

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
eMalahleni Campus - only for applicants who will slot in with the first year of the National Diploma: Information Technology (Field of specialisation: Software Development)
Polokwane Campus - only for applicants who will slot in with the first year of the National Diploma: Information Technology (Field of specialisation: Software Development)

Important notification to new applicants:

No new applications will be accepted as from 2020. Students who enrolled for this qualification for the first time in 2017 (or thereafter), should note that it will not be possible to continue with any Baccalaureus Technologiae as from 2020, since it is being replaced by qualifications aligned with the newly-implemented Higher Education Qualification Sub-Framework. Potential students are advised to consult the University's website for any new qualifications which might not be published in this Prospectus.

REMARKS

Please note that students will register for the first year (NDIT12), during which they are introduced to the basic principles of computers and information technology skills.

Important information for the prospective student:

- The admission requirements as indicated below will be the only criteria considered for admission to the National Diploma: Information Technology.
 - Applicants who have already enrolled at another university, university of technology or SAQA-accredited equivalent, and who meet the minimum requirements, may officially apply and having been accepted, subject exemptions may be granted (this is not applicable to subjects from the foundation year). However, any qualification or subjects passed at other institutions do not imply or automatically guarantee admission to the programmes.
 - Applicants who do not meet the minimum requirements, but completed other qualifications or are currently studying at other institutions, may formally apply for recognition of prior learning (RPL) and prepare a portfolio according to the RPL rules and regulations of TUT. The portfolio will be evaluated by the Faculty EXCO and approved by the SCRPL and Senate. This process may take up to six months. RPL is also applicable in the instances where applicants completed other qualifications or, are currently studying at other institutions, qualify for the extended programme (NDITF1), yet would like to be accepted into the mainstream programme (NDIT12).
- a. *Admission requirement(s) and selection criteria:*

• FOR APPLICANTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):

A Senior Certificate or an equivalent qualification with a 50% pass in Mathematics at Standard Grade (SG).

Recommended subject(s):

Computer Science and Physical Science.

Selection criteria:

Initial selection is based on school results. Applicants are assessed according to the following formula:



SYMBOL	HG	SG
A	5	4
B	4	3
C	3	2
D	2	1
E	1	0

Applicants should obtain at least 9 points, as well as at least a D symbol at Standard Grade for Mathematics, in order to be invited for an assessment.

Applicants will be notified to make an appointment with the Departmental secretary for this assessment. This rule applies to all applicants, as well as to applicants who are already registered at other institutions.

- **FOR APPLICANTS WHO OBTAINED A NATIONAL SENIOR CERTIFICATE IN OR AFTER 2008:**

Admission requirement(s):

A National Senior Certificate with a bachelor's degree or a diploma endorsement or an equivalent qualification, with an achievement level of at least 3 for English (home language or first additional language) and 4 for Mathematics.

Applicants with a 3 for Mathematics or at least 5 for Mathematical Literacy will be considered for admission to the extended programme.

Please note:

- Applicants who intend to specialise in the Communication Networks field should have at least 3 for Mathematics and at least 3 for Physical Sciences.
- Applicants who intend to specialise in the Intelligent Industrial Systems field should have at least 3 for Physical Sciences.

Recommended subject(s):

None.

Selection criteria:

To be considered for this qualification, applicants must have an Admission Point Score (APS) of at least **18** (with Mathematics) or at least **20** (with Mathematical Literacy, which is only applicable to the extended programme).

Assessment procedures:

Applicants who meet the minimum requirements will be considered for admission to either the National Diploma or the extended programme.

- Applicants, with a score of at least 4 in Mathematics will be admitted directly to the National Diploma.
- Applicants with a score of 3 in Mathematics and those with a score of at least 5 in Mathematical Literacy will be admitted to the extended programme.

When the final Grade 12 results are available –

Applicants who were accepted for the National Diploma, but whose final mark for Mathematics was only 3, will be moved to the extended programme.

- **FOR APPLICANTS WHO OBTAINED A QUALIFICATION FROM TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) COLLEGES (PREVIOUSLY KNOWN AS FET COLLEGES):**

Applicants with a National Certificate (Vocational) at NQF Level 4:

Admission requirement(s):

A National Certificate (Vocational) at NQF level 4 with a bachelor's degree or a diploma endorsement issued by the Council for Quality Assurance in General and Further Education and Training (Umalusi), with at least 50% (APS of 4) for English and 60% (APS of 5) for Mathematics and at least 60% (APS of 5) in any three other vocational subjects. Applicants with at least 50% (APS of 4) for Mathematics or 60% (APS of 5) for Mathematical Literacy will be considered for the extended programme.



Selection criteria:

To be considered for this qualification, applicants must have an Admission Point Score (APS) of at least 23.

Applicants with a National N Certificate as published in Nated 191: N3 at (NQF Level 4):

A National Senior Certificate or a N Certificate as published in Nated 191: N3 (NQF Level 4) issued by the Council for Quality Assurance in General and Further Education and Training (Umalusi) with at least 40% (APS of 3) for English and 60% (APS of 5) for Mathematics. Applicants with at least 50% (APS of 4) for Mathematics will be considered for the extended programme.

- b. *Minimum duration:*
One year, after which a student will be introduced to a particular specialisation field for another two years.
- c. *Presentation:*
Day classes.
- d. *Intake for the qualification:*
January only.
- e. *Exclusion and readmission:*
See Chapter 2 of Students' Rules and Regulations.
- f. *Recognition of Prior Learning (RPL), equivalence and status:*
See Chapter 30 of Students' Rules and Regulations.
- g. *Subject credits:*
Subject credits are shown in brackets after each subject.

Key to asterisks:

- * Information does not correspond to information in Report 151.
(Deviations approved by the Senex of 22 June 2011.)

CURRICULUM

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FIRST SEMESTER			
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	
SECOND SEMESTER			
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:		1,000	



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. On 02 August 2018, the syllabus content was defined as follows:

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COMPUTING FUNDAMENTALS IA (CFS10AT) 1 X 3-HOUR PAPER
(Subject custodian: Department of Computer Science)

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: Department of Computer Science)

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)

D**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)

