



POST GRADUATE DIPLOMA IN OCCUPATIONAL HEALTH (PPH7008W)

PROGRAMME DOCUMENT

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SCHOOL OF PUBLIC HEALTH AND FAMILY MEDICINE

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The Diploma in Occupational Health is designed for medical practitioners who are working part-time or full-time in the practice of occupational health or who have an interest in occupational medicine and its interrelatedness to other branches of clinical medicine and disability assessment.

It is established to demonstrate that the holder has achieved a level of competence appropriate to the generalist working in occupational health as required by the Occupational Health and Safety Act (OHSA) and the Mine Health and Safety Act (MHSA). It is quite separate from the other qualification, occupational medicine specialist, which is a registerable specialty with the Health Professions Council of South Africa (HPCSA).

A) ADMISSION REQUIREMENTS

A medical degree awarded by this University or another university recognised by the Senate for the purpose. Occupational health experience is considered an advantage.

B) EXIT COMPETENCIES

By the end of the course, candidates should be competent in the 3 main areas of focus of this course viz. Occupational health risk assessment and management, Occupational medicine and work ability, and Occupational health services management.

1. Occupational health risk assessment and management

The candidate has special competence in Health Risk Assessment, and is able to:

- Understand definitions of “risk assessment” as used in different contexts, viz. workplace, epidemiological, toxicological, accident/disaster and environmental contexts.
- Describe the occupational risk exposure profile of the workforce in terms of physical, chemical, biological and work organisational (ergonomics and psychosocial stresses) workplace hazards.
- Understand social, behavioural and biological (host) characteristics that influence susceptibility to workplace exposures.
- Conduct a workplace health risk assessment in a workplace, characterise types and levels of exposures and integrate relevant data from a variety of sources including employer records, job descriptions, occupational titles, lengths of service, and company exposure records

- Understand the concept of occupational exposure limits for a range of hazards and be able to apply these critically to workplace conditions taking into consideration relevant standards and regulations.

Is familiar with the discipline of Occupational Hygiene and Exposure Assessment, and is able to:

- Apply the basic principles of occupational hygiene, including measurement, control and evaluation.
- Understand how exposure data is obtained for individual exposures (current and cumulative dose) and summarised for group exposures (mean, median and standard deviation, geometric mean and geometric standard deviation)
- Interpret and apply data and recommendations from occupational hygiene reports.
- Characterise the common hazards in a wide range of production processes found in South Africa.
- Design a practical comprehensive hazard control program and present multiple strategies for hazard control given relevant economic, psychosocial, political and industrial relations factors.
- Advise on practical control systems for air pollutants, skin irritants, noise, heat, etc.
- Advise on personal protective equipment and its limitations.

Is familiar with the discipline of Toxicology, and is able to:

- Apply the basic principles of occupational toxicology including the relationship between environmental exposure, biological monitoring and biological effect monitoring as measured along a continuum from exposure to disease.
- Extract and use toxicological information.
- Interpret material safety data sheets.
- Communicate relevant toxicological information to a lay audience.

Is familiar with the discipline of Ergonomics, and is able to:

- Apply the basic principles of ergonomics.
- Carry out a basic ergonomic risk assessment.
- Advise on common control strategies to prevent ergonomically related injuries or ill health.

Has an understanding of Environmental Management, and is able to:

- Have sufficient knowledge of the impact of work production processes on the environment and how to prevent or mitigate the associated risks to the surrounding community (e.g. air quality management)
- Be familiar with the legal framework for environmental health in South Africa.
- Contribute to the environmental component of a safety, health and environment policy for workplaces.
- Communicate with representatives of residents / third party groups affected by workplace operations.

Has special competence in Occupational Health and Safety law, and is able to:

- Have sufficient knowledge of the main laws/regulations and the role of government agencies responsible for the prevention of occupational injury and disease. These include among others:
 - The Occupational Health and Safety Act, 1993 and its regulations
 - The Mine Health and Safety Act, 1996 and its regulations
- Advise others on and apply the main laws in occupational health and safety, and other laws of relevance to occupational health.
- Be familiar with the international standards and conventions that pertain to occupational health (e.g. ILO conventions)
- Work with lawyers on matters of civil law pertaining to occupational health.

2. Occupational medicine and work ability

Is clinically able to:

Exercise competence in all aspects, including history, examination, diagnosis, management and/or appropriate referral, of work-related disease or disability or threats to health and well-being:

- Have a thorough understanding of the concept of work-relatedness of disease, the principal of adverse health outcomes associated with occupational exposures and how to diagnose and measure these outcomes in individuals and groups.
- Investigate and diagnose the broad spectrum of occupational disease ranging from *work-related* respiratory, dermatology, musculoskeletal, ENT, infectious and mental health conditions.

