



FACULTY OF  
ACCOUNTING  
& INFORMATICS

# INFORMATION TECHNOLOGY 2020 HANDBOOK

HANDBOOK FOR 2020

FACULTY of  
Accounting  
and Informatics

**DEPARTMENT**  
**of**  
**INFORMATION**  
**TECHNOLOGY**

# Faculty of Accounting & Informatics

**Vision** A globally recognized faculty for academic excellence.

## **Mission**

“Developing Leaders for the Information Society” through

- Excellence in teaching and learning
- Relevant research and creative innovation
- Social entrepreneurship

## **Values**

- **Fairness:** We treat people equitably with respect. Our decisions are impartial. We embrace diversity and inclusion.
- **Accountability:** We accept responsibility for activities, decisions, actions and disclose outcomes in a transparent way.
- **Integrity:** We enhance our reputation with consistent trustworthy conduct.

# Department of Information Technology

**Vision** Leading ICT Scholarship and Innovation

## **Mission**

“Advancing ICT” through

- A Quality Teaching and Learning Experience
- Relevant and Problem-Driven Research
- Engagement with Society
- Entrepreneurship

## **Values**

- **Innovation:** Thinking out of the box. Striving for better. Cutting-edge curriculum, research and process. Creativity. Exciting. Embrace collaboration.
- **Compassion:** To care and have empathy – to consider from another’s perspective. Understand our students. Ethics – do no harm. Committed. Ubuntu: “I am because we are”.
- **Transformation:** Embrace the digital revolution. The architects of change. Be adaptive. Economic and societal progress. A mix of human and technological values.

## **Goals**

The goals of the Department are:

- To continuously produce a critical mass of quality IT graduates from sound teaching, learning, and assessment practices
- To produce and publish high quality applied research in IT
- To significantly contribute to the empowerment of communities, society, and humanity, using IT as an enabler

## **What is a University of Technology?**

A university of technology is characterized by being research informed rather than research driven where the focus is on strategic and applied research that can be translated into professional practice. Furthermore, research output is commercialized thus providing a source of income for the institution. Learning programmes, in which the emphasis on technological capability is as important as cognitive skills, are developed around graduate profiles as defined by industry and the professions.

## **IMPORTANT NOTICE**

The departmental rules in this handbook must be read in conjunction with the University's General Rules included in the Student Handbook. *The University reserves the right to change the contents without prior notice.*

## **NOTE TO ALL REGISTERED STUDENTS**

Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the Institution and, if permitted, will be in accordance with the rules applicable at that time.

<b>CONTENTS</b>	<b>Page</b>
<b>1 DEPARTMENT AND FACULTY CONTACT DETAILS</b>	<b>1</b>
<b>2 STAFFING</b>	<b>2</b>
<b>3 PROGRAMMES OFFERED BY THE DEPARTMENT</b>	<b>3</b>
<b>4 PROGRAMME INFORMATION</b>	<b>4</b>
<b>4.1 UNDER-GRADUATE PROGRAMMES</b>	<b>5</b>
<b>4.1.1 Higher Certificate in IT (HCINF1)</b>	<b>5</b>
<b>4.1.2 Diploma in ICT in Applications Development (DIIAD1)</b>	<b>5</b>
<b>4.1.3 Diploma in ICT in Business Analysis (DIIBA1)</b>	<b>5</b>
<b>4.1.4 Diploma in ICT in Applications Development (4 year ECP) (DIIAF1)</b>	<b>5</b>
<b>4.1.5. Advanced Diploma in ICT</b>	<b>5</b>
<b>4.1.6. Bachelor of ICT (BINCT1)</b>	<b>5</b>
<b>4.2 POST-GRADUATE PROGRAMMES</b>	<b>6</b>
<b>4.2.1 Master of Information and Communications Technology (MICMT1)</b>	<b>6</b>
<b>4.2.2 PhD in Information Technology (DPINF1)</b>	<b>6</b>
<b>5 MINIMUM ADMISSION REQUIREMENTS</b>	<b>7</b>
<b>5.1 Higher Certificate in IT (HCINF1)</b>	<b>7</b>
<b>5.2 Diploma in ICT in Applications Development (DIIAD1) and Diploma in ICT in Business Analysis (DIIBA1)</b>	<b>7</b>
<b>5.3 Diploma in ICT in Applications Development (4-yearECP) (DIIAF1)</b>	<b>8</b>
<b>5.4 Advanced Diploma in ICT</b>	<b>8</b>
<b>5.5 Bachelor of ICT (BINCT1)</b>	<b>9</b>
<b>5.6 Masters in Information and Communications Technology (MICMT1)</b>	<b>9</b>
<b>5.7 PhD in Information Technology (DPINF1)</b>	<b>9</b>
<b>6 PROGRAMME RULES</b>	<b>10</b>
<b>6.1 UNSATISFACTORY ACADEMIC PROGRESS</b>	<b>10</b>
<b>6.2 PROGRESSION RULES</b>	<b>10</b>
<b>6.2.1 Diploma in ICT in Applications Development (DIIAD1) and Diploma in ICT in Business Analysis (DIIBA1)</b>	<b>10</b>
<b>6.2.2 Diploma in ICT in Applications Development (4-year Foundation) (DIIAF1)</b>	<b>10</b>
<b>6.2.3 Bachelor of ICT (BINCT1)</b>	<b>11</b>
<b>6.3 INTERRUPTION OF STUDIES</b>	<b>11</b>
<b>6.4 FINAL MARK WEIGHTING</b>	<b>11</b>
<b>6.5 GENERAL EDUCATION MODULE RULES</b>	<b>11</b>
<b>6.6 PHASE-OUT MODULE RULES</b>	<b>11</b>
<b>6.7 PART-TIME MODULE RULES</b>	<b>11</b>

<b>7</b>	<b>PROGRAMME STRUCTURE</b>	<b>12</b>
7.1	Higher Certificate in IT (HCINF1)	12
7.2	Diploma in ICT in Applications Development (DIIAD1)	12
7.3	Diploma in ICT in Business Analysis (DIIBA1)	14
7.4.	Diploma in ICT in Applications Development (4-year Foundation) (DIIAF1)	15
7.5	Advanced Diploma in Information and Communications Technology (ADICT1)	17
7.6	Bachelor of Information and Communications Technology (ICT) [BINCT1]	18
7.7	ABRIDGED SYLLABI	20
<b>8</b>	<b>PHASE OUT</b>	<b>35</b>
8.1	Bachelor of Technology in Financial Information Systems [BTFIS2]	35
8.2	Bachelor of Technology in Information Technology [BTINF2]	36
8.3	ABRIDGED SYLLABI	37

## I DEPARTMENT AND FACULTY CONTACT DETAILS

All Departmental queries to:

Secretary: Ms W Xulu  
Tel No: 031 373 5446  
e-Mail: [itdept@dut.ac.za](mailto:itdept@dut.ac.za)  
Location: 2<sup>nd</sup> Floor, Block B, East Wing, Ritson Campus

All Faculty queries to:

Faculty assistant Ms D Small  
Tel No: 031373 5418  
e-Mail: [deborahs@dut.ac.za](mailto:deborahs@dut.ac.za)  
Location: East Wing, Hotel School Building, Ritson Campus

Executive Dean: Prof O Olugbara  
Secretary: Ms B Martin  
Tel No: 031 373 5597  
e-Mail: [beulahm@dut.ac.za](mailto:beulahm@dut.ac.za)  
Location: North Wing, Hotel School Building, Ritson Campus



