

ADVANCED DIPLOMA IN COMPUTER SCIENCE

Qualification code: ADRS20 - NQF Level 7 (120 credits)

SAQA ID: 115935, CHE NUMBER: H/H16/E167CAN

Campus where offered: Soshanguve South, eMalahleni and Polokwane campuses

REMARKS

- a. *Admission requirement(s):*
A National Diploma: Information Technology in the field of Technical Applications, or Software Development, or Web Application Development, **or** a Diploma in Computer Science, **or** a relevant bachelor's degree, **or** an equivalent qualification in Computer Science or Software Engineering at NQF Level 6 with a minimum of 360 credits. Prospective students are required to have knowledge of advanced JAVA programming.
- 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 only.
- e. *Presentation:*
Day classes offered on Saturdays over a period of two years.
- 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 Integrated Software 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

FIRST YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
FIRST SEMESTER				
DTD117V	Data Structures and Algorithms	(7)	(15)	
HMD117V	Human Computer Interaction	(7)	(15)	
SFG117V	Software Engineering	(7)	(15)	



SECOND SEMESTER

DSD117V	Distributed Programming	(7)	(15)
IDA117V	Introduction to Data Science	(7)	(15)
TCR117V	Theoretical Computer Science	(7)	(15)

TOTAL CREDITS FOR THE FIRST YEAR: **90**

SECOND YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
ISJ107V	Integrated Software Project	(7)	(15)	
ISJ117R	Integrated Software Project (re-registration) (first- or second semester module, see Paragraph g)	(7)	(0)	

FIRST SEMESTER

SEC117V	Service-Oriented Computing	(7)	(15)	Distributed Programming
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TOTAL CREDITS FOR THE SECOND YEAR: **30**

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:

D

DATA STRUCTURES AND ALGORITHMS (DTD117V) 1 X 4-HOUR COMPUTER-BASED *(Module custodian: Department of Computer Science)*

The focus of this module is to introduce candidates to new types of data structures such as trees, heaps, stacks and queues. (Total tuition time: not available)

DISTRIBUTED PROGRAMMING (DSD117V) 1 X 4-HOUR COMPUTER-BASED *(Module custodian: Department of Computer Science)*

The focus of this module is to equip the student with the requisite skills to create automated applications that are distributed over distinct application servers using the JEE framework in the software industry. (Total tuition time: not available)

H

HUMAN COMPUTER INTERACTION (HMD117V) 1 X 4-HOUR COMPUTER-BASED *(Module custodian: Department of Computer Science)*

This module prepares and equips the student with a practical know-how that helps to address the basic tactical and strategic principles of designing systems that interact with human beings. (Total tuition time: not available)

I

INTEGRATED SOFTWARE PROJECT (ISJ107V/ISJ117R) PROJECT ASSESSMENT *(Module custodian: Department of Computer Science)*

This module presents students with the opportunity to apply and extend their practical knowledge acquired in other modules completed prior to this one by completing an industry-related Information Technology software project similar to projects found in a workplace environment, incorporating relevant current technologies. (Total tuition time: not available)



INTRODUCTION TO DATA SCIENCE (IDA117V)**1 X 4-HOUR COMPUTER-BASED****(Module custodian: Department of Computer Science)**

This module prepares the student to manage vast amounts of data using a variety of modern computing technologies and infrastructure from different kinds of sources. (Total tuition time: not available)

S**SERVICE-ORIENTED COMPUTING (SEC117V)****1 X 4-HOUR COMPUTER-BASED****(Module custodian: Department of Computer Science)**

The focus of this module is to equip the student with the requisite skills to create secure web services using the JEE framework to integrate heterogeneous systems in the software industry. (Total tuition time: not available)

SOFTWARE ENGINEERING (SFG117V)**1 X 4-HOUR COMPUTER-BASED****(Module custodian: Department of Computer Science)**

This module is aimed at taking the students through the areas of Software Engineering to equip them with the necessary knowledge, skills, technical abilities and exposure to technologies and methods applicable to the software development environment and activities. (Total tuition time: not available)

T**THEORETICAL COMPUTER SCIENCE (TCR117V)****1 X 4-HOUR PAPER****(Module custodian: Department of Computer Science)**

The main focus of this module is to lay the foundation upon which many of the essential topics of computer science are built, i.e. design of programming languages and compilers, data structures, algorithms, and natural language processing. Understanding of this module will enable reasoning about computability of certain functions. (Total tuition time: not available)