- Interpret chest radiology, lung function testing, bronchial challenge testing, audiograms, vision screening, toxicological tests, biochemical testing, testing for infection and immune status, respiratory allergy testing, and skin patch testing.
- Refer appropriately those conditions requiring further investigation and management.
- Assess, manage and/or refer occupational trauma and workplace emergencies.
- Identify, counsel and/or refer employees with substance abuse and other psychosocial problems affecting work capacity.
- Advise on immunisation and prophylaxis against infectious disease arising from or affecting work, including employee travel and migrant labour.
- Assess, manage and/or refer common communicable (e.g. TB, HIV) and non-communicable diseases (e.g. hypertension, diabetes, obstructive lung disease) among adults at a primary care level.

Has special competence in biological monitoring and medical surveillance and is able to:

- Design effective biological monitoring and medical surveillance protocols in consultation with relevant stakeholders.
- Set up biological monitoring and medical programmes, including liaison with laboratories.
- Apply and interpret specific tests used in biological monitoring and medical surveillance.
- Evaluate cost-effectiveness of medical surveillance and biological monitoring protocols.

Has special competence in fitness, impairment and disability assessment and workplace accommodation and disability management, and is able to:

- Have a thorough understanding of the process of impairment and disability assessment as used in occupational health practice and the role of various role players such as human resource department, line managers, worker representatives, statutory bodies and private insurers.
- Have sufficient knowledge and an approach to assessing the fitness of a worker for a particular job and being familiar with various available guidelines.
- Assess and advise on fitness requirements for a specific job with a special focus on high risk jobs, viz. miners, drivers, firefighters, seafarers, pilots and divers.

- Assess or arrange assessment and /or management of workers with impairment and/or disability, including problems related to drug and alcohol dependency, psychotropic medication use, psychiatric problems and post-traumatic stress disorder.
- Counsel, advise and assist with job accommodation if necessary, of pregnant workers.
- Initiate and manage processes for rehabilitation of disabled workers.
- Apply understanding of the impact of any chronic or recurrent condition on work ability, and advise on any accommodation required.
- Follow procedures for compensating occupational disease and injury, and advise on medical aspects of claims procedures.
- Follow and/or facilitate procedures required for disability retirement processes, and contribute medical advice and expertise to assist resolution of claims.
- Has a basic knowledge of private care options and the various insurance options available so as to give advice to employers buying such services.

Has special competence in the main laws and agencies responsible for the provision of workers' compensation and the management of disability. These include:

- The Compensation for Occupational Injuries and Disease Act, 1993
- The Occupational Diseases in Mines and Works Act, 1974
- The Labour Relations Act, 1996
- The Employment Equity Act, 1998
- The Basic Conditions of Employment Act, 1997

3. Occupational health services management

Demonstrates in practice an interdisciplinary or holistic perspective, and is able to:

- Integrate perspectives and skills from a variety of disciplines in medicine, public health, management, law and social sciences, in problem solving at individual, group or organisational level.
- Work effectively with a range of professionals and practitioners engaged in occupational health.
- Reflect in problem solving an in depth understanding of the institutional, legal, and ethical context of occupational medical and occupational health problems.

Has special competence in occupational health service design and audit, and is able to:

- Understand basic principles of the organisation of occupational health services, the different levels of prevention and cure provided
- Understand the array of potential functions of a workplace-based health service and to design and organise optimal mix for different contexts, including first aid, primary care, and occupational health components.
- Link the occupational health service to existing safety, environment, human resources and other management subsystems in the organisation.
- Apply quality assurance methods to occupational health services.
- Apply common audit procedures to occupational health and safety systems, and assist in preparation for such audits.
- Evaluate these services for efficacy, effectiveness, utilisation and cost-efficiency.

Has a sound knowledge of health promotion and management of common community and lifestyle diseases in the workplace, and is able to:

- Apply the principles and techniques of health promotion and disease prevention at primary (pre-exposure and pre-effect screening), secondary (periodic monitoring for early diagnosis) and tertiary (rehabilitation and limitation of disability) level. Understand the special importance of subclinical abnormalities detected by the screening process
- Develop health promotion programmes for specific conditions, including HIV, TB, STDs, tobacco and alcohol related conditions.
- Manage, in collaboration with other services, conditions requiring an interdisciplinary approach such as substance abuse, mental ill-health, and cardiovascular disease.

