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Postgraduate Diploma in Medical Toxicology

Course code: 112079

NQF Level 08

120 credits

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For Registration go to the following link :

<https://web-apps.sun.ac.za/eAansoek2/alg.jsp?TI=1>

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 recognised as an indispensable leader in the field of health sciences in Africa and for the contribution, it makes internationally.

saam vorentoe • masiye phambili • forward together



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1.2. 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. Postgraduate 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 also 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. Name of program:

Postgraduate Diploma in Medical Toxicology - Qualification ID 112079

2.2. Admission and selection requirements

Entry criteria: A qualification in a healthcare profession, from an accredited institution at a minimum NQF 7 level, as approved by the Faculty of Medicine and Health Sciences, Stellenbosch University.

If you are an international candidate, you must provide proof of the equivalence of qualifications that you obtained at non-South African institutions. This requires submission of a SAQA (South African Qualifications Authority) certificate.

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

2.3. 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.

2.3.1. 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

2.3.2. Aims of the program

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

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, in particular, 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 .

2.3.3. Duration of program

The programme extends over 18 months and consists of two separate weeks of traditional face to face teaching (at Tygerberg Campus) and the rest via electronic and online media.

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

2.3.4. Course code and credits

Course code: 112079

Course credits: 120

2.3.5. Module details

Name of module 1: **Introduction to Toxicology 14182775**

Department / Division offering module: Medicine / Clinical Pharmacology

Time period: yearly

Contact time: 3 full days of contact sessions (24 hr) (face to face)

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

Language: English

Compulsory

Theoretical

Credits: 24

Assessment:

Module 1 calculation of marks:

Type of assessment	Number of assessments	Total contribution to 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%

Name of module 2: **Poisoning management and prevention**

Department / Division offering module: Medicine / Clinical Pharmacology

Time period: yearly

Contact time: 3 full days of contact sessions (24 hr) (face to face)

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

Language: English

Compulsory

Theoretical

Credits: 24

Assessment:

Module 2 calculation of marks:

Type of assessment	Number of assessments	Total contribution to module mark
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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%

Name of module 3: **Poisoning with Pharmaceuticals 14185775**

Department / Division offering module: Medicine / Clinical Pharmacology

Time period: yearly

Contact time: contact sessions (8hr) face to face, thereafter - 3 hrs / week contact session x 12 weeks (36hr) virtual plus:

practical workplace experience -16 hrs at a trauma unit or similar entity.

Language: English

Compulsory

Theoretical / practical

Credits: 24

Assessment:

Module 3 calculation of marks

Type of assessment	Number of assessments	Total contribution to module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	10%
Written assignment	1 written task	10%
Reflection in e-portfolio	12 reflections , 1 per week	10%
Written examination	MCQ and short questions	40%
Oral Examination	On-line case studies , simulation	30%

Name of module 4: **Poisoning with Non-drug Chemicals 14186775**

Department / Division offering module: Medicine / Clinical Pharmacology

Time period: yearly

Contact time: contact sessions in 2nd year = 2days (16hr) face to face thereafter - 3 hrs / week contact session x 12 weeks (36hr) virtual

practical workplace experience 8 hrs at a trauma unit or similar entity

Language: English

Compulsory

Theoretical / practical

Credits: 24

Assessment:

Module 4 calculation of marks

Type of assessment	Number of assessments	Total contribution to module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	10%
Written assignment	1 written task	10%
Reflection in e-portfolio	12 reflections , 1 per week	10%
Written examination	MCQ and short questions	40%
Oral Examination	On-line case studies , simulation	30%

Name of module 5: **Poisoning with Biological Toxins 14187775**

Department / Division offering module: Medicine / Clinical Pharmacology

Time period: yearly

Contact time: contact sessions in 2nd year = 2days (16hr) face to face thereafter - 3 hrs / week contact session x 12 weeks (36hr) virtual practical workplace experience 8 hrs at a trauma unit or similar entity

Language: English

Compulsory

Theoretical / practical

Credits: 24

Assessment:

Module 5 calculation of marks

Type of assessment	Number of assessments	Total contribution to module mark
Online quizzes	Students must complete 12 quizzes and each quiz's point carries equal weight.	20%
Written assignment	1 written tasks	10%
Reflection/ assignment in e-portfolio	12 reflections, 1 per week Reflection on work based placement	30%
Oral Examination		40%

2.3.6. Course assessment

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 = 16 % of final mark (taking place throughout the course)
2. Written assignments = 14% of final mark (taking place throughout the course)
3. Reflection on eportfolio = 14 % of final mark (taking place throughout the course)
4. Written examination = 36 % of final mark (3hr examination on campus in February 2022)
5. Oral examination = 20 % of final mark (90 minutes on-line examination in June 2022)

The pass mark will be 50% and a mark of 75% will be required to pass with distinction. Students need to repeat only those components 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:

- 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.

