POSTGRADUATE DIPLOMA IN CHEMISTRY

PGDip (Chemistry) - NQF Level 8 (120 credits)

Qualification code: PDCH21

SAQA ID: 111239, CHE NUMBER: H/H16/E072CAN

Campus where offered: Arcadia Campus

REMARKS

a. *Admission requirement(s):*
An Advanced Diploma in Analytical Chemistry, **or** a Baccalaureus Technologiae: Chemistry, **or** any equivalent qualification at NQF Level 7 with 120 credits.

Holders of any other equivalent South African or international qualification may also be considered, see Chapter 1 of Students' Rules and Regulations.

b. *Selection criteria:*
Admission is subject to selection. Prospective students will be evaluated based on the marks obtained in the previous qualification and/or work experience.

Acceptance is subject to available capacity according to the Student Enrolment Plan (SEP). Applicants will be informed of their status per official letter from the Office of the Registrar, alternatively, they can check their application status on the TUT website, www.tut.ac.za.

c. *Recognition of Prior Learning (RPL), equivalence and status:*
See Chapter 30 of Students' Rules and Regulations.

d. *Intake for the qualification:*
January and July (July intake is only for the 2021 academic year).

e. *Presentation:*
Day classes or block mode classes offered over a period of one year. Block mode classes are offered as determined by the Head of the Department.

f. *Minimum duration:*
A minimum of one or two years (depending on the programme offering).

g. *Re-registration:*
A student may re-register for the module Research Project only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete the project only, and not to redo it, should they fail the module.

h. *Exclusion and readmission:*
See Chapter 2 of Students' Rules and Regulations.

CURRICULUM

ATTENDANCE

CODE	MODULE	NQF-L	CREDIT
RCH108G	Research Project	(8)	(30)
RCH118R	Research Project (re-registration) (first-semester module, see paragraph g)	(8)	(0)
FIRST SEMESTER			
CTI118G	Catalysis	(8)	(15)
PHC118G	Physical Chemistry	(8)	(15)
SCY118G	Spectroscopy	(8)	(15)
SSI118G	Separation Science	(8)	(15)
SECOND SEMESTER			
MTS118G	Material Science	(8)	(15)
SCH118G	Synthetic Chemistry	(8)	(15)
TOTAL CREDITS FOR THE QUALIFICATION:			**120**

MODULE INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular module. At time of publication, the syllabus content was defined as follows:

C

CATALYSIS (CTI118G) **1 X 3-HOUR PAPER**
(Module custodian: Department of Chemistry)
Fundamentals of catalysis. Biocatalysis. Homogeneous catalysis. Heterogeneous catalysis. Catalysts deactivation and regeneration. (Total notional time: 150 hours)

M

MATERIAL SCIENCE (MTS118G) **1 X 3-HOUR PAPER**
(Module custodian: Department of Chemistry)
Fundamental concepts and structure of materials. Structure of crystalline and amorphous solids. Imperfections, failure, dislocations and strengthening mechanisms in materials. Phase transformation in metals and thermal processing of metal alloys. Ceramics - structure, properties, processing & applications. Polymer structures and composites (Total notional time: 150 hours)

P

PHYSICAL CHEMISTRY (PHC118G) **1 X 3-HOUR PAPER**
(Module custodian: Department of Chemistry)
Statistical thermodynamics. Kinetics of complex reactions. Crystallography. (Total notional time: 150 hours)

R

RESEARCH PROJECT (RCH108G, RCH118R) **PROJECT ASSESSMENT**
(Module custodian: Department of Chemistry)
Preparation of research proposal; presentation of research proposal; experimental methods; oral research presentations and preparation of research project report. (Total notional time: 300 hours)

S

SEPARATION SCIENCE (SSI118G) **1 X 3-HOUR PAPER**

(Module custodian: Department of Chemistry)

Voltammetry. Hyphenated gas chromatography methods. Liquid chromatography. Extraction. Multivariate analysis. (Total notional time: 150 hours)

SPECTROSCOPY (SCY118G) **1 X 3-HOUR PAPER**

(Module custodian: Department of Chemistry)

Mass spectrometry. Inductively coupled plasma mass spectrometry. X-ray diffraction spectrometry. Magnetic resonance spectroscopy. (Total notional time: 150 hours)

SYNTHETIC CHEMISTRY (SCH118G) **1 X 3-HOUR PAPER**

(Module custodian: Department of Chemistry)

Chiral organic synthesis. Organometallic chemistry. Natural products. Medicinal chemistry. Coordination Chemistry. (Total notional time: 150 hours)