



Course code: 112079
NQF Level 08
120 credits
HPCSA (CPD) accredited

Programme content

You must complete all five modules listed below.

- Introduction to Toxicology
- Poisoning Management and Prevention
- Poisoning with Non-drug Chemicals
- Poisoning with Pharmaceuticals
- Poisoning with Biological Toxins

Programme Coordinator & Chair: Ms Carine Marks
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Hybrid Learning Link: <https://hybridlearning.sun.ac.za/pgdiptox/>

Application Link: <https://www.sun.ac.za/english/pgstudies>

Information and Syllabus

1. Introduction to the Faculty of Medicine and Health Sciences, Stellenbosch University

1.1. Vision

The Faculty of Medicine and Health Sciences of Stellenbosch University is recognized as an indispensable leader in the field of health sciences in Africa and for the contribution, it makes internationally.

Mission

The Faculty of Medicine and Health Sciences of Stellenbosch University is committed to the goal of optimal health in Southern Africa by:

- Developing within a learning culture independent professionals who can make a worthwhile contribution to the community.
- Contributing to new knowledge in the field of health sciences by means of research relevant to Africa.
- Benefiting the broader community by means of participation and service.

2. Post Graduate Diploma in Medical Toxicology

Medical Toxicology is a field of medicine dedicated to the evaluation and treatment of poisoned and envenoming patients. It is a scientific area with a growing demand in academia as well as the private and public health sector.

There is an increasing interest of medical doctors, pharmacists and other healthcare providers to gain more knowledge in this field. This programme in toxicology would therefore cater for a training need for the country as a whole and for Africa in general. Currently there is a shortage of trained staff with knowledge of poisonings, especially of poisoning with chemicals that is unique to the African continent.

The proposed programme will provide an essential step in the training of scientists in Medical Toxicology and provide them with a higher academic qualification. Candidates completing the course will have the skills to assist in the diagnoses and management of patients exposed to poisonous chemicals. They will be able to work in medical facilities where they will be able to advise other health care professionals on the management of poisoned patients.

Given the critical shortage of toxicology experts, the health services of South Africa will tremendously benefit from the programme.

The course is in consistence with the HEQC's Programme Accreditation criteria and has been approved and re-accredited at all required levels within the university.

The programme will be presented in English.

2.1. Admission and selection requirements

- A bachelor's degree (e.g., MBChB, BPharm or BNurs) or another relevant qualification on at least NQF level 7, as approved by the Faculty of Medicine and Health Sciences, Stellenbosch University.
- If you are an international student who did not use English as medium of instruction for your undergraduate studies, you may be required to provide evidence of your oral and academic writing proficiency in English.

The program committee selects students based on their academic (achievements), motivation from employees and might include a short interview. There are no fixed number of students that are selected as it is subject to the teaching capacity.

2.2. Programme structure and contents

The programme embraces a period of 18 months designed to equip the trainee to work in the field of medical toxicology. After 18 months, all assessments should be completed, and the student will graduate at the next graduation ceremony.

2.2.1. Description of the program

Faculty: Health Sciences

Department: Medicine

Division: Clinical Pharmacology

Type of program: Theoretical; Blended Learning (mostly on-line)

NQF level: 8

Qualification type: PG Diploma

Qualification specification: Toxicology

2.2.2. Aims of the program

On completion of this programme successful candidates will be more proficient in the following:

- The early diagnosis and management of the poisoned patient.
- Identifying toxicology problems and solving these problems through taught methods.
- Understanding the importance of continued self-study and of staying abreast of new developments in the field of Medical Toxicology.
- Personal self-development with emphasis on insight, responsibility, accountability, continued learning, self-criticism, acceptance of criticism from others, and the ability to work independently at a high level.
- Critically review and interpret the literature relating to publications in toxicology.
- Understand the set-up, importance, and management of Poison Information Centres nationally and internationally.
- The ability to work in a team and to add value to the larger group through constructive collaboration and cooperation.
- Development of a holistic approach to problem solving within the context of respect and sensitivity for other people, the community, and the environment.
- Understanding the importance of toxicology in general, particularly to the community through the communication of knowledge and the transfer of relevant information.

Establish a smaller poison centre unit in his/her environment that will network with the National Poisons Centre of South Africa.

2.2.3. Duration of program

The programme extends over **18 months** and consists of two separate weeks of synchronous teaching. During 1st year this week will be online, and during 2nd year it will be a face to face meeting at Tygerberg Campus. The rest of the course will be asynchronous online.