Has an understanding of Industrial Relations, and is able to:

- Apply the basic principles of industrial relations within the relevant institutional and workplace framework.
- Contribute constructively and ethically to the resolution of industrial relations conflicts involving health matters.
- Advise employers on the appropriate accommodation of disabled workers taking cognisance of codes of good practise and other legal considerations.

Has special competence in ethics in occupational health, and is able to:

- Assert the importance of ethical approaches in occupational medicine in the face of conflicts of interest.
- Advise others on ethical principles and practice with regard to subjects such as confidentiality, sickness certification, HIV screening, drug and alcohol screening and consent for surveillance.
- Contribute practically to the resolution of potential or actual conflicts with medical ethical and medico-legal dimensions.
- Understand the peculiarities of ethical issues in occupational health, particularly in how to manage situations of dual loyalty in the provision of OHS.

Is a competent communicator, and is able to:

- Communicate individually and in group situations with all participants in workplace organisations and occupational health: management, employees, union representatives and fellow professionals.
- Write clear and concise documents: proposals, policies, reports.
- Communicate risk information.

Is competent in adult education and training, and is able to:

- Apply the principles of adult education and learning.
- Contribute towards training materials for a variety of target audiences in the workplace taking cognisance of literacy issues when developing and evaluating the effectiveness of these materials.
- Conduct training seminars for a variety of audiences

Is a competent Manager of operations, and is able to:

- Develop operational plans, including budgets and procedures, for occupational health services or operating units.
- To plan, organise, staff, finance, manage, monitor and control a small scale occupational health service or operating unit.
- Participate in and contribute to the work of special technical committees (e.g. chemical evaluation committee, disability committee) and statutory committees (e.g. health and safety committee)

Has an understanding of information systems and resources, and is able to:

- Demonstrate a high degree of computer literacy.
- Use the internet and electronic and paper databases, legislation databases and library resources for information retrieval.
- Conduct a critical appraisal of a journal article to enable the daily practise of evidence-based medicine
- Design a clinic/workplace health information system for management, covering injuries and illnesses.
- Use an information system to evaluate health and safety performance or clinical service.

Has an understanding of Disaster Management, and is able to:

- Contribute to a disaster management plan tailored to the workplace, including provision for mass exposure and casualty scenarios.

Has special competence in the main laws responsible for the provision and management of occupational health services. These include:

- The Medicines and Related Substances Act, 1965
- The Occupational Health and Safety Act, 1993
- The Mine Health and Safety Act, 1996

C) TRAINING - Duration and attendance of the programme

Every candidate must be registered for the programme for at least two years (part-time). Retrospective registration is not allowed.

A registered candidate is required to attend all four one-week blocks (the examination being included in the last block) over the two-year period and complete all in course learning activities.

D) CURRICULUM AND CORE SYLLABUS

The Diploma core syllabus requires a minimum of 240 hours (NQF credits: 120) direct training as detailed below. To reach the required standard, candidates may need to undertake further private study that includes reading appropriate books and journals, attendance at professional meetings and visits to clinics and workplaces.

The main components of the programme include occupational health risk assessment and management; occupational and disability medicine; and occupational health services management. Relevant legislation, ethics and standards pertaining to these three focus areas will be covered. The practical activities include work-place visits, special investigations and their interpretation and clinical case studies.

1. Occupational Health Risk Assessment and Management

Theory

Definition of occupational health and its scope

Integration between occupational health risk assessment and the practice of occupational medicine

Law in occupational health: system, statutes and relevant regulations (OHSA, MHSA)

Principles and application of:

- Occupational health risk assessment and management (hierarchy of controls)

- Occupational hygiene

- Occupational toxicology, including carcinogenesis

- Epidemiology and biostatistics

Physical hazards in the work environment:

- Noise

- Temperature

- Visual environment

- Vibration

Chemical hazards in the work environment

Biological hazards in the work environment

Ergonomic hazards in the work environment

Psychosocial work environment (including workplace organisation, shift work and job stress)

Exposure standards and their application

Personal protective equipment (respirators, gloves)

Environmental pollution and environmental impact assessments

Practicals

Workplace visits:

- Types of hazards and their identification

- The walk-through survey and basic hygiene screening techniques

- Assessing and prioritising occupational health risks

- Application of control measures

- Monitoring outcome and feedback to workplace

- Oral presentation

Occupational hygiene equipment demonstration and interpreting material safety data sheets and occupational hygiene reports
Production of a written portfolio on occupational health risk assessment in a workplace
Critical appraisal of an article (focus on causation)
Summarising occupational health data into meaningful statistics
Searching electronic databases and legislation

