



MSC IN ENVIRONMENTAL AND OCCUPATIONAL HEALTH

NEPAL OPEN UNIVERSITY FACULTY OF SCIENCE, HEALTH AND TECHNOLOGY MANBHAWAN, LALITPUR, NEPAL 2076 (2020)

Introduction

Nepal Open University (NOU) has developed the Master in Science in Environmental and Occupational Health (MSc EOH) curriculum for producing qualified graduates in Environmental and Occupational Health (EOH). Viewing the necessity of an interdisciplinary and more specialized EOH program to maintain an ever-increasing need and demand for EoH professionals, MSc EOH course has been designed for the first time in Nepal. The two-year masters' degree EOH program under the Faculty of Science, Health and Technology in NOU provides a broader perspective on EOH with emphasis on applications and policy implications. The program focuses on preventing environmental and occupational health-related issues and promoting health through education, research, professional services and community development. The program seeks to analyze and describe the linkages of health with, environment and occupation. The EOH program educates, mentors, and inspires learners in environmental and occupational health, and develops proficient graduates in addressing global challenges in the health sector, and the environment and occupation health domains. The program provides a great deal of flexibility to the students to design and pursue learning in prominence areas through a set of thematically linked courses, field practicum, and research and thesis work.

EoH aims to equip individuals with the specialized skills and advanced knowledge required for professional practices or research in environmental and occupational health. Graduates of EOH program seek to identify how exposure from different substances and hazards in the natural and built environment affects human health. This interdisciplinary program develops proficient students who can identify the causes and consequences of wide ranges of environmental and occupational hazards and they can apply analytical and practical skills to protect local, regional, and global health from environmental and occupational issues. The program will consider the historical, institutional, legal, organizational, functional, policy, and theoretical issues to scholars and practitioners of EOH.

MSc EOH program prepares career-oriented professionals in the growing field of environmental health research, practice or consulting, and industrial and occupational hygiene. Students will gain the scientific knowledge and technical skills to assess and measure exposures of environmental and occupational hazards and develop control strategies to remediate these exposures, with the ultimate aim of ensuring safe and healthy environments and workplaces. On the completion of this course, a student will have a detailed understanding of risks and issues in

EOH in national and international perspectives and caliber to utilize the scientific skills in EOH sector in research, policy evaluation, and programs and practices.

Aims and Objectives of the Program

EOH program is designed for graduates who are seeking to develop a professional and skilled career in the areas of environmental and occupational health and investigate and manage environmental and occupational health hazards to promote healthy living.

The course aims to enhance the quality of human health, based on a sustainable environment and job-related services. The knowledge gained through case studies, seminars, workshops and field practice of EOH is aimed to develop a comprehensive understanding and practices on environmental and occupational health-related professional skills. Graduates will lead and influence the development of high standards of environmental health and occupational safety.

The overall objective of the program is to graduate professionals in environmental and occupational health. The specific objectives are:

- To equip students with the technical knowledge, and practical skills through interdisciplinary learning, observation;
- To provide learning opportunities to the students in contemporary and frontier fields of EoH by utilizing the interdisciplinary knowledge of health, environment, science and society; thereby developing their skills and expertise for EoH-friendly development practices and prosperous EoH interventions;
- To produce professionals, skillful human resources who are committed to take challenges by utilizing ideas and innovations in EOH sector at various professions including local government authority, local officials and development practitioners;
- To develop professionals capable of stepping out the conventional practices and exploring new opportunities for the development and interventions in the current context.

Admission Eligibility

For admission eligibility to the course, an applicant must have completed the following prerequisites:

1. **Criteria 1:** Applicant must have completed a Bachelor's Degree (at least three years) or equivalent in any discipline related to basic or natural sciences or engineering or health sciences or medicine or nursing from a recognized university; or
2. **Criteria II:** Bachelor's degree (at least three years) in other disciplines with evidence of a minimum of five years working experience in the government sector, academic institutions I/NGOs or other agencies in environmental health or occupational health settings.

Applicants are selected from a merit list of entrance examination conducted by the NOU.

Degree Award

Degree awards to the students who graduated in the EOH program will be based on their admission criteria.

1. Students enrolled through admission eligibility criteria-I will be awarded in Master's Degree in Science in Environmental and Occupational Health.
2. Students enrolled through admission eligibility criteria II will be awarded in Master's Degree in Environmental and Occupational Health.

Course Structure Matrix of Environment and Occupational Health

Semester I (Compulsory)	Semester II (Compulsory)	Semester III Specialized (Optional)	Semester IV (Compulsory)
HEENH501. Environment and Health	HEOCH551. Occupation and Health	HEFSH601. Food Systems and Health	HEPRM651. Project Management
HEEPH502. Environmental Pollution and Health	HEHPL552. Occupational Health, Policy and Legal Frameworks	HEEHR602. Ecotoxicology and Health Risk Assessment	
HECCH503. Climate Change and Health	HEOHS553. Occupational Health Safety	HEBRM603. Biostatistics and Research Methodology	
HEWMH504. Waste Management and Health	HEHYG554. Occupational Hygiene	HEPRA604. Environmental and Occupational Health Practicum	HESCW652. Scientific Writing
HEPRA505. Environmental and Occupational Health Practicum	HEPRA555. Environmental and Occupational Health Practicum	HEENE621. Environmental Epidemiology (Elective-I) HEOCE622. Occupational Epidemiology (Elective-II)	HETHE699. Thesis
4x3+3=15	4x3+3=15	4x3=12+5 =17	3+3+10=16 Total = 63 Credits