## 2 STAFFING

	<b>Name and Qualification</b>		
<b>Head of Department</b>	Dr Mtshali PQT	PhD CIS (NSU)	
<b>Associate Professors</b>	Prof Eyono Obono S D	PhD Computer Science (University of Rouen, France)	
	Prof Richard C Millham	PhD Computer Science (De Montfort University), CEng (British Engineering Society)	
<b>Associate Directors</b>	Ally M I	ND EDP (MLST), NHD CDP (MLST)	
	Khan F T	MSc (University of Sydney)	
	Singh K	BSc (Hons) Computer Science, BEd (Hons) UHDE (UDW)	
<b>Senior Lecturers</b>	Asmal E	NHD CDP (MLST), ND EDP (MLST)	
	Foolchand S	BSc (Hons), BCom (UNISA), UDE (UDW)	
	Gonsalves N	MA (UND), ND IT (MLST), BA (Hons) (UDW)	
	Hansrajh A	BSc (Hons) (UNISA) JSED (SCE)	
	Khalili P	MSc, BSc (Cal. State University)	
	Naidoo SC	BTech IT (MLST)	
	Pancham J	MICT (DUT) ND Telecom (Telkom), BSc (Hons) (UDW)	
	Dr Singh A	DTech IT (DUT)	
	Dr Wing J W	PhD IT (DUT)	
	<b>Lecturers</b>	Boamah-Abu C	MCom IS (UCT), BSc (Hons) Comp Sc (Rhodes)
		Dwarika, J	MSc IS (UNISA), BSc (Hons) (UNISA), BTech IT (DIT)
		Dlalisa FS	MCom IS&T (UKZN)
		Govender A	BTech IT (MLST)
		Govender T P	MEd (UKZN), BTech IT (MLST), BSc (UNISA), HED (TCE)
		Hoosen S	BSc (Hons) (UDW)
Jackson P		MICT (DUT)	
Joseph S		MTech IT (DUT)	
Lingwati L		MICT (DUT), BTech IT (DUT), PGDBM (MANCOSA)	
Moodley S G		BTech IT (DUT)	
Moodley U		BTech IT (DIT)	
Naicker E		MICT (DUT)	
Dr Naicker N		PhD IST(UKZN) MSc, BSc (Hons) (UNISA), HED (SCE)	

Ngxata B	MCom IS&T (UKZN), BTech IT (MLST), Dip IT (WSU)
Ramnarain A	MCom IS&T (UKZN)
Singh RS	BSc, Dip Data Metrics (UNISA), HDE (UN)
Soobramoney R	BSc (Hons) (UND)
Soobramoney S	MICT (DUT)
Sosibo-Khena NS	MTech IT (DUT), BTech IT (DIT), ND IT (TN)
Thompson R C	MICT (DUT), NH Dip (TN),
Vanker C	MCom IS&T (UKZN) BTech IT (MLST)
Vilakazi Z	BTech IT (DIT)
White C R	BSc (Hons), HDE (PG) (Rhodes)
Zincume X	MCom IS&T (UKZN), BTech IT (DIT), BTech FIS (DIT)

#### **Co-Ordinator: Deaf Programme**

Kanaye N	L.S.T.D -Springfield Col of Educ; Dip in Spec Ed: Aurally Handicapped -UNISA; BA: Eng, Psych - UNISA; MA: Advanced Deaf Educ Gallaudet Univ (Washington, DC, USA)
----------	---

#### **South African Sign Language Interpreters**

Phakathi, I N N	JPTD-Mpumalanga, Dip Rem Ed, BEd (Univ of Potch)
Mngadi, N S	ND in translation and interpreting practice Practice; BTech in translation and and interpreting practice

#### **Administrative Staff:**

Secretary:	Ms W Xulu
Administrative Assistants:	Ms F Naidoo Mr N Ngcobo
Senior Technician Networks:	Mr A Ramdass
Senior Technician Desktop:	Mr R M Nepal
Technicians:	Mr M Womack Mrs G Pursan Mr BNM Mbuthuma Mr R Govender



### 3 PROGRAMMES OFFERED BY THE DEPARTMENT

The table below provides details of the programme offerings and phased out programmes.

Programme Name	Code	SAQA NLRD	NQF level	NQF Credits
Higher Certificate in IT	HCINFI	98911	5	120
Diploma in ICT in Applications Development	DIADI	94697	6	360
Diploma in ICT in Business Analysis	DIIBAI	97709	6	360
Diploma in ICT in Applications Development (4-year ECP)	DIIAFI	94697	6	360
Advanced Diploma in ICT	ADICTI		7	120
Bachelor of ICT	BINCTI	104534	7	360
Master of ICT	MICMTI	96833	9	180
PhD in IT	DPINFI	96804	10	360
PHASED-OUT Programmes			Last new intake	
ND: Information Technology (Software Development)	NDINSI	72241	2015	
ND: Information Technology (Business Applications)	NDINBI	72241	2015	
ND: Information Technology (4 year Foundation)	NDISFI	72241	2015	
ND: Financial Information Systems	NDFIS2	72234	2015	
B.Tech: Financial Information Systems	BTFIS2	72134	2019	
B.Tech: Information Technology	BTINF2	72142	2019	

## **4 PROGRAMME INFORMATION**

### **4.1. UNDER-GRADUATE PROGRAMMES**

#### **4.1.1. Higher Certificate in IT (HCINF1)**

This programme is designed as an articulation pathway to higher NQF level IT qualifications such as, Diploma in ICT. The graduate will be equipped with foundational technical skills in IT with a focus on web development, e-commerce, computer networks and IT solutions development.

##### **Duration**

Min: 1 year; Max: 2 years

#### **4.1.2. Diploma in ICT in Applications Development (DIADI)**

One of two streams in the Diploma in ICT, this qualification will develop knowledge and practiced skill required for the development of IT solutions that are reliable, efficient and useful.

##### **Duration**

Min: 3 years; Max: 5 years

#### **4.1.3. Diploma in ICT in Business Analysis (DIIBA1)**

One of two streams in the Diploma in ICT, this qualification will develop knowledge and practiced skill for analyzing business and other environments to determine their needs and propose the best IT solution.

##### **Duration**

Min: 3 years; Max: 5 years

#### **4.1.4. Diploma in ICT in Applications Development (4 year ECP) (DIAFI)**

An augmented 4-year curriculum is devised to enhance student development. Graduates will be able to development IT solutions that are reliable, efficient and useful.

##### **Duration**

Min: 4 years; Max: 5 years

#### **4.1.5. Advanced Diploma in ICT**

This programme is designed to prepare graduates for the IT industry or for postgraduate study through the deepening of their knowledge and understanding of theories, methodologies and practices within the field of IT and research.

##### **Duration**

Min: 1 years; Max: 2 years

#### **4.1.6. Bachelor of ICT (BINCTI)**

This Bachelor Degree has a theoretical and practical focus aimed at developing knowledge and skills that are in high demand throughout the IT industry. Graduates will be capable of improving organizational processes through the implementation of current IT developments.

##### **Duration**

Min: 3 years; Max: 5 years

## 4.2. **POST-GRADUATE PROGRAMMES**

### 4.2.1. **Master of Information and Communications Technology (MICMTI)**

A full research programme, the Master of ICT is designed to equip its graduates with knowledge for conducting IT based research. Upon completion, graduates will be poised to undertake either independently or collaboratively complex IT research such as that required in a PhD. Graduates will have the ability to disseminate findings of their research through publications.

#### **Duration**

Min: 1 year; Max: 3 years

### 4.2.2. **PhD in Information Technology (DPINF1)**

PhD will equip its graduates with knowledge for conducting high quality research and contributing new knowledge to an area of IT. Graduates will be able to conduct independent research that results in innovations and produces new knowledge in an area of IT. Graduates will have developed the ability to disseminate findings of their research and in doing so make a contribution towards IT.

#### **Duration**

Min: 2 years; Max: 4 years

## 5 MINIMUM ADMISSION REQUIREMENTS

### 5.1. Higher Certificate in IT (HCINF1)

In addition to General Rules G7 and G20B, the minimum admission requirement is a National Senior Certificate (NSC) or Senior Certificate (SC) or a National Certificate Vocational (NCV) level 4 pass and must meet the following requirements:

Compulsory Subjects	NSC Rating	SC		NCV
		HG	SG	
English (Home Language)	3	E	C	50%

**Note:** In addition to the above, the Department of IT can apply selection and ranking criteria based on academic merits and/or work experience before granting admission.

### 5.2. Diploma in ICT in Applications Development (DIADI) and Diploma in ICT in Business Analysis (DIIBA I)

In addition to the requirements of the General Rules G7 and G21B, the minimum admission requirement is a National Senior Certificate (NSC) or Senior Certificate (SC) or a National Certificate Vocational (NCV) that is valid for entry into a Diploma and must meet the following minimum requirements:

Compulsory Subjects	NSC Rating	SC		NCV
		HG	SG	
English (Home Language) OR English (1 <sup>st</sup> Additional Language)	3 4	E n/a	C n/a	50% n/a
Mathematics OR Mathematical Literacy	3 6	E n/a	C n/a	50% n/a
Two 20 credit subjects (Life Orientation or more than one additional language is excluded)	3	n/a	n/a	(a) At least 50% in one fundamental subject, in addition to English & Mathematics. (b) At least 60% in three compulsory vocational subjects

**Note:** In addition to the above, the Department of IT can apply selection and ranking criteria based on academic merits and/or work experience before granting admission.

