: SAGE Publications
4. Singh, J. (2019). *Sanitation and Public Health in India*. 1st ed. New Delhi: Oxford University Press.
5. Krishnan, S. (2020). *Biodiversity Conservation: Principles and Practices.* 1st ed. New Delhi: Springer.

References:

1. National Education Policy (NEP) 2020. Government of India document outlining educational reforms, including environmental education.
2. United Nations Sustainable Development Goals (SDGs). Framework for global sustainability, with a focus on environmental health and sanitation.

DAYALBAGH EDUCATIONAL INSTITUTE
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DEPARTMENT: Sociology & Political Science
FACULTY: Social Sciences

Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)			
Status of Course & Credit: Major Course & 4			
Course Number & Title: HED-203 Disaster Management			
Lectures/ Week: of 55 mts. Each. [Week: 13 per semester]: L-4			
Total Lectures / Semester: 52			
1	**Introduction:** This course introduces essential knowledge and skills to understand and respond to various hazards and disasters. The course covers the social impacts of disasters, disaster management processes, and the role of information technology, as well as fire safety fundamentals, preparing students to be effective leaders in promoting community strength and safety.		
2	**Objectives:** 1. To provide students with characteristics, and classifications of hazards and disasters, including their environmental implications. 2. To understand the effects of disasters on communities, cultures, and national development, focusing on the socio-economic and psychological aspects. 3. To introduce students with the fundamental principles, processes, and planning strategies for disaster management. 4. To explore the role of information technology in disaster management and the importance of ethical decision-making in administrative processes. 5. To educate students on fire dynamics, prevention methods, firefighting techniques and risks associated with various types of fire.		
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: To develop key concepts related to hazards, disasters, and their classifications. CO2: Describe the impact of disasters on societies, including cultural and economic aspects. CO3: Apply disaster management principles to develop effective planning and response strategies. CO4: To Analyze the role of information technology in enhancing disaster management efficiency & effectiveness. CO5: To promote fire prevention and response plans that incorporate best practices and safety regulations.		
4	**Course Contents to be covered**	**Period**	**Bloom's Taxonomy Learning outcome**
	UNIT 1: HAZARD & DISASTER Meaning, Types & Classification, and Characteristic features, of Hazards and Disasters, Hazards Disasters and Environment.	10	Students will define various types and characteristics of hazards and disasters, describe risk and vulnerability, and analyze the relationship between hazards, disasters, and the environment.

	UNIT 2: DISASTER & SOCIETY Impact of Disaster on Cultures and Communities, Disaster & National Development, Sociology of Hazards and Disasters, Social, Psychological, and Political Aspects of disaster.	10	they will identify the impacts of disasters on cultures and communities, explain the socio-economic and psychological aspects of disasters, and evaluate disaster assistance mechanisms at individual and public levels
	UNIT 3: INTRODUCTION TO DISASTER MANAGEMENT: Meaning and Scope of Disaster Management; Roles and Responsibilities; Disaster Management Process & Planning. Financial and Administrative Requirements.	10	Students will define the scope of disaster management, outline roles and responsibilities, and analyze the disaster management process, including financial and administrative requirements.
	UNIT 4: INFORMATION TECHNOLOGY & DISASTER MANAGEMENT Information Technology & its role in Disaster Management, Evaluating Service Delivery System.	10	will assess the role of information technology in disaster management and evaluate ethical considerations in administrative decision-making.
	UNIT 5: FUNDAMENTAL OF FIRE ENGINEERING AND SPECIFIC RISKS Theory & Chemistry of Fire, Fire Prevention Methods, Storage & Transportation of Flammable Explosive Material, Firefighting System, Fire Extinguishing and their Maintenance, Fire Plans & Drills, First Aid for Burns, Fire Protection System and Prevention.	12	Students will understand the theory and chemistry of fire, identify types of fire and fire prevention methods, and apply knowledge of firefighting systems and first aid for burns, alongside evaluating safety protocols for hazardous materials and environments.