- Grand Total Credits= 63
- Credit for Theory=36 (55%) and Practical= 27 (43%)
- Total Marks =1575, Theory= 900 (57%) and Practical =675 (43%)
- Total Lecture Hours= 1800
- Total Lecture Hours for Theory = 585(32.5%)
- Total Lecture Hours for Practicum/Practices Course = 1215 (67.5%)

Note: One credit is equivalent to 15 lecture hours and 25 marks for theory; and 45 hours and 25 marks for practicum.

Evaluation

During the semester, 40% percent marks will be allocated for the internal assessments. This includes class attendance, assignments on article review, term paper, case study, project work and participation in workshops, seminars and field study. The respective instructor and professor will be responsible for this formative evaluation. After the completion of the semester, 60% of marks will be allocated for the written assessment exam to evaluate the understanding and knowledge of the student on the specific subject matter. The student should appear in the designated examination center and take up the proctored examination. University can take the exam online as an alternate mode of examination.

Course Delivery

- Deliver online courses where the instructor and student will connect virtually to build-up systems for interaction.
- Use of e-learning approach integrated into teaching and learning strategies through the application of online databases and the video-audio system of learning. This system will provide the learners with the interface between synchronous and asynchronous interactions.
- A combination of online and face-to-face interaction in the blended model that includes a mix of lectures, seminars, workshops, webinars, etc.
- Students will also participate in seminars, workshops, field practice and critiques of academic papers, case studies, and general discussions of academic and ethical issues.
- Students will also join the sector-relevant organizations working on public health, environmental health, occupational safety and other related organizations; so that they get opportunities to interact and learn from the other practitioners.

M.Sc Environmental and Occupational Health
Faculty of Science, Health & Technology
Nepal Open University

Syllabus for Entrance Test

EVALUATION MODALITY: Written test and interview

Entrance Marks Division

Full Marks	100
Group A: Multiple Choice Questions (MCQs)	25
Group B: Subjective	55
Group C: Interview	20
Entrance Time	3 hours

Curriculum and Question Load

I. Objective Questions:

1 x 25 = 25 Marks

Discipline	Curriculum	MCQs
Basic Science	Fundamentals concepts of biological classification, medically important viruses, bacteria, protozoa and helminths, human physiology and anatomy, atomic structure, cytology and genetics, life cycle and pathogenicity of <i>Plasmodium vivax</i> , <i>Leishmania donovani</i> , <i>Fasciols hepatica</i> , <i>Taenia solium</i> , <i>Ascaris lumbrocoides</i> and fundamental concepts of entomology.	1 x 5 = 5
Public Health	Diseases commonly found in Nepal (vector-borne, waterborne, foodborne and neglected tropical diseases), non-communicable diseases, research methods, basic terminologies in epidemiology, disease control and prevention.	1 x 5 = 5
Environmental Health	Public health consequences of environmental pollution, climate change, solid waste management, food and environment, fundamental concepts of hydrology and meteorology and concepts of water sanitation and hygiene	1 x 5 = 5
Occupational Health Safety	Occupational health problems (chemicals, biological, mechanical), occupational safety, concepts of ergonomics, first aid, techniques of stress management	1 x 5 = 5
General Knowledge	Vector biology, United Nations, Environment Program (UNEP), Intergovernmental Panel on Climate Change (IPCC), International Society for Environmental Epidemiology (SEE), International Labour Organization (ILO), World Health Organization (WHO), International Commission on Occupational Health (ICOH), Institute for Health Metrics and Evaluation (IHME)	1 x 2 = 2

Research and IT	Data collection tools and techniques, descriptive analysis, proposal writing, casestudy, fieldwork writing and basic knowledge of MS-office, email, internet, database search	1 x 3 =3
-----------------	---	----------

Question model for MSCs

- Short term effects of air pollution on human health include
 - emphysema
 - heart disease
 - lung cancer
 - nausea

Answer: D

- A doctor is required to study the incidence of silicosis in a stone cutting industry, which study design should he choose:
 - longitudinal
 - cross-sectional
 - ecological surveys
 - case reports

Answer: A

II. Subjective

Area: Basic Science, Public Health, and Environmental Health, and Occupational Health and Safety

Question model for Subjective

Long Questions

20x2=40 marks

- Climate change adversely affects water access and food availability. In your experience, what kinds of impacts on water and food are noticed from climate change in Nepal? Explain the issues with suitable examples.
- Elaborate on the importance and applications of occupational hygiene practices in safeguarding workers' health and well-being within the diverse range of industries.

Short Questions

7.5x2=15 marks

- Explain the impact of environmental pollution on disease burden in your local level.
- What can be done in Nepal to improve the occupational health and safety of women and elderly people?

Contact

Nepal Open University
Lalitpur, Nepal
Tel: +977-01-50008047, 5008048