MASTER OF PHILOSOPHY IN HEALTH SCIENCES PROGRAMME- Occupational Hygiene

GENERAL INFORMATION

Introduction

The increasing concern about chemical, physical and biological hazards in the environment and the health and safety of workers has prompted the formation of a graduate programme in Occupational Hygiene at the University of Bergen, Norway.

Occupational hygiene, the investigation of the workplace environment, emphasises the evaluation and improvement of workplace health and safety. The occupational hygienist works to identify and evaluate chemical, physical and biological exposure risks in diverse workplace settings. The hygienist then acts on this information to implement changes or controls, which will eliminate or reduce these potential hazards. In a multidisciplinary approach, the study of workplace health and safety draws upon the disciplines of chemistry, physics, engineering, medicine and many others. There are few such programmes in the world. This programme is the only University-level programme in occupational hygiene in Norway, but the programme will address the growing demand for occupational professionals both in Norway and in other countries.

Programme objective

The primary objective of the programme is to provide academic and professional hygienists with the expertise to identify and evaluate the risks associated with physical, chemical and biological hazards in the workplace and with the skills to effect changes which will eliminate or control these hazards.

Strengths of the Occupational Hygiene Programme

The programme is based within the Faculty of Medicine at the University of Bergen, and will be carried out at the Department of Public Health and Primary Health Care. This department has a long tradition concerning interdisciplinary co-operation, and this will ensure that the programme maintains an interdisciplinary character, presenting an incentive for applicants to interact with people in related disciplines as they attend the courses. The programme will also have teachers from other faculties at the University.

Admission requirements

The candidates to the Master of Science in Occupational Hygiene at the Faculty of Medicine must fulfil the basic requirements for admission to the University of Bergen.
The candidates admitted are Bachelors of Science (B.Sc.) from a University, from a Technical College or candidates with equivalent qualifications. Main subjects in the B.Sc. are chemistry, biology and/or physics.

Competence in English language must be demonstrated by obtaining an adequate score on the TOEFL/IELETS tests or equivivalent qualification.

Programme organisation

The two-year programme (4 semesters) consists of two main components:

a) Theoretical training (first and second semester):

The theoretical training consists of 60 ECTS credits of courses. These courses are described in detail on the next pages.

Courses corresponding to 24 ECTS credits are selected from those given by the Centre for International Health at the University of Bergen.

The other courses are given by the Department of Public Health and Primary Health Care. In particular the courses given during the second semester will be based on the pedagogical principles of Problem-Based Learning, which means that the students have to solve problems by practical and theoretical work. The aim is to learn from own experience.

b) Research project/thesis (third and fourth semester):

During the first year of the programme the candidate must, in co-operation with a supervisor, define and plan a research project. The project must be carried out the second year of the programme, and a thesis must be written.

COURSES AND SEMINARS.

A. Introductory course

All students must participate in the introductory course arranged during the first two weeks. This course is held by the Office for Foreign Students and provides an introduction to the Norwegian University system and to topics relevant for the stay in Norway. The students may also attend a basic course in Norwegian.

Compulsory courses.

Part 1:

Basic courses (First semester; 27 compulsory + 3 elective credits)

The first four courses are arranged at the Centre of International Health. For details, see specific information from the Centre.

	Credits
INTH301 Basic course in research tools and theory	**6**

- Use of computers
- The medical library/Medline/CD-ROM
- Philosophy of science and research ethics
- Reseach planning
- How to write a scientific paper

INTH302 Epidemiology **6**

ODO-STAT Statistics I **6**

INTH304 Major health problems in developing countries **6**

INTH310 Introduction to Occupational Hygiene **3**

- Occupational hygiene and health – definitions
- Main concepts in occupational hygiene
- Regulations and standardizations
- Literature and sources of information
- Occupational health in different countries

Part 2:
Specialisation in occupational hygiene
(Second semester; 25 compulsory + 5 elective credits).

INTH331 Monitoring chemical factors in the work environment; 9 credits

- Air pollution in the working atmosphere
- Methods for air measurements
- Sampling and analysis
- Hygiene standards
- Excursions and exercises
- Calculation, interpretation and presentation of results
- Writing of report based on results from the exercises
- Biological measurements
- Risk assessment; terminology, principles and methods

INTH332 Preventive measures for chemical factors; 5 credits

- Hazardous substances use and processes
- Workplace control principles
- Elimination/substitution of chemicals
- Process-technical measures
- Ventilation systems
- Administrative changes
- Personal protective equipment

INTH334 Noise and vibrations; 5 credits

- Health effects of noise
- Measurements of noise
- Machinery noise and technical measures to reduce noise
- Personal hearing protection
- Field exercises - written report
- Body vibrations and hand - arm vibrations
- Monitoring and assessment of exposure
- Introduction to environmental noise
- Standards

INTH333 Biological factors and climatic conditions; 6 credits

- Sources of bioaerosols (bacteria, viruses, moulds, cell fragments)
- Exposure in different work environments
- Health effects of bioaerosols
- Monitoring biological factors - preventive measures
- Parameters of indoor air; air contaminants and thermal factors
- Ventilation in office buildings
- Health and non-industrial indoor air quality
- Monitoring and assessment of indoor air
- Improvement of indoor air quality
- Multiple chemical sensitivity
- Work physiology and heat stress

Part 3:
Thesis and final examination
(Third and fourth semester; 60 credits)

At the end of the two-year programme, the candidate will submit the thesis.
The thesis should preferably be presented in two parts:

1. A general presentation (about 50 pages) of the research field as well as the aims, methods and conclusions of the study
2. One comprehensive manuscript or two other manuscripts less demanding written according to publication instruction from the particular journal. The manuscripts need not to be accepted for publication, but should have a format suitable for publication in scientific journals.

Alternatively, the thesis may be presented as a monograph of approximately 100-120 pages.
A committee of at least three persons will assess the thesis for the M. Phil. in Health Sciences. The candidate will defend the thesis as part of an oral examination before this committee.

The Assessment committee consists of at least one external examiner and a representative from the Centre for International Health. The supervisor shall also attend the examination and may also do parts of the examination.