2. Occupational Medicine and Work Ability

Theory

- i. The occupational and environmental history and examination**
- ii. Occupational disease diagnosis and management**

Evaluating the impact of hazardous work on specific organ systems viz.
Respiratory system: rhinitis, asthma, pneumoconioses, PTB, COPD, asphyxiants, heavy metal induced lung disease
Skin: contact dermatitis, urticaria
Musculoskeletal system: upper-limb disorders, Low back pain
ENT: noise-induced hearing loss
Nervous system: PTSD, organic brain syndromes (solvents), peripheral neuropathy (metals and toxins)
Other systems: infections (HIV, hepatitis), haematological, liver (toxic hepatitis)
- iii. Assessment of fitness to work - before/during employment:**

Work and work-environment analysis and adaptation
Special examinations: drivers, divers
Health screening and diagnostic medical examination
Management and impact of common conditions: hypertension, diabetes, epilepsy, TB and HIV
Travel medicine
- iv. Impairment and disability assessment**

Theory and legal framework:
Definition of terms - incapacity, impairment, disability, handicap
WHO - ICF (all versions), functional ability
Definition of different models of disability - medical model, social model, bio-psychosocial model

Indices of independence and mobility - usefulness as status/outcome measures, activities of daily living, functional limitation profiles, sickness impact profiles
Work ability/disability-related legislation: Basic conditions of employment act, Employment equity act and Labour relations act

Assessment and return to work integration:

Principles and practice - principles of disability medical analysis, functional limitations and functional capacity/impairment assessment, standardised measurement (indices and scales), overall functional capacity assessment (ability to perform job related functions safely)

Understanding and application of compensation systems as it relates to occupational impairment and ill-health

Rehabilitation, redeployment, resettlement and ill health retirement

v. General occupational health topics

Medical surveillance and biological monitoring (principles and application)

Diagnosis and reporting of occupational disease in terms of Worker's compensation-related legislation: COIDA, ODMWA

Managing absence attributed to sickness

Managing substance abuse

Practicals

Approach to taking an occupational history

Approach to clinical evaluation of certain organ systems e.g. wrist and back

Special investigations for work-related diseases - technique and interpretation:

Audiometry

Spirometry

Radiology (ILO system of classification)

Immunology (skin prick tests, specific IgE)

Vision testing

Workplace visit: designing a workplace exposure and medical surveillance programme

Critical appraisal of an article (focus on evidence-based interventions)

Case studies on diagnosis and management of occupational diseases

Case studies on tests for work ability

Submitting a claim for worker's compensation

Production of a written portfolio on a work-related clinical case

3. Occupational Health Services Management

Theory

Management concepts and occupational health: Planning, leading, organising, controlling

Occupational Health Services: the OH team, functions and management

Setting up occupational health services

Auditing occupational health services

Occupational health information systems

Ethics, communication and relationships with professional colleagues and current guidelines

Employment organisations, industrial relations and trade unions

Health promotion and disease prevention approaches

Practicals

Workplace visit: Auditing an occupational health service

Interpreting statistics from an occupational health information system

Production of a written portfolio on setting up an occupational health service

FORMAT OF THE EXAMINATION

The examination comprises three written papers, covering occupational health risk assessment and management; occupational medicine and work ability; and occupational health services management; and an oral examination for selected candidates with borderline marks.

Examinations are “closed book” and count for 50% of the total mark.

The remaining 50% is allocated to formative assessment during the programme by way of submission of three written portfolio reports and other assignments/quizzes demonstrating competence in application of the principles of occupational health in the practical setting. Guidance on the form of the portfolio of written evidence is contained in the proforma templates that will be provided.

Students must obtain 50% for *each* of the three portfolio reports and 50% separately for the examination taken as a whole, with at least 50% in two of the three examination papers. To graduate, a student must pass the formative and summative component with an overall mark of 50% or more.

There are no supplementary examinations, but candidates may be permitted to take the examination in a subsequent cycle.

In addition to the above, the external examiner retains the discretion to alter any mark based on an assessment of the candidate's performance across the course (or course component) as a whole.

Distinction

The Diploma may be awarded with distinction, provided an overall average of more than 75% with a subminimum of 70% on each of the formative assessment and examination components is obtained.

Award of the Diploma

Holders of the Diploma may use the postscript DOH (*UCT*). This qualification meets the legal requirements for an occupational medicine practitioner to perform occupational health-related activity in any South African workplace. It is however *not registerable* with the Health Professions Council of South Africa (HPCSA) as an additional *specialist qualification*.