2.4. Course details

2.4.1. Timelines

Scheduled timeslots and facilitators may be changed subject to unforeseen circumstances.

week	Date	Item/Module	Facilitator
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1	18 January 2021	Report to Clinical Pharmacology Welcome, Registration and Orientation Introduction to Toxicology	Ms C Marks Prof Reuter Ms A Du Plessis Ms C Marks
1	19 – 23 January 2021	Traditional face to face lectures	Ms CJ Marks Ms A Du Plessis TBA
2	24 Jan – 30 January 2021	Analytical Toxicology	Dr Tracy Kellerman
3	31 Jan – 6 February 2021	Risk Assessment	Prof M Gulumian
4	7 – 13 February 2021	Occupational and Nano Toxicology	Prof M Gulumian
5	14-20 February 2021	Environmental Toxicology	Dr G Verdoorn
6	21-27 February 2021	Forensic Toxicology	Prof Dempers
7	28 Feb- 6 March 2021	Basic principles of Pharmacodynamics Pharmacokinetics	Mrs S Dames
8	7 – 13 March 2021	Drug-drug Interactions	Dr R Van Rensburg
9	14- 20 March 2021	Mechanism and pathology of drug toxicity	Dr W Cordier
10	21-27 March 2021	Dose Response	Dr W Cordier
	28 March – 3 April 2021	Holiday	
11	4 – 10 April 2021	ABCs Resuscitation	Prof P Hodgekinson
12	11- 17 April 2021	Initial management and enhanced elimination	Dr N Van Hoving
13	18-24 April 2021	Symptomatic and supportive care	Dr N Van Hoving

14	25 April – 1 May 2021	Toxidromes	Ms C Marks
15	2-8 May 2021	Antidotes	Ms C Wium
16	9-15 May 2021	Poison Information Centres	Mrs C Marks
17	16- 22 May 2021	International Programme on Chemical Safety (IPCS)	Ms C Marks
18	23-29 May 2021	Drugs of Abuse	Ms C Marks
19	30 May 5 June 2021	Toxicology laboratory and Drug screening	Mr H van der Merwe Mr J De Bruin
20	6 – 12 June 2021	Drug use in Pregnancy / Lactation and the Neonate	Ms C Marks
21	13-19 June 2021	Childhood poisoning	Dr K Balme
22	20-28 June 2019	Psychiatric evaluation for the poisoned patient	Prof L Koen
23	27 June – 3 July 2021	The unknown poison including cyanide and arsenic poisoning	Dr G Muller
24	4-10 July 2021	Non-toxic exposures and multiple chemical sensitivity syndrome	Ms A Du Plessis
	11 – 17 July 2021	Holiday	
25	18-24 July 2021	Complementary and alternative medicine	Ms C Marks
26	25-31 July 2021	Paracetamol	Dr V Pillay
27	1-7 August 2021	Non-steroidal anti-inflammatory drugs and DMARDS	Ms. C Marks
28	8-14 August 2021	Antidepressants and Lithium	Dr SA'Ad Lahri
29	15-21 August 2021	Neuroleptics	Dr V Pillay
30	22-28 August 2021	Sedative hypnotics	Dr C Stephen

31	29 Aug- 4 September 2021	Anticonvulsants	Dr H Gunter
32	5-11 September 2021	Antihistamine, sympathomimetic (cold and flu meds)	Mrs C Marks
33	12-18 September 2021	Theophylline / Bronchodilators	Ms S Dames
34	19-25 September 2021	Cardiovascular drugs	Prof E Decloedt
35	26 September – 2 October 2021	Antidiabetic drugs	Prof H Reuter
36	3-9 October 2021	Antimicrobials (INH , ARV's)	Dr V Pillay
37	10-16 October 2021	Irritants and Corrosives	Dr K Balme
38	17-23 October 2021	Chemicals that cause Methemoglobinemia (Naphthalene, Nitrites and Nitrates etc.)	Dr A Abulfathi
39	24-30 October 2021	Toxic Alcohols	Dr A Abulphati
40	31 Oct -6 November 2021	Hydrocarbons	Dr K Balme
41	7 13 November 2021	Iron	Dr R van Rensburg
42	14-20 November 2021	Carbon Monoxide	Ms C Marks
43	21-27 November 2021	Cholinesterase inhibitors	Dr R Van Rensburg
44	28 Nov – 4 December 2021	Herbicides	Ms A Du Plessis
	5 Dec – 15 January 2022	Holiday	
45	16 – 22 January 2022	Rodenticides	Dr C Stephen
46	23-29 January 2022	Amitraz, pyrethrins and pyrethroids.	Dr J Veale