Textbooks

1. Goel, S. (2021). Disaster Management: A Disaster Manager's Handbook. 2nd ed. New Delhi: Deep & Deep Publications.
2. Perry, R. W., & Lindell, M. K. (2017). Preparedness for Disasters and Emergencies: A Review of the Literature. 1st ed. New York: Wiley.
3. Reddy, K. R. (2020). Introduction to Disaster Management. 1st ed. New Delhi: Wiley India Pvt. Ltd.
4. Khan, F. I., & Abbasi, T. (2020). Safety, Security and Disaster Management. 1st ed. New Delhi: PHI Learning.

References:

1. Introduction to Hazard and Disaster Management: by R. E. D. (2017). Routledge.
2. Disasters and Society: A Sociological Approach: by T. A. R. (2014). Springer.
3. Information Technology for Disaster Management: by C. M. R. (2015). Wiley.
4. Fundamentals of Fire Protection" by L. W. A. (2016). National Fire Protection Association.

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FACULTY: Social Sciences

<table>
<tr><td colspan="4">Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)</td></tr>
<tr><td colspan="4">Status of Course & Credit: Major Course & 4</td></tr>
<tr><td colspan="4">Course Number & Title: HED-204 Environmental Pollution</td></tr>
<tr><td colspan="4">Lectures/ Week: of 55 mts. Each. [Week: 13 per semester]: L-4</td></tr>
<tr><td colspan="4">Total Lectures / Semester: 52</td></tr>
<tr><td>1</td><td colspan="3">Introduction: This course provides students with a comprehensive understanding of various types of pollution and their effects on human health and ecosystems. Students with the knowledge and skills to analyze pollution issues critically and develop practical solutions for environmental protection and sustainability.</td></tr>
<tr><td>2</td><td colspan="3">Objectives:
1. To understand Air Pollution, the types, sources, and effects in both rural and urban environments.
2. About Water Pollution, pollutants, identify their sources, and discuss wastewater treatment methods for domestic and industrial contexts.
3. To understand soil pollution, composition, classify soil pollutants, and impacts of pesticides and chemical fertilizers on agriculture.
4. To investigate noise, thermal, and nuclear pollution, focusing on their causes, effects, and control measures.
5. To address global environmental challenges, including climate change, global warming, and ozone layer depletion, through case studies.</td></tr>
<tr><td>3</td><td colspan="3">Course Outcomes (CO)
After completion of the course, students will be able to:
CO1: To Identify Air Pollutants and find out their sources, effects, and mitigation techniques.
CO2: To assess water pollutants, sources, and the effectiveness of wastewater treatment processes in various settings.
CO3: To discuss soil composition and the effects of various pollutants, including the impacts of agricultural practices on soil health.
CO4: To study about causes and consequences of noise, thermal, and nuclear pollution, proposing control measures for each.
CO5: To Investigate and present findings on major global environmental issues, demonstrating an understanding of their implications.</td></tr>
<tr><td>4</td><td>Course Contents to be covered</td><td>Period</td><td>Bloom’s Taxonomy Learning outcome</td></tr>
<tr><td></td><td>UNIT 1: AIR POLLUTION
Types of pollutants (Rural & Urban: Indoor & Outdoor), Pollutants- CO, NOx, HC, SOx and particulates, pollutants and effects of pollutants on man and environment.</td><td>10</td><td>Students will identify different types of air pollutants and where they come from. They will learn how pollutants like CO, NOx, and others affect health and the environment, and explore ways to reduce air pollution through real-life examples.</td></tr>
<tr><td></td><td>UNIT 2: WATER POLLUTION
Classification of water pollutants,</td><td>11</td><td>Students will recognize various water pollutants and their sources. How wastewater is treated in</td></tr>
</table>

	sources, wastewater treatment, Problems of water Pollutants in rural and urban areas.		homes and industries and analyse water pollution issues in cities and villages to suggest solutions.
	UNIT 3: SOIL POLLUTION Classification of Soil, Composition of soil, classification and effects of pollutants on soil pollutants and their control. Problems of pesticides and chemical fertilizers in agriculture.	10	Students will learn about different types of soil and what they are made of. They will understand how pollutants like pesticides affect soil and will evaluate methods to control soil pollution in farming.
	UNIT 4: NOISE, THERMAL AND NUCLEAR POLLUTION Causes, effects, control measures and prescribed limits	10	To explain what causes noise, thermal, and nuclear pollution and how they impact people and the environment. They will also look at ways to control these types of pollution and learn about safety standards.
	UNIT 5: GLOBAL ISSUES AND THE ENVIRONMENT Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents. Case studies	11	To summarize important global environmental issues like climate change and ozone depletion. Review case studies of environmental disasters to understand their effects and create action plans to address these issues.