### 5.3. Diploma in ICT in Applications Development (4-yearECP) (DIIAFI)

In addition to the requirements of the General Rules G7 and G21B, the minimum admission requirement is a National Senior Certificate (NSC) or Senior Certificate (SC) or a National Certificate Vocational (NCV) that is valid for entry into a Diploma and must meet the following requirements:

Compulsory Subjects	NSC Rating	S C		NCV
		HG	SG	
English (Home Language) OR English (1 <sup>st</sup> Additional Language)	3 3	E n/a	C n/a	50% n/a
Mathematics OR Mathematical Literacy	3 5	E n/a	C n/a	50% n/a
Two 20 credit subjects (Life Orientation or more than one additional language is excluded)	3	n/a	n/a	(a) At least 50% in one fundamental subject, in addition to English & Mathematics. (b) At least 60% in three compulsory vocational subjects

**Note:** In addition to the above, the Department of IT can apply selection and ranking criteria based on academic merits and/or work experience before granting admission.

### 5.4. Advanced Diploma in ICT

In addition to General Rules G7 and G21C, admission requires a Diploma in Information and Communications Technology at NQF level 6, 360 credits or equivalent.

**Note:** In addition to the above, the Department of IT can apply selection and ranking criteria based on academic merits and/or work experience before granting admission.

5.5. **Bachelor of ICT (BINCTI)**

In addition to the requirements of the General Rules G7 and G23B, the minimum admission requirement is a National Senior Certificate (NSC) awarded with Bachelors Pass or Senior Certificate (SC) awarded with Exemption or a National Certificate Vocational (NCV) that is valid for entry into a Degree and must meet the following requirements:

Compulsory Subjects	NSC Rating	Compulsory Subjects	SC (HG)	NCV
English (Home Language) OR English (1 <sup>st</sup> Additional Language)	4	English	D	
Mathematics	4	Mathematics	D	
And at least one of the following subjects: Physical Science OR Information Technology	4	And at least one of the following subjects: Physical Science OR Information Technology	D	(a) At least 60% in one fundamental subject, in addition to English & Mathematics. (b) At least 70% in three compulsory vocational subjects

**Note:** In addition to the above, the Department of IT can apply selection and ranking criteria based on academic merits and/or work experience before granting admission.

5.6. **Masters in Information and Communications Technology (MICMTI)**

In addition to the General Rule G24(I), the minimum admission requirement is Honours Degree in ICT OR Post Graduate Diploma in ICT OR equivalent.

**Note:** In addition to the above, admission requires approval of draft research proposal and availability of a willing and able supervisor from the Department of IT.

5.7. **PhD in Information Technology (DPINFI)**

In addition to the General Rule G25(I), the minimum admission requirement is a Master of Information and Communications Technology Degree OR equivalent.

**Note:** In addition to the above, admission requires approval of draft research proposal and availability of a willing and able supervisor from the Department of IT.

## 6 PROGRAMME RULES

### 6.1. UNSATISFACTORY ACADEMIC PROGRESS

General Rules G17 and G19 to G25 apply. In addition, the Department reserves the right to recommend that a student withdraw from a programme due to poor performance.

### 6.2. PROGRESSION RULES

#### 6.2.1. Diploma in ICT in Applications Development (DIAD I) and Diploma in ICT in Business Analysis (DIIBA I)

In addition to General Rules G14, G16, G17 and G21B the student shall pass and accumulate the minimum number of credits at the end of each year as indicated in the table below. This gives the student five years to complete the three-year qualification without intervention. Should a student not achieve the minimum credit indicated in the table below, he/she will not be permitted to register in the subsequent year.

End of Year	Minimum Credits
1	50
2	120
3	200
4	280

For DIAD I: A student will be able to register for third year modules if they have passed all first-year majors (4), and 2 out of 5 second-year majors.

For DIIBA I: A student will be able to register for third year modules if they have passed all first-year majors (2), and 2 out of 4 second-year majors.

See section 7 of this handbook for majors.

#### 6.2.2. Diploma in ICT in Applications Development (4-year Foundation) (DIAFI)

In addition to Rules G14, G16, G17 and G21B the student shall pass and accumulate the minimum number of credits at the end of each year period, as indicated in the table below. This gives the student five years to complete the four-year qualification without intervention. Should a student not achieve the minimum credit indicated in the table below, he/she will not be permitted to register in the subsequent year.

End of Year	Minimum Credits
1	50
2	120
3	200
4	280

A student may not progress to study period 4 (fourth year) unless they have passed all the major modules in first and second year (4) and at least 2 of the 5 major modules in third year. See section 7 of this handbook for majors.

### 6.2.3. Bachelor of ICT (BINCTI)

In addition to Rules G14, G16, G17 and G23B the student shall pass and accumulate the minimum number of credits at the end of each year of registration, as indicated in the table below. This gives the student five years to complete the three-year qualification without intervention. Should a student not achieve the minimum credit indicated in the table above, he/she will not be permitted to register in the subsequent year.

End of year	Minimum Credits
1	60
2	120
3	200
4	260

### 6.3. INTERRUPTION OF STUDIES

Should a student interrupt their studies by more than three years the student will be required to provide evidence of appropriate knowledge which will be evaluated by the Department prior to being given permission to re-register.

### 6.4. FINAL MARK WEIGHTING

The final mark for a module with an examination is calculated as 40% course mark and 60% examination mark. The calculation of the course mark for each module will be indicated within the student guide of each module.

### 6.5. GENERAL EDUCATION MODULE RULES

The General Education modules are compulsory and covers 30% of the total credits of an undergraduate Diploma and Degree programme.

### 6.6. PHASE-OUT MODULE RULES

Phase out modules may not be offered as both full-time and part-time.

### 6.7. PART-TIME MODULE RULES

Part time students may have to write tests and/or examinations during full-time hours that is, during normal daytime working hours.



## 7 PROGRAMME STRUCTURE

### 7.1. Higher Certificate in IT (HCINF1)

#### Year I (Study Period – I)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
CSTN101	Cornerstone 101		5	12	CA	
DBAD102	Database Administration		5	12	CA	
ECMR102	E-Commerce		5	12	CA	
HDWS102	Hardware Support		5	12	CA	
NWRK102	Networking		5	12	CA	
SWSP102	Software Support		5	12	CA	
SLDV102	Solutions Development		5	12	CA	
WEBP102	Web Project		5	24	CA	
WBTC102	Web Technology		5	12	CA	

### 7.2. Diploma in ICT in Applications Development (DIADI)

**Note:** \* denotes Major module

#### Year I (Study Period – I)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
CSTN101	Cornerstone 101	[GE] Inst.	5	12	CA	
ICTL101	Information & Communications Technology Literacy & Skills	[GE] Inst.	5	8	CA	
BFND101	Business Fundamentals I	[GE] Fac.	5	12	CA	
APDA101	Applications Development IA*	[C]	5	12	Exam	
FCSC101	Fundamentals of Computer Security	[F]	5	8	Exam	
INSS101	Information Systems I*	[C]	5	8	Exam	
MWMU101	Me, My World, My Universe	[GE] Inst.	5	8	CA	
OSYS101	Operating Systems	[F]	5	12	Exam	
APDP101	Applications Development Project I*	[GE] Program	5	12	CA	Applications Development IA [E]; Applications Development IB [C]
APDB101	Applications Development IB*	[C]	5	12	Exam	Applications Development IA [E]
CNTW101	Communications Networks I	[F]	5	16	Exam	

## Year 2 (Study Period – 2)

		Education				
BFND201	Business Fundamentals II	[GE] Fac.	6	12	CA	Business Fundamentals I [P]
MCPA201	Mobile Computing IIA	[C]	6	8	Exam	
ISYA201	Information Systems IIA*	[C]	6	8	Exam	Information Systems I [P]
APDA201	Applications Development IIA*	[C]	6	12	Exam	Applications Development IA [P]; Applications Development IB [P]
ITPM101	IT Project Management	[C]	6	12	Exam	
INMA201	Information Management IIA	[C]	6	8	Exam	
CMEP101	Community Engagement Project	[GE] Inst.	6	8	CA	
MCPB201	Mobile Computing IIB	[C]	6	12	Exam	Mobile Computing IIA [E]
ISYB201	Information Systems IIB*	[C]	6	8	Exam	Information Systems IIA [E]
APDB201	Applications Development IIB*	[C]	6	12	Exam	Applications Development IIA [E]
INMB201	Information Management IIB	[C]	6	8	Exam	Information Management IIA [E]
APDP201	Applications Development Project II*	[GE] Program	6	12	CA	Applications Development Project I [P]; Applications Development IIA [E]; Information Systems IIA [E].

