

POSTGRADUATE DIPLOMA IN COMPUTER SCIENCE

PGDip (Computer Science) - NQF Level 8 (120 credits)

Qualification code: PDRS21

SAQA ID: 111271, CHE NUMBER: H/H16/E186CAN

Campus where offered:

Soshanguve South Campus

REMARKS

a. Admission requirement(s):

An Advanced Diploma in Computer Science, **or** a Baccalaureus Technologiae: Information Technology in the field of Software Development or Technical Applications or Web and Application Development, **or** a Bachelor's degree in Computer Science, **or** an equivalent qualification at NQF Level 7 with a minimum of 120 credits. Preference will be given to candidates who obtained an average of 60% in the previous qualification.

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 based on a personal interview with a departmental selection panel. Candidates are evaluated based on the previous qualification obtained 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 only.

e. Presentation:

Day classes offered on Saturdays over a period of two years. Online classes are also offered in some instances, but assessments are on campus.

f. Duration:

A minimum of one or two years (depending on the programme offering).

g. Exclusion and readmission:

See Chapter 2 of Students' Rules and Regulations.

h. 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.

i. Personal equipment:

Access to a laptop or desktop computer is essential to participate in multimodal learning experiences as well as to complete assignments and projects. NSFAS students receive an allowance to acquire a laptop, and using this allowance for this purpose is critical for academic success. Students are encouraged to consult the faculty website where the minimum requirements for specific programmes are published.



CURRICULUM

ATTENDANCE (FIRST OR SECOND YEAR)

Modules are offered as determined by the Head of the Department.S

| CODE | MODULE | NQF-L | CREDIT | PREREQUISITE MODULE(S) |
|---------|--|-------|--------|------------------------|
| RRS108G | Research Project | (8) | (30) | Research Methodologies |
| RRS118R | Research Project (re-registration) (first- or second-semester module, see paragraph h) | (8) | (0) | |

FIRST SEMESTER

| | | | | |
|---------|---------------------------|-----|------|--|
| MSI118G | Modelling and Simulations | (8) | (15) | |
| RMR118G | Research Methodologies | (8) | (15) | |

SECOND SEMESTER

| | | | | |
|---------|--|-----|------|--|
| DSC118G | Data Science and Big Data Analytics | (8) | (15) | |
|---------|--|-----|------|--|

plus three of the following electives:

First semester

| | | | | |
|---------|--------------------------|-----|------|--|
| NTT118G | New Technological Trends | (8) | (15) | |
| OEN118G | Ontology Engineering | (8) | (15) | |

Second semester

| | | | | |
|---------|-----------------------------|-----|------|--|
| ACX118G | Algorithms and Complexity | (8) | (15) | |
| FRD118G | Formal Aspects of Computing | (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:

A

ALGORITHMS AND COMPLEXITY (ACX118G)

CONTINUOUS ASSESSMENT

(Module custodian: Department of Computer Science)

The purpose of this module is to prepare students to acquire the central concepts and skills required to design and implement algorithms and conduct their computational complexity analysis for performance efficiency of implementation. (Total notional time: 150 hours)

D

DATA SCIENCE AND BIG DATA ANALYTICS (DSC118G)

CONTINUOUS ASSESSMENT

(Module custodian: Department of Computer Science)

The focus of this module is to train students in the intersection of subjects ranging from statistics, information and computer science, system design and social sciences. (Total notional time: 150 hours)



F**FORMAL ASPECTS OF COMPUTING (FRD118G)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Computer Science)*

This module prepares the student to use formal methods as a tool in the development of a set of modelling notations that allow software architects to precisely specify the structure, behaviour and properties of the critical aspects of a system. (Total notional time: 150 hours)

M**MODELLING AND SIMULATION (MSI118G)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Computer Science)*

This module will improve the student's understanding of how models and simulations of real or theoretical systems work, how they are designed and implemented subject to inherent constraints and based on the assumptions of reality involved, what limitations they have, and what can be done to improve them. (Total notional time: 150 hours)

N**NEW TECHNOLOGICAL TRENDS (NTT118G)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Computer Science)*

The purpose of this module is to expose students to the trends in the evolution and continuing developments in the field of Computing and its associated academic disciplines, including Computer Science, Information Systems, Information Technology and Multimedia Computing. (Total notional time: 150 hours)

O**ONTOLOGY ENGINEERING (OEN118G)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Computer Science)*

The focus of this module is to lay the foundation for the design and implementation ontology solutions on different platforms, including the web and mobile devices. (Total notional time: 150 hours)

R**RESEARCH METHODOLOGIES (RMR118G)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Computer Science)*

The focus of this module is to introduce students to research methods, planning, management, ethics, legal and professional issues and also how write scientific research articles and theses/dissertations. (Total notional time: 150 hours)

RESEARCH PROJECT (RRS108G, RRS118R)**PROJECT ASSESSMENT***(Module custodian: Department of Computer Science)*

The focus of this module is to enable students to apply and implement the research principles acquired in the Research Methodologies module on a proposed research topic. (Total notional time: 300 hours)