During the 18 months it is expected from the student to complete a 24-hour practical work placement.

Duration of the placement: 24 hours (8 x 4hr shifts)

Location of the placement: Poisons Centre or Trauma Unit

2.2.4 Estimated cost of the course (prices as in 2022)

PARTICULARS OF CHARGES - STUDY FEES:		
NAME OF COURSE / SUBJECT	CODE	TUITION FEES
Introduction to Toxicology	14182775	5380.00
Poison Management and Prevention	14183775	5380.00
Poison with Non-drug Chemicals	14186775	5380.00
Poisoning with Biological Tox	14187775	5380.00
Poisoning with Pharmaceuticals	14185775	5380.00
		R26900.00

2.2.4. Course Assessment - Module details

The module outline and contribution of the different components contributing to the final performance mark can be summarized as follows:

Completion of 2 years as a registered student for the PG Diploma in Toxicology. The final assessment will take place 18 months after enrollment and graduation at the end of the second year.

Each module will receive a mark out of 100. The final mark of the student will be calculated as follows:

1. Online quizzes = 13 % of final mark (taking place throughout the course)
2. Written assignments = 12% of final mark (taking place throughout the course)
3. Reflection on e-portfolio = 15 % of final mark (taking place throughout the course)
4. Written examination = 36 % of final mark (3hr examination on campus in February 2024)
5. Oral examination = 24 % of final mark (90 minutes on-line examination in June 2024)

The pass mark will be 50% for each module.

A mark of 75% will be required to pass with distinction. Students need to repeat only those modules where they have been unsuccessful.

What is communicated to students:

There will be a module framework for each module. This module framework will be loaded onto the online SUNLearn platform. This module framework will indicate to the students the following:

- Module name, credit value, NQF level
- Outcomes
- Division of work
- Prescribed material
- Types of assessment
- How the mark for the module is calculated
- Any other relevant information that the student will need.

Module 1: Introduction to Toxicology 14182775

Contact time: 1 week in January 2022:

Contact sessions via MS TEAMS platform.

Thereafter - 3 hrs / week contact session x 12 weeks (36hr) (virtual)

Compulsory - Theoretical - Credits: 24

Assessment:

Module 1 calculation of marks:

Type of assessment	Number of assessments	Total module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	20%
Written assignment	2 written tasks and each carries equal weight	20%
Reflection in e-portfolio	12 reflections, 1 per week	10%
Written examination	MCQ and short questions	50%

Module 2: Poisoning management and prevention 14183-775

Contact time: week January: contact sessions via MS TEAMS platform.

thereafter - 3 hrs / week contact session x 12 weeks (36hr) (virtual)

Compulsory – Theoretical - Credits: 24

Assessment:

Module 2 calculation of marks:

Type of assessment	Number of assessments	Total module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	20%
Written assignment	2 written tasks and each carries equal weight	20%
Reflection in e-portfolio	12 reflections, 1 per week	10%
Written examination	MCQ and short questions	50%

Module 3: Poisoning with Pharmaceuticals 14185775

Contact time: week January: contact sessions via MS TEAMS platform

Thereafter - 3 hrs / week contact session x 12 weeks (36hr) virtual plus: practical workplace experience -16 hrs at a trauma unit or similar entity.

Compulsory - Theoretical / practical - Credits: 24

Assessment:

Module 3 calculation of marks

Type of assessment	Number of assessments	Total module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	20%
Written assignment	2 written tasks	20%
Reflection in e-portfolio	1 reflection for the complete module	10%
Written examination	MCQ and short questions	50%

Module 4: Poisoning with Non-drug Chemicals 14186775

Contact time: week January: contact sessions via MS TEAMS platform

Thereafter - 3 hrs / week contact session x 12 weeks (36hr) virtual practical workplace experience 8 hrs at a trauma unit or similar entity

Compulsory - Theoretical - practical - Credits: 24

Assessment:

Module 4 calculation of marks

Type of assessment	Number of assessments	Total module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	20%
Written assignment	2 written tasks	20%
Reflection in e-portfolio	1 reflection for the complete module	10%
Written examination	MCQ and short questions	50%

Module 5: Poisoning with Biological Toxins 14187775

Contact time: contact sessions in 2nd year (2023): face to face at Tygerberg campus

Thereafter – 3 hrs / week contact session x 12 weeks (36hr) virtual practical workplace experience 8 hrs at a trauma unit or similar entity