## Year 3 (Study Period – 3)

		Education				
APDA301	Applications Development IIIA*	[C]	6	12	Exam	Applications Development IIA [P]; Applications Development IIB [P]
ISYA301	Information Systems IIIA*	[C]	6	12	Exam	Information Systems IIA [P]; Information Systems IIB [P]; Applications Development Project II [E]
ADPA301	Applications Development Project IIIA*	[GE] Program	6	12	CA	Applications Development Projects II [P]; Applications Development IIA [P]; Applications Development IIB [P]
HCIN101	Human Computer Interaction	[C]	6	12	Exam	
TIPP301	Theory of ICT Professional Practice III	[GE] Program	6	12	Exam	
ENSP101	Entrepreneurial Spirit	[GE] Fac.	6	12	CA	Business Fundamentals I [P], Business Fundamentals II [P]
APDB301	Applications Development IIIB*	[C]	6	12	Exam	Applications Development IIIA [E]
ISYB301	Information Systems IIIB*	[C]	6	12	Exam	Information Systems IIIA [E]
ADPB301	Applications Development Project IIIB*	[GE] Program	6	24	CA	Applications Development Project IIIA [E]; Applications Development IIIA [E]

### 7.3. Diploma in ICT in Business Analysis (DIIBA1)

**Note:** \* denotes Major module

#### Year 1 (Study Period – 1)

CSTN101	Cornerstone 101	[GE] Inst.	5	12	CA	
ICTL101	Information & Communications Technology Literacy & Skills	[GE] Inst.	5	8	CA	
BFND101	Business Fundamentals I	[GE] Fac.	5	12	CA	
APDA101	Applications Development IA	[C]	5	12	Exam	
FCSC101	Fundamentals of Computer Security	[F]	5	8	Exam	
MWMU101	Me, My World, My Universe	[GE] Inst.	5	8	CA	
LWLF101	Law for Life	[GE] Inst.	5	8	CA	
APDB101	Applications Development IB	[C]	5	12	Exam	Applications Development IA [E]
FINA101	Financial Accounting I	[C]	5	12	Exam	
BSAP101	Business Analysis Project I*	[GE] Program	5	16	CA	
BSIS101	Business Information Systems I*	[C]	5	12	Exam	

#### Year 2 (Study Period – 2)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam/ CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
BFND201	Business Fundamentals II	[GE] Fac.	6	12	CA	Business Fundamentals I [P]
BSAA201	Business Analysis IIA*	[C]	6	8	Exam	Financial Accounting I [P]
APDA201	Applications Development IIA	[C]	6	12	Exam	Applications Development IA [P]; Applications Development IB [P]
INMA201	Information Management IIA	[C]	6	8	Exam	
CABF201	Computer Applications in Business & Finance II	[C]	6	12	Exam	
BSIS201	Business Information Systems II*	[C]	6	8	Exam	Business Information Systems I [P]
THIA201	Theory of Internal Auditing II	[C]	6	8	Exam	
BSAB201	Business Analysis IIB*	[C]	6	8	Exam	Business Analysis IIA [E]
APDB201	Applications Development IIB	[C]	6	12	Exam	Applications Development IIA [E]
INMB201	Information Management IIB	[C]	6	8	Exam	Information Management IIA [E]
BSAP201	Business Analysis Project II*	[GE] Program	6	12	CA	Business Analysis Project I; Business Information Systems II [E]
ITPM101	IT project Management	[C]	6	12	Exam	

### Year 3 (Study Period – 3)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam/ CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
BSAA301	Business Analysis IIIA*	[GE] Program	7	16	Exam	Business Analysis IIA [P]; Business Analysis IIB [P]; Business Analysis Project II [E]
BISA301	Business Information Systems IIIA*	[C]	7	16	Exam	Business Information Systems II [P]
BAPA301	Business Analysis Project IIIA*	[GE] Program	6	16	CA	Business Analysis IIA [P]; Business Analysis IIB [P]; Business Analysis Project II [P]
TIPP301	Theory of ICT Professional Practice III	[C]	6	12	Exam	
ENSP101	Entrepreneurial Spirit	[GE] Fac.	6	12	CA	Business Fundamentals I [P]; Business Fundamentals II [P]
BSAB301	Business Analysis IIIB*	[GE] Program	7	16	Exam	Business Analysis IIIA [E]
BISB301	Business Information Systems IIIB*	[C]	7	12	Exam	Business Information Systems IIIA [E]
BAPB301	Business Analysis Project IIIB*	[GE] Program	6	20	CA	Business Analysis Project IIIA [E]; Business Analysis IIIA [E]

### 7.4. Diploma in ICT in Applications Development (4-year Foundation) (DIAFI)

**Note:** \* denotes Major module

#### Year I (Study Period – I)

Module Code	Module Name		NOF Level	SAQA Credits	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
CSTN101	Cornerstone 101	[GE] Inst.	5	4	CA	
FCSC101	Fundamentals of Computer Security	[F]	5	3	Exam	
ICTL101	Information & Communications Technology Literacy & Skills	[GE] Inst.	5	3	CA	
ILGA101	IT Logic & Technology IA	[F]	5	8	CA	
SKDA101	Skills Development IA	[F]	5	8	CA	
ILGB101	IT Logic & Technology IB	[F]	5	8	CA	IT Logic & Technology IA [E]
INSS101	Information Systems I*	[C]	5	3	Exam	
OSYS101	Operating Systems	[F]	5	3	Exam	
SKDB101	Skills Development IB	[F]	5	8	CA	

## Year 2 (Study Period – 2)

Module Code	Module Name		NOF Level	SAQA Credits	Exam/ CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
APDA101	Applications Development IA*	[C]	5	6	Exam	
BFND101	Business Fundamentals I	[GE] Fac.	5	6	CA	
CNTW101	Communications Networks I	[F]	5	8	Exam	
ILGA201	IT Logic & Technology IIA	[F]	5	8	CA	IT Logic & Technology IA [P]; IT Logic & Technology IB [P]
SKDA201	Skills Development IIA	[F]	5	8	CA	Skills Development IA [P]; Skills Development IB [P]
APDB101	Applications Development IB*	[C]	5	6	Exam	Applications Development IA [E]
APDP101	Applications Development Project I*	[GE] Program	5	8	CA	Applications Development IA [E]; Applications Development IB [C]
ILGB201	IT Logic & Technology IIB	[F]	5	8	CA	IT Logic & Technology IIA [E]
MWMU101	Me, My World, My Universe	[GE] Inst.	5	6	CA	
SKDB201	Skills Development IIB	[F]	5	8	CA	Skills Development IA [P]; Skills Development IB [P]

## Year 3 (Study Period – 3)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
APDA201	Applications Development IIA*	[C]	6	12	Exam	Applications Development IA [P]; Applications Development IB [P]
BFND201	Business Fundamentals II	[GE] Fac.	6	12	CA	Business Fundamentals I [P]
INMA201	Information Management IIA	[C]	6	8	Exam	
ISYA201	Information Systems IIA*	[C]	6	8	Exam	Information Systems I [P]
ITPM101	IT Project Management	[C]	6	12	Exam	
MCPA201	Mobile Computing IIA	[C]	6	8	Exam	
APDB201	Applications Development IIB*	[C]	6	12	Exam	Applications Development IIA [E]
APDP201	Applications Development Project II*	[GE] Program	6	12	CA	Applications Development Project I [P]; Applications Development IIA [E]; Information Systems IIA [E];
CMEP101	Community Engagement Project	[GE] Inst.	6	8	CA	
INMB201	Information Management IIB	[C]	6	8	Exam	Information Management IIA [E]
ISYB201	Information Systems IIB *	[C]	6	8	Exam	Information Systems IIA [E]
MCPB201	Mobile Computing IIB	[C]	6	12	Exam	Mobile Computing IIA [E]

## Year 4 (Study Period – 4)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam/ CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
APDA301	Applications Development IIIA*	[C]	6	12	Exam	Applications Development IIA [P]; Applications Development IIB [P]
ISYA301	Information Systems IIIA*	[C]	6	12	Exam	Information Systems IIA [P]; Information Systems IIB [P]; Applications Development Project II [E]
ADPA301	Applications Development Project IIIA*	[GE] Program	6	12	CA	Applications Development Projects II [P]; Applications Development IIA [P]; Applications Development IIB [P]
HCIN101	Human Computer Interaction	[C]	6	12	Exam	
TIPP301	Theory of ICT Professional Practice III	[GE] Program	6	12	Exam	
ENSP101	Entrepreneurial Spirit	[GE] Fac.	6	12	CA	Business Fundamentals I [P]. Business Fundamentals II [P]
APDB301	Applications Development IIIB*	[C]	6	12	Exam	Applications Development IIIA [E]
ISYB301	Information Systems IIIB*	[C]	6	12	Exam	Information Systems IIIA [E]
ADPB301	Applications Development Project IIIB*	[GE] Program	6	24	CA	Applications Development Project IIIA [E]; Applications Development IIIA [E]

## 7.5. Advanced Diploma in Information and Communications Technology (ADICTI)

**Note:** \*\* indicates an **Elective** – Two modules must be selected from the Electives.

The Department reserves the right not to offer an Elective Module.

