

Master of Science Medicine (MSc Med) Exposure Science

The School of Public Health, University of the Witwatersrand, offers a Master of Science Medicine (MSc Med) degree in the field of Exposure Science. This degree is targeted at potential academics, specialists or professionals in the field of occupational hygiene, environmental health, environmental sciences, chemistry, toxicology, physiology etc., with a scientific interest to bridge these fields.

Human exposure science entails the study of human contact and interaction (exposure) with chemical, physical or biological stressors occurring in their environments, and advances knowledge of the mechanisms and dynamics of events either causing or preventing adverse health outcomes. This MSc Med degree covers the principles of exposure science, focusing on understanding the exposure pathway, i.e. from source to the receptor via compartments such as air, water, in order to develop effective interventions to prevent exposure. The fundamental focus is the relationship between environmental and occupational exposures (i.e. to the general public, consumers, residents, workers) over the entire lifetime of a human being, and the potential impact on the health of communities and workforces. The degree also incorporates occupational hygiene and environmental health practices, which can be considered sub-specialisms of exposure science, however with a focus on controlling exposures.

The expected output levels/competencies are academically trained professionals/specialists/scientists in occupational and environmental hygiene (national health and environmental departments and services, consultancies, private and non-profit sectors, academia, etc.).

The degree is offered by both coursework and research, or by research (dissertation) only.

MSc Med Exposure Science by coursework and research (Programme code MCA08):

This comprises three parts:

- a) **Part 1** (coursework) consists of five one-week long courses in the form of interactive lectures, and practical, as well as on-line sessions covering the following topics: Introduction to Occupational & Environmental Health, Exposure-induced Health Outcomes, Exposure Science I (Principles), Fundamentals of Risk Assessment, and Exposure Control I (Fundamentals). These courses are offered in Year 1 of the Programme.
- b) **Part 2** (coursework) consists of five one-week long courses in the form of interactive lectures, and practical, as well as on-line sessions covering the following topics: Exposure Science II, Exposure Assessment Methods I, Exposure Assessment Methods II (Data Analytics and Analysis), Computational Exposure Assessment and Exposure Control II (Applications). These courses are offered in Year 2 of the Programme.

- c) **Part 3** is a research project in the field of Exposure Science, and is conducted across Years 1 and 2 of the Programme.

The coursework contributes 70% and the research 30% to the overall Programme.

MSc Med Exposure Science by research only (Programme code MRA05):

Applicants with proven research experience in an appropriate field will be considered for the MSc Med Exposure Science research track. Although no coursework is required, students can choose to attend any of the courses for credit, at an additional cost. Alternatively, modules can be undertaken by observation only (non-credited) at no charge. The latter option depends on availability of space on the Programme, and is not guaranteed. Depending on prior experience, students will be required to register for particular courses, to ensure that they gain the required relevant knowledge and skills.

Who can apply?

A university graduate who has been awarded a Bachelor degree of at least four years duration, e.g. Bachelor of Environmental Sciences with Honours, Bachelor of Health Sciences with Honours; Bachelor of Science with Honours or Bachelor of Technology. Practical experience in a relevant field, e.g. environmental sciences, environmental health, occupational health and/or safety, occupational hygiene, chemistry, toxicology, etc., may be an advantage.

For online applications, go to: <https://www.wits.ac.za/applications/portal/index>

Applications open 1 March 2020 to 30 September 2020 for 2021 intake.

Your application must be accompanied by the following documents:

- Written motivation by the applicant detailing reason for applying for the degree and how the program fits with their overall career goals. **Motivation for application link**
- Comprehensive Curriculum Vitae including a description of relevant research and work experience
- Two referee reports. **MSc Med Exposure Science Referee report link**
- Certified copies of prior qualification(s).
- Original transcripts of qualifications
- Foreign Qualifications:
 - Evaluation from SAQA for applicants who graduated from non- South African universities.
 - English competency certificate or evidence of prior undergraduate training in English.

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