Textbooks

1. Garg, S. K. (2021). Environmental Pollution and Control Technology. 1st ed. New Delhi: Khanna Publishers.
2. Mishra, S. K. (2020). Environmental Pollution: Causes and Remedies. 1st ed. New Delhi: APH Publishing.
3. Bhatia, H. (2022). Water and Air Pollution Control Engineering. 1st ed. New Delhi: PHI Learning.
4. U. Kulshrestha (2017) Air Pollution and Climate Change in South Asia

References

1. Air Pollution: Measurement, Modelling and Mitigation" by S. R. J. A. H. (2015). Springer.
2. Water Pollution Control: A Guide to the Use of Water Quality Management Principles" by J. A. C. H. (2003). Wiley.
3. Global Environmental Change: Understanding the Human Dimensions" by R. J. T. (2015). National Academies Press.

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DEPARTMENT: Sociology & Political Science
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Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)	
Status of Course & Credit: Major Course & 4	
Course Number & Title: HED-205 Practical	
Lectures/ Week: 55 mts. Each. [Week: 13 per semester]: L-6	
Total Lectures / Semester: 78	
1	**Introduction:** To introduce the practical course focused on measuring noise, pH, conductivity, and essential nutrients like Na, Ca, and NPK. Students will conduct a case study comparing an eco-friendly village to non-eco-friendly sites and participate in fire safety demonstrations and awareness activities aimed at rural communities.
2	**Objectives:** 1. To teach students skills to measure environmental parameters like noise, pH, conductivity, and essential nutrients. 2. To enable students to analyze and compare eco-friendly practices in villages versus non-eco-friendly sites. 3. To raise awareness about fire safety through practical demonstrations targeted at rural communities. 4. To encourage critical analysis of environmental practices and their impacts on community health and safety. 5. To educate rural populations about sustainable practices and safety measures.
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: To accurately measure noise levels, pH, conductivity, and nutrient content in various samples. CO2: To analyze data from case studies to draw conclusions about the benefits of eco-friendly practices. CO3: To demonstrate an understanding of fire safety protocols and effectively communicate this knowledge to others. CO4: To engage with rural communities, applying their learning to promote sustainable practices and safety. CO5: Able to make informed decisions regarding environmental health based on their practical experiences and analyses.

Note: The practical will be based on kit.

Textbook:

1. Environmental Monitoring and Assessment, M. S. S. Raju, S. K. Sharma, 2019.
2. Fundamentals of Environmental Measurements, David J. H. Phillips, 2020.

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DEPARTMENT: Sociology & Political Science
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Program Name- Post Graduate Diploma in Safety Health & Environment (PGDSHE)	
Status of Course & Credit: Major Course & 4	
Course Number & Title: HED-206 Project Work	
Lectures/ Week: 55 mts. Each. [Week: 13 per semester]: L-8	
Total Lectures / Semester: 104	
1	**Introduction:** This course introduces a health education topic that interests you by working on a hands-on project. This is your chance to apply what you've learned in class to real-world situations. You'll develop important skills like research, data analysis, and presentation. Whether you choose to work alone or in a group, you'll enhance your critical thinking and teamwork abilities.
2	**Objectives:** 1. To develop research skills of students' ability to conduct independent research in the field of health education. 2. To apply practical application of theoretical knowledge in real-world settings through hands-on project work. 3. To develop Critical Thinking and problem-solving skills in health education contexts. 4. To promote teamwork and collaborative skills through group projects. 5. To improve written and oral communication skills by presenting project findings.
3	**Course Outcomes (CO)** After completion of the course, students will be able to: CO1: Students will be able to design and execute a research project relevant to health education. CO2: Students will demonstrate the ability to analyze data and interpret results effectively. CO3: Students will manage project timelines, resources, and deliverables successfully. CO4: Students will present their findings clearly and effectively to diverse audiences. CO5: Students will reflect on their learning experiences and apply feedback to improve future projects.

Note: The course based on dissertation