### Year I (Study Period – I)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam/ CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
DAST401	Data Structures		7	16	Exam	
PBDE401	Platform Based Development		7	16	CA	
RESK401	Research skills		7	12	Exam	
APMC401	Applied Mathematics for Computing A (Probability & Statistics)		7	12	Exam	
SODM401	Software Development and Management		7	16	Exam	
APMC402	Applied Mathematics for Computing B (Discrete Structures & Linear Algebra)		7	16	Exam	
SAMA301	Strategy Acquisition and Management III**		7	16	Exam	
BUIN301	Business Intelligence III**		7	16	Exam	
PDCO301	Parallel and Distributed Computing III**		7	16	Exam	
MAIN301	Machine Intelligence III**		7	16	Exam	
GRAP301	Graphics III**		7	16	Exam	
HCIN301	Human Computer Interaction III**		7	16	Exam	

## 7.6. Bachelor of Information and Communications Technology (ICT) [BINCTI]

**Note:** \*\* indicates an **Elective** – Two modules must be selected from the Electives.  
The Department reserves the right not to offer an Elective Module.

### Year I (Study Period – I)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
BFND101	Business Fundamentals I	[GE] Fac.	6	12	CA	
INCP101	Introduction to Computing	[C]	5	12	Exam	
SWDF101	Software Development Fundamentals	[C]	5	12	Exam	
ICMS101	Interpersonal Communication & Self	[GE] Inst.	5	8	CA	
MCMA101	Mathematics for Computing IA	[F]	6	12	CA	
CSTN101	Cornerstone 101	[GE] Inst.	5	12	CA	
BFND201	Business Fundamentals II	[GE] Fac.	6	12	CA	Business Fundamentals I [P]
DSTR101	Discrete Structures	[F]	6	16	Exam	
MCMB101	Mathematics for Computing IB	[C]	6	12	CA	
SYSF101	Systems Fundamentals	[F]	5	12	Exam	

### Year 2 (Study Period – 2)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam/ CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
SADS201	Systems Analysis and Design II	[C]	6	12	Exam	
LWLF101	Law for Life	[GE] Inst.	5	8	CA	
OGBH201	Organizational Behavior II	[F]	5	12	Exam	
NOPS201	Networks and Operating Systems II	[C]	6	16	Exam	Systems Fundamentals [C]
PRLN201	Programming Languages II	[F]	6	12	Exam	
ALDS201	Algorithms and Data Structures II	[C]	6	12	Exam	Discrete Structures [C]
INFM201	Information Management II	[C]	6	12	Exam	
INAS201	Information Assurance and Security II	[C]	6	16	Exam	
COAR201	Computer Organization and Architecture II	[C]	6	16	Exam	Systems Fundamentals [C]
ENSP101	Entrepreneurial Spirit	[GE] Fac.	6	12	CA	Business Fundamentals I [P], Business Fundamentals II [P]

### Year 3 (Study Period – 3)

Module Code	Module Name	Core; Fundamental; General Education	NQF Level	SAQA Credits	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]
SFEN301	Software Engineering III	[C]	7	16	Exam	
PBDV301	Platform Based Development III	[C]	7	16	Exam	Programming Languages II [C]
IPRT301	Integrative Programming & Technology III	[C]	7	16	Exam	
SPRI301	Social and Professional Issues III	[C]	7	16	Exam	
PRJA301	Project IIIA	[C]	7	8	CA	Programming Languages II [C]
PRJB301	Project IIIB	[C]	7	12	CA	Programming Languages II [C]
IEXP101	Industry Exposure	[C]	7	12	CA	
SAQM301	Strategy Acquisition & Management III**	[E]	7	16	Exam	
PJMN301	Project Management III**	[E]	7	16	Exam	
BSIT301	Business Intelligence III**	[E]	7	16	Exam	Information Management II [C]
PDCP301	Parallel and Distributed Computing III**	[E]	7	16	Exam	Programming Languages II [C]
MCHI301	Machine Intelligence III**	[E]	7	16	Exam	
GRPH301	Graphics III**	[E]	7	16	Exam	
HCPI301	Human Computer Interaction III**	[E]	7	16	Exam	
WSYT301	Web Systems and Technology III**	[E]	7	16	Exam	



7.7. ABRIDGED SYLLABI

<p><b>Algorithms and Data Structures II [ALDS201]</b></p> <p>BINCTI NQF: 6 SAQA: 12</p>	<p><b>Applications Development IA [APDA101]</b></p> <p>DIAD1;DIIAF1;DIIBA1 NQF: 5 SAQA: 12</p>
<p>Basic analysis; Algorithmic strategies; Fundamental data structures and algorithms; Basic Automata, Computability and Complexity; Advanced Computational Complexity; Advanced Automata Theory and Computability; Advanced Data Structures Algorithms and Analysis</p>	<p>Introduction .Net Platform; Introducing the C# Programming Language; Getting start with .Net developing using C#; Language Essentials; Expressions and Operators; Primer on Types and Objects; Simple Flow Control; Basics of Exception and Resource Management; Introduction Types; Methods; Introduction To Unit Testing.</p>
<p><b>Applications Development IB [APDB101]</b></p> <p>DIAD1;DIIAF1;DIIBA1 NQF: 5 SAQA: 12</p>	<p><b>Applications Development IIA [APDA201]</b></p> <p>DIAD1;DIIAF1;DIIBA1 NQF: 6 SAQA: 12</p>
<p>Fields, Properties &amp; Indexers; Constructors and Finalizes; Operators, Overloading and Conversions; Object Oriented Programming; Generic Types and Methods Collection Types; Delegates; Events; Language Integrated Query Essentials; Exceptions; Working with IO.</p>	<p>Introduction to (a) development framework(s), Client-side; languages for Web Development, Server-side languages; for Web Development, Frontend Frameworks for Web; Development, Backend Frameworks for Web; Development, Web Development Tools.</p>
<p><b>Applications Development IIB [APDB201]</b></p> <p>DIAD1;DIIAF1;DIIBA1 NQF: 6 SAQA: 12</p>	<p><b>Applications Development IIIA [APDA301]</b></p> <p>DIAD1;DIIAF1 NQF: 6 SAQA: 12</p>
<p>Creating and managing Filters, controller Extensibility,; creating and managing Views, Designing Model Templates,; Model Binding, Model Validation, Creating Asynchronous; Java Script Functions, Working with Java Script; Frameworks, Security Vulnerability when developing; applications, Authentication and Authorizing access to; applications, Deployment.</p>	<p>Informed understanding of Cloud Computing Concepts Design and build applications that are cloud computing ready; Create, deploy, configure and monitor applications that run in the chosen cloud platform; Ability host Windows Communication Foundation (WCF); services using the chosen cloud platform Solid knowledge of virtualization and storage A sound understanding of Blobs; Include web forms security in cloud-based applications Ability to upload and test cloud applications.</p>

