

## NATIONAL DIPLOMA: INFORMATION TECHNOLOGY

Qualification code: NDIT12 - NQF Level 6

This is not the name of the qualification which will be awarded at the end of a student's studies. The qualification which will be issued will show a field of specialisation and it will be awarded at completion of 3,000 credits.

Campus where offered:	Soshanguve South Campus (day classes offered during the week and on Saturdays) eMalahleni Campus - only for applicants who will slot in with the first year of the National Diploma: Information Technology (Field of specialisation: Software Development) (day classes offered during the week and on Saturdays) Polokwane Campus - only for applicants who will slot in with the first year of the National Diploma: Information Technology (Field of specialisation: Software Development) (day classes offered during the week and on Saturdays)
Last year of new intake:	2019
Teach-out (phase-out) date:	31 December 2021

Students registered for this qualification should complete their studies according to the teach-out date prescribed for the qualification, subject to the stipulations of Regulation 3.1.11 and 3.1.13 in the Students' Rules and Regulations.

Information on phased-out programmes can be obtained from the TUT website, [www.tut.ac.za](http://www.tut.ac.za).

### CURRICULUM

Consult the 2019 Faculty Prospectus for the full contents of the qualification.

#### FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
<b>FIRST SEMESTER</b>			
CFS10AT	Computing Fundamentals IA*	(0,125)	
CGS10AT	Computing Systems IA*	(0,125)	
CMK10AT	Computing Skills IA*	(0,125)	
DSO17AT	Development Software IA	(0,125)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	
<b>SECOND SEMESTER</b>			
CFS10BT	Computing Fundamentals IB*	(0,125)	
CGS10BT	Computing Systems IB*	(0,125)	
CMK10BT	Computing Skills IB*	(0,125)	
DSO17BT	Development Software IB	(0,125)	Development Software IA
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE FIRST YEAR:		<b>1,000</b>	

#### SECOND AND THIRD YEARS

A Student will register for any of the following fields of specialisation (see applicable departments):

- National Diploma: Information Technology: Business Applications
- National Diploma: Information Technology: Communication Networks
- National Diploma: Information Technology: Intelligent Industrial Systems



- National Diploma: Information Technology: Multimedia
- National Diploma: Information Technology: Software Development
- National Diploma: Information Technology: Support Services
- National Diploma: Information Technology: Technical Applications (for repeaters only)
- National Diploma: Information Technology: Web and Application Development (for repeaters only)

TOTAL CREDITS FOR THE SECOND AND THIRD YEARS: **2,000**

TOTAL CREDITS FOR THE QUALIFICATION: **3,000**

## SUBJECT 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 subject. At time of publication, the syllabus content was defined as follows:

### C

#### **COMPUTING FUNDAMENTALS IA (CFS10AT) 1 X 3-HOUR PAPER** *(Subject custodian: End User Computing Unit)*

The student is introduced to the fundamentals of computers and information systems, computer organisation and data processing. (Total tuition time: ± 90 hours)

#### **COMPUTING FUNDAMENTALS IB (CFS10BT) 1 X 3-HOUR PAPER** *(Subject custodian: End User Computing Unit)*

The basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. (Total tuition time: ± 54 hours)

#### **COMPUTING SKILLS IA (CMK10AT) 1 X 3-HOUR PAPER** *(Subject custodian: Department of Informatics)*

This subject aims to equip the student with fundamentals of IT. Soft skills for both the ICT industry and other working environments upon which a successful career can be built. In addition, it will also improve the student's relation and interaction abilities needed within the dynamic ICT industry. The student who successfully completes this subject must identify and implement various thinking skills and learning styles, state the legal and cultural sensitivity issues of IT, identify and explain the variety of soft skills including study skills and strategies, research, presentation as well as communication skills, and identify and explain interpersonal skills in relation to character, time management and team building dynamics and conflict resolution. (Total tuition time: ± 60 hours)

#### **COMPUTING SKILLS IB (CMK10BT) 1 X 3-HOUR PAPER** *(Subject custodian: Department of Informatics)*

The aim of this subject is to extend the skills in CMK10 AT so as to improve on student's relations and interaction capabilities that will be applicable within the dynamic ICT industry and the external environment. The student who successfully completes this subject must describe, distinguish and portray changes in terms of personality profiles, emotional intelligence, self-management, stress management and relationship management; identify and apply the notion of team dynamics; deal with conflict and understand the dynamics behind change; report on effective correspondence; produce meeting documents; conduct meetings; and demonstrate the required communication skills to develop interpersonal business relationships through by means of group work. (Total tuition time: ± 60 hours)

#### **COMPUTING SYSTEMS IA (CGS10AT) 1 X 3-HOUR PAPER** *(Subject custodian: Department of Computer Systems Engineering)*

Introduction to hardware, operating systems, motherboards, processors, memory, hard drives, installing and supporting I/O devices, multimedia devices and mass storage, PC maintenance and troubleshooting strategies, and installing and maintenance of Windows. (Total tuition time: ± 54 hours)

#### **COMPUTING SYSTEMS IB (CGS10BT) 1 X 3-HOUR PAPER** *(Subject custodian: Department of Information Technology)*

Provides the foundation of data communications and local area management, OSI model and/ or TCP/IP protocol stack model, data transmission principles, media, major protocols, topologies, routing methods, introduction to networking principles and network operating system fundamentals. (Total tuition time: ± 54 hours)



**DEVELOPMENT SOFTWARE IA (DSO17AT)****1 X 4-HOUR COMPUTER-BASED****(Subject custodian: Department of Computer Science)**

Aim: To learn to solve problems using the basic programming principles, and then practically apply that knowledge in C++. Objectives: To enable the student to understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming, sequence, selection and iteration control structures and a variety of built-in data types, including strings. The students are exposed to the concept of event-driven programming in a visual programming environment focusing on the development of graphical user interfaces to solve real-life practical programming problems. (Total tuition time: ± 72 hours)

**DEVELOPMENT SOFTWARE IB (DSO17BT)****1 X 4-HOUR COMPUTER-BASED****(Subject custodian: Department of Computer Science)**

Aim: To expand on the already mastered knowledge obtained in Development Software IA. Objectives: To broaden the programming skills base of the student by adding the following topics: write an algorithm and applying it in VB.NET/C++ using functions and sub-procedures, and write an algorithm containing one-dimensional arrays. String manipulation will be continued as well as a brief introduction to text file processing. (Total tuition time: ± 72 hours)