47	30 Jan – 5 February 2022	Insect repellents (DEET) and attractants (Antrap)	Ms A Du Plessis
48	6 Feb- 12 February 2022	Lead and mercury poisoning	Dr C Stephen
	13-20 February 2022	Revision week	
49	Monday 21 February 2022	Examination	Ms C Marks Ms A du Plessis
49	22- 26 February 2022	Traditional face to face lectures	Ms C Marks Ms A Du Plessis TBA
50	27 Feb – 5 March 2022	Scorpions	Dr G Muller
51	6-12 March 2022	Cytotoxic snakes and hemotoxic snakes	Dr G Muller
52	13-19 March 2022	Neurotoxic snakes and the Berg Adder	Dr G Muller
	20-26 March 2022	Holiday	
53	27 March – 2 April 2022	Neurotoxic spiders	Ms A Du Plessis
54	3 – 9 April 2022	Cytotoxic spiders	Ms A Du Plessis
55	10 – 16 April 2022	Marine envenomation	Ms C Marks
56	17-23 April 2022	Marine poisoning	Ms C Marks
57	24-30 April 2022	Plant poisoning	Ms C Wium
58	1-7 May 2022	Mushroom Poisoning	Mr H Van der Merwe New Pharmacist
59	8-14 May 2022	Insects and Bee stings	Ms A Du Plessis
60	15-21 May 2022	Rabies and tick bite	Dr J Taljard

	22 May – 6 June 2022	Revision period All assignments must be completed	Ms C Marks
	7-17 June 2022	Orals	



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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 Helmuth Reuter holds the position of Head of Department, and Associate Professor Eric Decloedt assists in the position of lead Clinical Pharmacology consultant. 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. Analytical Pharmacology Laboratory

The Division of Clinical Pharmacology has laboratory research facilities overseen by Dr Tracy Kellermann. These facilities include a Therapeutic Drug Monitoring laboratory, a Zebrafish Research Laboratory, and an HPLC and LC-MS Laboratory. The LC-MS Laboratory is operated by the Central Analytical Facility (CAF) (<http://www.sun.ac.za/english/faculty/science/CAF>).

The activities of the Division of Pharmacology are supported by a routine dedicated therapeutic drug monitoring (TDM) laboratory. This service is accessible to all the hospitals, health care facilities and agencies (e.g. private pathology services, rehabilitation centers, etc.) in the Cape Peninsula.

3.4. Facilities and equipment for postgraduate student training

Facilities in the division include:

- Seminar room: All divisional meetings, seminars, tutorials, etc., are held in the seminar room unless otherwise indicated.
- Postgraduate students are accommodated in three different rooms with Wi-Fi
- Printing facilities are available in the Division through a SafeCom printer.
- A tearoom is available to all Pharmacology staff and students.

4. Useful links and facilities

<http://www.sun.ac.za/english/faculty/healthsciences/about-us/our-campus>

4.1. 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.

<https://www0.sun.ac.za/pgstudies/>

4.2. Computer user's area (GERGA)

The Faculty of Health Sciences ensures that its students and staff have access to the most recent and relevant information technology. The Computer Users Area on the Tygerberg Campus is situated on the 3rd floor of the Teaching Block.

4.3. Health Sciences Library

The Health Sciences Library is one of the six branch and satellite libraries of the US Library Service. It serves the Faculty of Health Sciences and is situated on the 3rd floor of the Clinical building at the Tygerberg campus.

4.4. SUNLearn

Course material, quizzes and other relevant information will be made available on SUNLearn. Login details will be obtained upon registration.

4.5. Accommodation

Unfortunately due to a shortage of accommodation for undergraduates, Post graduate students cannot apply online for residence on Tygerberg Campus, and placements on campus for post graduate students are rare. For accommodation requirements, contact the following:

- Mr Leon Venter regarding the private accommodation in the Annex opposite our campus: leonvnr@gmail.com
- Contact Andre Krige regarding "The Digs" accommodation also opposite our campus: info@thedigs.co.za or visit www.digsconnect.com

Alternatively, consider finding accommodation in the following areas within proximity to Tygerberg campus as listed in order of relative safety:

- Plattekloof
- Durbanville
- Brackenfell

- Boston
- Parow
- Goodwood
- Bellville

The first three suburbs are the regarded as the safest (6-15km away from Tygerberg campus). If you have your own personal transport, these areas are highly recommended. The last four options are the most practical if you do not have personal transport as they are close to many forms of public transport. The last four suburbs are also relatively safe depending on which area zone you choose.

4.6 Estimated cost of course (prices as in 2020)

* Tuition fee (14182775) Introduction to toxicology	R	5,518.00
* Tuition fee (14183775) Poison managem and prevention	R	5,518.00
* Tuition fee (14185775) Poisoning with pharmaceuticals	R	5,518.00
* Tuition fee (14186775) Poison with non-drug chemicals	R	5,518.00
* Tuition fee (14187775) Poisoning with biological tox	R	5,518.00
* Total Study Fees only	R	27,590.00