<b>Applications Development IIIB [APDB301]</b>	<b>Applications Development Project I [APDP101]</b>
DIIAD1;DIIAFI NQF: 6 SAQA: 12	DIIAD1;DIIAFI NQF: 5 SAQA: 12
Build service oriented cloud applications; Manage service oriented cloud applications; Analyse the programming of cloud computing services to fully reveal and understand the framework behind the various services; Sound knowledge of creating and deploying cloud services Employ worker roles and queues for asynchronous processing; Create and access SQL databases for cloud-based storage Control access to cloud applications.; Build cloud applications taking into consideration security;; confidentiality and audits.	Fundamental knowledge of how to design, develop and; implement an application, Ability to test the application in; a live environment, Ability to incorporate limited; processing capabilities into the application, Create and; submit documentation for the web application in the form; of a report; Ability to apply logic and problem solving skills, Abilities to; synthesize knowledge from other learning areas into the; capstone project, Demonstrate and present the; application.
<b>Applications Development Project II [APDP201]</b>	<b>Applications Development Project IIIA [ADPA301]</b>
DIIAD1;DIIAFI NQF: 6 SAQA: 12	DIIAD1;DIIAFI NQF: 6 SAQA: 12
Planning and Analysis: Documents and Presentation, design documents and Presentation, implementation and; Testing. Applications must include the use of either a; relational model database server or an object-relational; database. Examples of these database servers are Oracle; MS SQL, MY SQL, DB4objects, and DB2. All applications; must be developed as either web / mobile based and; designed to incorporate the relevant development; libraries.	Identify the expected outcomes of the project.; Provide a well-documented description of the problem to; be addressed and why it is important.; Indicate the expected outcomes of the project, preferably; in measurable terms.; List key personnel who will work on the project and; include their cv's.; Describe how long (days, months) specific tasks or; components of the project will take.; Show the annual and overall cost of the project. A; detailed budget should be divided into categories such as; salaries, fringe benefits, travel, supplies, equipment, etc.; Construct a plan of action for how the objectives will be achieved. Draw up a checklist that provides the means to determine if the project has accomplished its objectives.
<b>Applications Development Project IIIB [ADPB301]</b>	<b>Applied Mathematics for Computing A (Probability and Statistics) [APMC401]</b>
DIIAD1;DIIAFI NQF: 6 SAQA: 24	ADICT1 NQF: 7 SAQA: 12
Understanding and application of concepts in application; development Application Development Methodology; Agile/Scrum, Waterfall, RAD, etc. Introduction to Project; Management The project management and Information; Technology Context. The project management process; groups Project Integration Management, Project Scope; Management, Project Time Management, Project Cost; Management, Project Quality Management, Project Human; Resource Management.	Overview; Discrete probability; Continuous probability; Expectation; Stochastic processes; Sampling distributions; Estimation; Hypothesis tests; Correlation and regression.

<b>Applied Mathematics for Computing B (Discrete Structures and Linear Algebra) [APMC402]</b>	<b>Business Analysis IIA [BSAA201]</b>
ADICTI NQF: 7 SAQA: 16	DIIBA1 NQF: 6 SAQA: 8
Sets, Relations, and Functions Propositional logic; Basic Logic used in mathematics and problem solving; Proof Techniques; Basics of Counting; Vector Algebra; Linear Algebra	Framework for Business Analysis and valuation using financial statements; Strategy Analysis; Implementing Accounting Analysis Financial Analysis; Forecasting; Valuation Theory and concepts Valuation Implementation.
<b>Business Analysis IIB [BSAB201]</b>	<b>Business Analysis IIIA [BSAA301]</b>
DIIBA1 NQF: 6 SAQA: 8	DIIBA1 NQF: 7 SAQA: 16
UML as the Tool; Business Analysis Planning and Monitoring Plan the execution of business analysis tasks; Update or change the approach to business analysis as required; Assess effectiveness of and continually improve business; analysis practices Enterprise Analysis.	An in-depth study in object-oriented systems analysis and design and UML; Role of the Business Analysis Consultant; Application of UML diagrams in business scenarios Case studies; Compile and execute a test plan to validate an ICT solution.
<b>Business Analysis IIIB [BSAB301]</b>	<b>Business Analysis Project I [BSAPI01]</b>
DIIBA1 NQF: 7 SAQA: 16	DIIBA1 NQF: 5 SAQA: 16
SAP as the Tool; Using IT for process management and improvement; Business process improvement and modelling software Tools of business process simulation; ERP systems; Use cases; Organizational issues in business process management; Understanding the customer Business process outsourcing; Managing processes that cross organizational borders; Case Studies.	Structure of Report; Executive Summary: Write this last. It's just a page or two; of highlights.; Company Description: Legal establishment, history, start- up plans etc.; Product or Service: Describe what you're selling. Focus on Critical Citizenry in a business environment.

<b>Business Analysis Project II [BSAP201]</b>	<b>Business Analysis Project IIIA [BAPA301]</b>
DIIBA1 NQF: 6 SAQA: 12	DIIBA1 NQF: 6 SAQA: 16
Strategies for creating a Portfolio of evidence Creating a Portfolio of Evidence for a Business related problem; Presentation of a Research based Report; Overview of Feasibility study, requirements analysis and; Specification Business.	Identify the expected outcomes of the project.; Provide a well-documented description of the problem to; be addressed and why it is important.; Indicate the expected outcomes of the project, preferably; in measurable terms.; List key personnel who will work on the project and include their cv's.; Describe how long (days, months) specific tasks or components of the project will take.; Show the annual and overall cost of the project. A; detailed budget should be divided into categories such as salaries, fringe benefits, travel, supplies, equipment, etc. Construct a plan of action for how the objectives will be achieved.; Draw up a checklist that provides the means to determine if the project has accomplished its objectives.
<b>Business Analysis Project IIIB [BAPB301]</b>	<b>Business Fundamentals I [BFND101]</b>
DIIBA1 NQF: 6 SAQA: 20	BINCT1;DIIAD1;DIIAF1;DIIBA1 NQF: 6 SAQA: 12
Understanding and application of concepts in business analysis Presentation / display skills; Developing a Business Case/Structure of a Business Case and Presentation of Business Case.	Efficiently manage key aspects of academic life Basic business communication, written and verbal Information Literacy; Basic Business Finance; customer benefits.; Market Analysis: You need to know your market.; customer needs, where they are, how to reach them, etc. Strategy and Implementation: Be specific. Include management responsibilities with dates and budget. Management Team: Include backgrounds of key members of the team, personnel strategy, and details.; Financial Plan: Include profit and loss, cash flow, balance; sheet, break-even analysis, assumptions, business ratios, etc.; Basic Research Methodology Project Presentation.
<b>Business Fundamentals II [BFND201]</b>	<b>Business Information Systems I [BSIS101]</b>
BINCT1;DIIAD1;DIIAF1;DIIBA1 NQF: 6 SAQA: 12	DIIBA1 NQF: 5 SAQA: 12
Introduction to research methodology (research terms and concepts e.g. qualitative; quantitative; research ethics; types of research); Environmental Considerations; Business Communication; Technology and Society.	Basic Concepts- an introduction to business information systems; Selection of appropriate hardware for a BIS; Selection of appropriate software for a BIS; Networks, telecommunications and the Internet as related to a BIS; Enterprise and functional BIS.

<b>Business Information Systems II [BIS201]</b>	<b>Business Information Systems IIIA [BISA301]</b>
DIIBA1 NQF: 6 SAQA: 8	DIIBA1 NQF: 7 SAQA: 16
<p>An introduction to acquiring and developing BIS Initiating systems development; BIS project Management; Systems Analysis; Identifying the requirements; Focus on requirements determination in a lean or agile; environment Documenting the findings; Focus on soft systems methodology; Software tools for systems analysis Case study; Systems Design Aims of Design; Constraints on system design.</p>	<p>Information systems strategy; Information systems management Managing information security Providing end user services; Ethical, legal and moral constraints on information systems.</p>
<b>Business Information Systems IIIB [BISB301]</b>	<b>Business Intelligence III [BUIN301 / BSIT301]</b>
DIIBA1 NQF: 7 SAQA: 12	ADICT1 / BINCT1 NQF: 7 SAQA: 16
<p>The Internet, Intranets, and Extranets E-commerce; Global Information Systems Enterprise Systems Management Support Systems Intelligent Information Systems; Emerging Trends, Technology and Applications.</p>	<p>Decision Making and Analytics: An Overview; Descriptive Analytics; Predictive Analytics; Prescriptive Analytics; Big Data and Future Directions for Business Analytics.</p>
<b>Communications Networks I [CNTW101]</b>	<b>Community Engagement Project [CMEP101]</b>
DIAD1;DIIAF1 NQF: 5 SAQA: 16	DIAD1;DIIAF1 NQF: 6 SAQA: 8
<p>Introduction to Networks. Networks in our Daily Lives. Communicating on a Local Network. Network Addressing; Providing Network Services; Building A Home Network. Network Security. Configuring Devices; Testing and Troubleshooting.</p>	<p>The principles of community engagement.; Working in groups (being an effective team player). Guidelines for undertaking a community engagement project.; The community as a main factor in community engagement.; Skills for community engagement. Ethical issues in community engagement.; Planning , Implementing and Evaluating a community engagement project.</p>