Formative assessments

a) Portfolio reports

Preparation of the portfolio should ideally commence after completion of the contact block related to the module and it must be submitted (electronic and bound hard copy) **prior to** the commencement of the next contact module, which is generally scheduled 6 months later.

Three portfolio reports must be submitted covering the following areas:

- workplace assessment
- work-related clinical case
- needs assessment and design of an occupational health service

The workplace assessment should demonstrate the process of hazard identification, risk reduction and continuing surveillance, including application of the relevant legislation. The clinical case must have been seen and examined personally by the candidate and should demonstrate an understanding of the principles of occupational medicine. The occupational health service needs assessment and design must have been conducted by the candidate and need not be of the service they are currently responsible for.

The portfolio must be submitted using the template provided, which contains further guidance on the content, length and layout. Each portfolio should be 1500 - 2000 words in length.

An important part of the practice of occupational medicine is good, clear and authoritative written communication with employers and medical colleagues and the portfolio provides a good opportunity to demonstrate these skills. As the portfolio is not produced under examination conditions, it is expected that it will be well structured and professionally presented. It is assumed that candidates have access to basic word processing resources and marks may be deducted for poor presentation.

Each portfolio will be assessed by staff in the Department. Examiners are seeking evidence that the candidate has understood the principles of occupational health and can apply them in practice. Mentors will be assigned to students to provide support and advice in this regard.

b) Inter-block assignment

this will be handed out between the 2nd and 3rd block and will assess candidates' ability to integrate principles of exposure assessment (Block 1) and clinical occupational medicine practice (Block 2).

c) Inter-block Quizzes

Regular quizzes will be assigned that can be completed online. Two quizzes between each block should be completed within given timeframes. This will be in multiple choice format.

F) COMPUTER HARDWARE, SOFTWARE AND SKILLS REQUIRED OF CANDIDATES

As this course contains course information and electronic resources and course notes/lectures on the UCT e-learning platform (VULA), it is imperative that the candidate understand the requirements for computer hardware, computer software and computer skills required. In short, candidates should have good and easy access to a reliable computer and have familiarity with computers, email, the internet and appropriate software.

Important information for Candidates

Candidates will have to bear Internet Service Provider subscription costs in order to view learning materials, to download these for printing and to do exercises from time to time.

Prospective candidates will have to undergo **tests** prior to registration that will establish whether they are able to meet all the necessary hardware and software requirements to enable participation in the course. If these are failed, they will be encouraged to upgrade their hardware and software and/or learn the necessary computer skills that will be required to enable participation in the distance learning aspects of the course. If the test is not passed and it is not possible to upgrade hardware, software or improve computer skills, it will not be possible to be accepted into the course.

If accepted into the course it is necessary to **register fully** including payment of fees and to make all necessary visa, travel and accommodation arrangements in Cape Town **before** the course begins so as to facilitate access to the UCT web server and to be able to devote all the time during the first contact block to academic work. If registration is not completed fully before the course begins, it will not be possible to access these learning activities.

G) RECOMMENDED REFERENCE TEXTS

You will be able to access electronic materials including the **UCT DOH Electronic Handbook (2007) through** links from the UCT VULA Website using your student details or alternatively on the UCT open access website once the materials become open access (<http://opencontent.uct.ac.za/>).

In addition, the following texts are recommended for further reading:

- Koh D, Aw T-C, eds. Textbook of Occupational Medicine Practice, 4th edition, Singapore, World Scientific Publishing Co, 2018.
- Guild R, Ehrlich RI, Johnston JR, Ross MH, eds. Handbook of Occupational Health Practice in the South African Mining Industry, 1st edition, Johannesburg, South Africa, SIMRAC, 2001
- Palmer, KT, Brown, I, Hobson J. (Eds). Fitness for work: The Medical Aspects. 5th edition, Oxford University Press, 2013
- Gardiner and Harrington. Occupational Hygiene, 3rd edition, Blackwell, 2005.
- OHS and Labour Law standards: Jutas, Sabinet, Acts Online (<http://www.acts.co.za/>)
- South African Society of Occupational Medicine Guidelines. Available at www.sasom.org (free to members).
- Electronic web resources: e.g., International Labour Organisation (ILO) Encyclopaedia of OHS, National Institute for Occupational Safety and Health (NIOSH), Health and Safety Executive (HSE), American Conference of Government Industrial Hygienists (ACGIH), Wireless Information System for Emergency Responders (WISER), Wikipedia and Toxipedia
- Journals: Occupational and Environmental Medicine, American Journal of Industrial Medicine, Occupational Medicine (British), Scandinavian Journal of Work, Environment and Health, International Journal of Occupational and Environmental Health. Occupational Health Southern Africa