Compulsory - Theoretical / practical - Credits: 24

Assessment:

Module 5 calculation of marks

Type of assessment	Number of assessments	Total module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	20%
Written assignment	1 written task	10%
Reflection/ assignment in e-portfolio	1 reflection for the complete module	30%
Oral Examination		40%

3. Division of Clinical Pharmacology, Faculty of Medicine and Health Sciences, Stellenbosch University

3.1. Division of Clinical Pharmacology - overview

The Division of Clinical Pharmacology is housed on the 7th floor of the Clinical Building at the Faculty of Medicine and Health Sciences, Tygerberg Campus, Stellenbosch University. Professor Eric Decloedt holds the position of Head of Department (HoD).

See the **Division's web page** for more detail:

<http://www.sun.ac.za/english/faculty/healthsciences/Clinical%20Pharmacology/Pages/default.aspx>

3.2. Tygerberg Poison Information Centre (TPIC)

The TPIC is part of the Poison Information Helpline for the Western Cape that provides an 24 hour toxicology consultation service to health care professionals (at all levels), industry, and the lay public and is under the directorship of Mrs Carine Marks.

They provide expert advice on the following:

- The presentation and management of medicine-related overdoses and drugs of abuse
- General information on poisons
- General information on biological toxins, with special reference to poisonous and venomous creatures, poisonous plants, and micro-organisms

3.3. Postgraduate Office

Postgraduate office Tygerberg handles all postgraduate activities. They offer:

- academic information,
- arrange interaction between students,
- provide students with skills development opportunities (capacity building),
- provide advice related to research-related matters,
- provide information regarding bursaries and funding opportunities,
- assist new postgraduate students,
- promote interaction between divisions.

They provide a comprehensive one-stop service in terms of support and guidance to existing as well as prospective postgraduate students with specific focus on efficient administration, social wellbeing, skills development, and attention to all related academic matters in order to ensure the success of students.

3.4.

3.5. SUNLearn

Course material, quizzes and other relevant information will be made available on SUNLearn which is the university e-learning platform. Login details will be obtained upon registration. Your student number will become your email address of which all university-related matters will be communicated to you. E.g., 1234567@sun.ac.za.

International Office Enquiries: Contact Ms Shanlynn Timm stimm@sun.ac.za

Student Fees: Contact Ms Lesanne Matthee for all fee-related enquiries lm@sun.ac.za

PROGRAMME

(Scheduled timeslots and facilitators may be changed due to unforeseen circumstances)

Week	Date	Item/Module	Facilitator
1	23 – 28 Jan 2023	Lectures and workshop via MS TEAMS platform	Ms CJ Marks Ms A Du Plessis
2	29 Jan – 4 Feb 2023	Environmental Toxicology	Dr G Verdoorn
3	5 - 11 Feb 2023	Environmental Toxicology	Dr G Verdoorn
4	12 - 18 Feb 2023	Risk Assessment	Prof M Gulumian
5	19 - 25 Feb 2023	Occupational and Nano Toxicology	Prof M Gulumian
6	26 Feb – 4 Mar 2023	Analytical Toxicology	Dr T Kellerman
7	5 - 11 Mar 2023	Forensic Toxicology	Ms J Mader
8	12 – 18 Mar 2023	Mechanism and pathology of drug toxicity	Prof W Cordier
9	19 – 25 Mar 2023	Dose response	Prof W Cordier
10	26 Mar – 1 Apr 2023	Basic principles of Pharmacodynamics and Pharmacokinetics	Mrs S Dames
	2 - 8 April	HOLIDAY	
11	9 - 15 Apr 2023	Drug-drug Interactions	Dr R Van Rensburg
12	16 – 22 Apr 2023	Poison Information Centres and International Programme on Chemical Safety (IPCS)	Mrs C Marks
13	23 - 29 Apr 2023	ABCs Resuscitation	Dr Laverne Phillips
14	30 Apr – 6 May 2023	Initial management and enhanced elimination	Dr Laverne Phillips
15	7 – 13 May 2023	Symptomatic and supportive care	Dr Laverne Phillips
16	14 – 20 May 2023	Toxidromes	Ms J Jones
17	21 - 27 May 2023	Antidotes	Ms A Du Plessis
18	28 May – 3 Jun 2023	Drugs of Abuse	Ms C Marks
19	4 – 10 Jun 2023	Toxicology laboratory and Drug screening	Mrs A van der Merwe
20	11 - 17 Jun 2022	Drug use in Pregnancy / Lactation and the Neonate	Mrs S Dames