<b>Computer Applications in Business &amp; Finance II [CABF201]</b>	<b>Computer Organisation and Architecture II [COAR201]</b>
DIIBA1 NQF: 6 SAQA: 12	BINCTI NQF: 6 SAQA: 16
<p>Introduction to the functionalities of SMMEs and their roles in the economy; Core business processes of the financial components of SMMEs; Selection of appropriate applications to manage the business finances; Evaluating the feasibility of different business software; applications; Legal, ethical, social, economic and political issues relating to business applications; Types and uses of business reports.</p>	<p>Fundamentals of computer architecture ; Computer arithmetic; Memory system organization and architecture; Interfacing and communication; Device subsystems; Processor systems design; Organization of the CPU; Performance; Performance enhancements.</p>
<b>Cornerstone 101 [CSTN101]</b>	<b>Data Structures [DAST401]</b>
BINCTI;DIIADI;DIIBA1;HCINFI;DIIAFI NQF: 5 SAQA: 12	ADICTI NQF: 7 SAQA: 16
<p>The module content will be developed around the concept of journeys, across time, across space, and across human relationships. Each section will draw in issues of ethics, diversity and critical citizenry. The design team may later take a different metaphor or theme, but; with the same outcomes and attributes. The final section of the module will identify and integrate learning from earlier sections, and examine implications for further learning.</p>	<p>Data structures and algorithms; Basic analysis; Algorithmic strategies;</p>

<b>Database Administration [DBAD102]</b>	<b>Discrete Structures [DSTR101]</b>
HCINFI NQF: 5 SAQA: 12	BINCTI NQF: 6 SAQA: 16
The nature of data, information and knowledge is explained; The characteristic data types and data flows within a range of organisations; The choice and manipulation of the appropriate data structures to represent information; The relationships between items of data held within records, files, arrays and other appropriate data structures; The related systems of data capture, data quality control and data storage devices; Basic field, record and file formats; The principal methods of Database Organization; The characteristics and uses of applications package database and explain the criteria for the selection of a package; Advantages and disadvantages of a database approach; Physical database designs; Logical data models.	Sets, Relations, and Functions Propositional logic; Basic Logic; Proof Techniques; Basics of Counting.
<b>E-Commerce [ECMR102]</b>	<b>Entrepreneurial Spirit [ENSP101]</b>
HCINFI NQF: 5 SAQA: 12	BINCTI;DIIADI;DIIAFI;DIIBAI NQF: 6 SAQA: 12
Business processes for e-Commerce; User interface principles for e-commerce websites; Backend processes to capture data; Promotion and Marketing principles and practices; Security of payments; Basic cyber law.	Spirit of Entrepreneurship - Product visioning; Operations - Project Management; Team Management; Business and Finance - Investigating the Business Environment/Architecture; Financing; Marketing; Risk Management; Entrepreneurial Case study Analysis; ICT Enablers; Intellectual property protection; Completion of business plan.
<b>Financial Accounting I [FINA101]</b>	<b>Fundamentals of Computer Security [FCSC101]</b>
DIIBAI NQF: 5 SAQA: 12	DIIADI;DIIAFI;DIIBAI NQF: 5 SAQA: 8
Basic concepts in accounting Transactions; Ledger accounts; The accounting cycle Trial Balance; Presentation and disclosure of financial statements The adjusting and closing process; Applications of accounting systems; Receivables and payables Inventories; Cash equivalents; Non-current assets.	Basic Security Principles & Terms; System Security; Human & Physical Security User Security; Malware; Policies/Procedures & Documentation; Basic Cryptography.

<b>Graphics III [GRAP301 / GRPH301]</b>	<b>Hardware Support [HDWS102]</b>
ADICTI / BINCTI NQF: 7 SAQA: 16	HCINFI NQF: 5 SAQA: 12
<p>Basic Rendering; Geometric Modeling; Computer Animation; OpenGL basics; 2 and 3-D transformations; 3-D Transformations in OpenGL; Projection principles; Objects and simple lighting in OpenGL; Hidden line and surface removal, clipping; Surface Representations: B'ezier and Spline methods, ; Texture mapping.</p>	<p>Personal Computer Concepts; Operating System Fundamentals; Professional best practices for a PC Technician; Installing and configuring peripheral components; Installing and configuring system components; Maintaining and troubleshooting Peripheral Components; Troubleshooting system components; Installing and configuring Operating Systems; Maintaining and troubleshooting operating systems.</p>
<b>Human Computer Interaction [HCIN101]</b>	<b>Human Computer Interaction III [HCIN301 / HCPI301]</b>
DIIADI;DIIAFI NQF: 6 SAQA: 12	ADICTI / BINCTI NQF: 7 SAQA: 16
<p>Informed understanding of the human cognitive and physical capabilities to process information; Sound understanding of incorporating HCI into design of technology; Informed understanding of availability and functionality of technology; Fundamental knowledge of principles and paradigms; embodying usability of interactive systems Fundamental knowledge of methods for evaluating Designs; Ability to analyse user's behaviour; Understand the principles and paradigms embodying; Usability.</p>	<p>HCI Concepts ; Human Centered Development ; Graphical User Interface Programming ; Multimedia Systems Development ; Interactive GUI Design ; Graphics and Visualization.</p>
<b>Industry Exposure [IEXP101]</b>	<b>Info &amp; Comm. Tech Literacy &amp; Skills [ICTL101]</b>
BINCTI NQF: 7 SAQA: 12	DIIADI;DIIAFI;DIIBA I NQF: 5 SAQA: 8
<p>Students will reflect on realistic workplace; expectations to draw links with discipline knowledge; and be able to explain real aspects of the real world; setting. They will be expected to respond and; compare their workplace in ways that inform and; improve future practice. Structured learning; activities and assessments tasks that allow students; the opportunity to illustrate and critically measure; learning and to share experience for a variety of; audiences will be of importance.</p>	<p>Basics of ICTs Hardware, Software, and Users Internet Search; Word Processing; Spreadsheets; Presentations; Referencing; Security, Legal, Ethical, and Societal Issues Economics of ICTs.</p>



<b>Information Assurance and Security II [INAS201]</b>	<b>Information Management II [INFM201]</b>
BINCTI NQF: 6 SAQA: 16	BINCTI NQF: 6 SAQA: 12
Foundational Concepts in Security; Principles of Secure Design; Defensive Programming; Threats and Attacks; Network Security; Cryptography; Security Policy and Governance; Digital Forensics.	Information Management Concepts and Fundamentals; Database Query Languages; Data Organization Architecture; Data Modelling; Managing the Database Environment; Special Purpose Databases.
<b>Information Management IIA [INMA201]</b>	<b>Information Management IIB [INMB201]</b>
DIIADI;DIIBAI;DIIAFI NQF: 6 SAQA: 8	DIIADI;DIIAFI;DIIBAI NQF: 6 SAQA: 8
Database systems; The Database Approach Database Development Process Database Alternatives; Database Models; Relational Models Characteristics Database Design; Data Modelling with Entity Relationship Diagrams; Data Modelling Advanced Concepts Normalizing Database Designs; Introduction to Structured Query Language.	Advanced Structured Query Language; Implementation Alternatives; Database Management.
<b>Information Systems I [INSS101]</b>	<b>Information Systems IIA [ISYA201]</b>
DIIADI;DIIAFI NQF: 5 SAQA: 8	DIIADI;DIIAFI NQF: 6 SAQA: 8
An Overview of systems analysis and design The role of the systems analyst Investigating systems requirements; Use Cases Domain Modelling; Extending the Requirements models.	Essentials of Design and the Design Activities Designing the User and Systems Interfaces Object oriented design principles; Object oriented design: Use Case realization Database, Controls, and Security Making the system Operational.
<b>Information Systems IIB [ISYB201]</b>	<b>Information Systems IIIA [ISYA301]</b>
DIIADI;DIIAFI NQF: 6 SAQA: 8	DIIADI;DIIAFI NQF: 6 SAQA: 12
The Software life cycle models; Software Security Software Maintenance; Agile development using SCRUM as a tool History of agile methods; Philosophy of agile methods.	The Scope of Software Engineering; The Software Process and its Attendant Problems Software Life-Cycle Models; Software Quality Assurance; Current Trends in Systems Development