21	18 – 24 Jun 2023	Childhood poisoning	Dr K Balme
22	25 Jun – 1 Jul 2023	Psychiatric evaluation for the poisoned patient	Mr Colin Mitchell
23	2 – 8 Jul 2023	The unknown poison including cyanide and arsenic poisoning	Dr G Muller
24	9 - 15 Jul 2023	Non-toxic exposures and multiple chemical sensitivity syndrome	Ms A Du Plessis
	<i>16 – 29 July 2023</i>	<i>HOLIDAY</i>	
25	30 Jul – 5 Aug 2023	Complementary and alternative medicine	Mr G Voigt
26	6 - 12 Aug 2023	Paracetamol	Dr Pillay-Fuentes Lorente
27	13 – 19 Aug 2023	Non-steroidal anti-inflammatory drugs and DMARDS	Ms. C Marks
28	20 - 26 Aug 2023	Antidepressants and Lithium	Dr C Banda
29	27 Aug – 2 Sep 2023	Neuroleptics	Dr Pillay-Fuentes Lorente
30	3 - 9 Sep 2023	Sedative hypnotics	Dr C Stephen
31	10 - 16 Sep 2023	Anticonvulsants	Dr H Gunter
32	17 - 23 Sep 2023	Antihistamine, sympathomimetic (cold and flu meds)	Mrs C Marks
33	24 - 30 Sep 2023	Theophylline / Bronchodilators	Mrs C Marks
34	1 - 7 Oct 2023	Cardiovascular drugs	Dr C Banda
35	8 - 14 Oct 2023	Antidiabetic drugs	Mr G Voigt
36	15 - 21 Oct 2023	Antimicrobials (INH, ARV's)	Dr Pillay-Fuentes Lorente
37	22 - 28 Oct 2023	Irritants and Corrosives	Dr K Balme
38	29 Oct – 4 Nov 2023	Chemicals that cause Methemoglobinemia (Naphthalene, Nitrites and Nitrates etc.)	Dr Pillay-Fuentes Lorente
39	5 - 11 Nov 2023	Toxic Alcohols	Dr C Banda
40	12 – 18 Nov 2023	Hydrocarbons	Dr K Balme
41	19 - 25 Nov 2023	Iron	Dr R van Rensburg
42	26 Nov – 2 Dec 2023	Carbon Monoxide	Ms C Marks

43	3- 9 Dec 2023	Cholinesterase inhibitors	Dr R Van Rensburg
44	10 - 16 Dec 2023	Herbicides	Ms A Du Plessis
	17 Dec – 6 Jan 2024	HOLIDAY	
45	7 – 13 Jan 2024	Rodenticides	Dr C Stephen
46	14 – 20 Jan 2024	Amitraz, pyrethrins and pyrethroids.	Dr J Veale
47	21 – 27 Jan 2024	Insect repellents (DEET) and attractants (AnTrap)	Ms A Du Plessis
48	28 Jan – 3 Feb 2024	Lead and mercury poisoning	Dr C Stephen
	4 – 10 February	Revision week	
49	12 Feb 2024	EXAMINATION	Ms C Marks Ms A du Plessis
49	12 – 17 Feb 2024	Traditional face to face lectures	Ms C Marks Ms A du Plessis
	18 – 24 February	RECUPERATION	
50	25 Feb – 2 Mar 2024	Scorpions	Ms C Marks
51	3 – 9 Mar 2024	Cytotoxic snakes and hemotoxic snakes	Ms C Marks
52	10 – 16 Mar 2024	Neurotoxic snakes and the Berg Adder	Ms C Marks
53	17 – 23 Mar 2024	Neurotoxic spiders	Ms A Du Plessis
	24 March – 6 April	HOLIDAY	
54	7 - 13 Apr 2024	Cytotoxic spiders	Ms A Du Plessis
55	14 - 20 Apr 2024	Marine envenomation	Ms C Marks
56	21 - 27 Apr 2024	Marine poisoning	Ms C Marks
57	28 Apr 4 May 2024	Plant poisoning	Mrs A Du Plessis
58	5 - 11 May 2024	Mushroom Poisoning	Mr G Voigt
59	12 - 18 May 2024	Insects and Bee stings	Ms A Du Plessis
60	19 - 25 May 2024	Rabies and tick bite	Dr E Mondleki
		Revision period	Ms C Marks
	2 June 2024	ORALS	