<b>Information Systems IIIB [ISYB301]</b>	<b>Integrative Programming and Technology III [IPRT301]</b>
DIIADI;DIIAFI NQF: 6 SAQA: 12	BINCTI NQF: 7 SAQA: 16
<p>Fundamentals of Software Testing; Ensuring Testing throughout the Software Life Cycle; Recognizing key concepts in maintenance testing Comparing the four test types; Coping with the psychology of testing; Implementing Static Analysis Techniques Leveraging Test-Design Techniques Differentiating various "specifications" Applying specification-based techniques Utilizing structure-based techniques Deploying experience-based knowledge Test Management, Structuring a test plan Interpreting a test summary report; Managing incidents, Addressing project and product risks Implementing Configuration Management (CM); Defining the functions of CM; Evaluating objectives of CM Adopting Test Support Tools.</p>	<p>Intersystem Communications; Data Mapping and Exchange; Integrative Coding; Scripting Techniques; Software Security Practices.</p>
<b>Interpersonal Communication &amp; Self [ICMS101]</b>	<b>Introduction to Computing [INCP101]</b>
BINCTI NQF: 5 SAQA: 8	BINCTI NQF: 5 SAQA: 12
<p>Fundamentals to Interpersonal Communication ; Interpersonal Communication Skills in Action; Dimensions of Interpersonal Relationships.</p>	<p>Pervasive themes in Computing; History of Computing; Computing Disciplines; Computing Application Domains; Foundations of Computing Systems; The IS function; Impact of IS and computing on organisational; structures and processes.</p>
<b>IT Logic &amp; Technology IA [ILGA101]</b>	<b>IT Logic &amp; Technology IB [ILGB101]</b>
DIIAFI NQF: 5 SAQA: 4	DIIAFI NQF: 5 SAQA: 4
<p>Computer Technology Concepts; Logic skills &amp; Problem solving techniques Pseudocode with variables and constructs Problem solving with puzzles; Critical Reasoning – logic Deductive and Inductive reasoning Problem solving using pseudocode, trace tables; Input, Process, Output Simple Algorithms Flowchart.</p>	<p>Structured algorithms; Flowcharts Trace tables; Introduction to Compiler, programming language Loops; Arrays.</p>

<b>IT Logic &amp; Technology IIA [ILGA201]</b>	<b>IT Logic &amp; Technology IIB [ILGB201]</b>
DIIAFI NQF: 5 SAQA: 6	DIIAFI NQF: 5 SAQA: 6
Introduction to Programming; Levels / generations of Language Explore different Software Packages Introduce Programming Tool Syntax – Variable; Decision constructs; Repetition constructs.	Methods; 1D arrays; Objects and classes; GUI interface; Problem Solving using a programming tool.
<b>IT Project Management [ITPM101]</b>	<b>Law for Life [LWLF101]</b>
DIIADI;DIIBA1;DIIAFI NQF: 6 SAQA: 12	BINCTI;DIIBA1 NQF: 5 SAQA: 8
Backdrop: The Science of Scrum; New Management Responsibilities The Scrum Master; Bringing Order from Chaos The Product Owner Planning a Scrum Project; Project Reporting— Keeping Everything Visible The Team; Scaling Projects Using Scrum Rules.	Introduction; Civil and criminal law; Law of insurance; Road accident fund; Law of contract; Marriage; Succession.
<b>Machine Intelligence III [MAIN301 / MCHI301]</b>	<b>Mathematics for Computing IA [MCMA101]</b>
ADICTI / BINCTI NQF: 7 SAQA: 16	BINCTI NQF: 6 SAQA: 12
Introduction to machine intelligence; Search Strategies; Knowledge Representation and Reasoning; Machine Learning; Intelligent Agents; Natural language processing; Computer vision.	Differential Calculus; Integral Calculus; Multivariate Calculus; Vector Algebra; Elementary Linear Algebra.
<b>Mathematics for Computing IB [MCMB101]</b>	<b>Me, My World, My Universe [MWMU101]</b>
BINCTI NQF: 6 SAQA: 12	DIIAFI;DIIADI;DIIBA1 NQF: 5 SAQA: 6
Overview, Discrete probability; Continuous probability; Expectation; Stochastic processes; Sampling distributions; Estimation; Hypothesis tests; Correlation and regression.	The module will start with a “refresher” on the appropriate mathematical computations and solving of simple, single context applications in the following areas of mathematics; Numbers and Operations, Functional Relationships. Space, Shape, Measurement and Data Handling Broader issues involving the quantitative literacies/reasoning will be addressed by examining; relevant/current case studies within the themes indicated above.

<b>Mobile Computing IIA [MCPA201]</b>	<b>Mobile Computing IIB [MCPB201]</b>
DIIADI;DIIAFI NQF: 6 SAQA: 8	DIIADI;DIIAFI NQF: 6 SAQA: 12
Overview of Mobile technologies and platforms Basic User Interface design; Advanced User interface Design; Working with Files and Directories Understanding Protocol Independent Multicast Technology; Mobile Internationalization Generic connection framework Text and multimedia messaging; Sending and receiving messages (binary and multipart).	Wireless Devices and Services XML and Web Services Session Initiation Protocol Responses; Multimedia; Advanced Multimedia; Security and transactions Smartcards? Really?; Testing SATSA Applications with the Emulator Basic Smartcard Communication; Smart Card Communication with Java Card RMI Generating Signatures; Managing Certificates; Cryptography.
<b>Networking [NWRK102]</b>	<b>Networks and Operating Systems II [NOPS201]</b>
HCINFI NQF: 5 SAQA: 12	BINCTI NQF: 6 SAQA: 16
Network Technologies; Installing and Managing Network Connections; Supporting Laptops and mobile Computing Devices; Supporting peripherals; Personal Computer Security Concepts and security.	Overview of Operating Systems; Operating System Principles; Concurrency; Scheduling and Dispatch; Memory Management; Security and Protection; Networked Applications; Reliable Data Delivery; Routing and Forwarding.
<b>Operating Systems [OSYS101]</b>	<b>Organisational Behaviour II [OGBH201]</b>
DIIADI;DIIAFI NQF: 5 SAQA: 12	BINCTI NQF: 5 SAQA: 12
Introduction to Operating Systems; Memory Management: Simple and Virtual Systems Processor Management; Process Management; Concurrent Processes Device Management File Management.	Introduction to Organizational Behaviour; Managing Demographic and Cultural Diversity; Understanding People at Work: Individual Differences and Perception; Individual Attitudes and Behaviours; Theories of Motivation ; Designing a Motivating Work Environment; Managing Stress and Emotions; Communication ; Managing Groups and Teams; Conflict and Negotiations; Making Decisions; Leading People Within Organizations; Power and Politics; Organizational Structure and Change Organizational Structure; Organizational Culture Building a Customer Service Culture.
<b>Parallel and Distributed Computing III [PDCO301 / PDCP301]</b>	<b>Platform Based Development [PBDE401] / Platform Based Development III [PBDV301]</b>
ADICTI / BINCTI NQF: 7 SAQA: 16	ADICTI / BINCTI NQF: 7 SAQA: 16
Parallelism fundamentals; Parallel Decomposition; Communication and Coordination; Parallel Algorithms, Analysis, and Programming; Parallel Architecture; Parallel Performance; Distributed Systems.	Introduction to Platform-based development; Web Platforms; Mobile Platforms; Game Platforms; Industrial Platforms.

<b>Programming Languages II [PRLN201]</b>	<b>Project IIIA [PRJA301]</b>
BINCTI NQF: 6 SAQA: 12	BINCTI NQF: 7 SAQA: 8
Introduction; Program Representation; Language Translation and Execution ; Syntax Analysis; Compiler Semantic Analysis; Code Generation; Runtime Systems; Static Analysis.	The project must incorporate any relevant area of emphasis either from the Computer Science or Information Technology focus area in the software engineering process of computer systems development.
<b>Project IIIB [PRJB301]</b>	<b>Project Management III [PJMN301]</b>
BINCTI NQF: 7 SAQA: 12	BINCTI NQF: 7 SAQA: 16
The project must incorporate any relevant area of emphasis either from the Computer Science or Information Technology focus area in the software engineering process of computer systems development.	Introduction to PM and IT PM; Planning; Schedule/time management; Cost management; Quality management; Human resource management Communications management; Risk management.
<b>Research skills [RESK401]</b>	<b>Skills Development IA [SKDA101]</b>
ADICTI NQF: 7 SAQA: 12	DIIAFI NQF: 5 SAQA: 3
Introduction to research; Research ethics; Information sources and retrieval; Literature review; Research process; Quantitative research design; Qualitative research design.	Academic Literacy; Information Literacy Language Skills Numeracy.
<b>Skills Development IB [SKDB101]</b>	<b>Skills Development IIA [SKDA201]</b>
DIIAFI NQF: 5 SAQA: 3	DIIAFI NQF: 5 SAQA: 5
Business English; Communication; Life Skills.	Basic Accounting Skills Accounting concepts Basic Business Skills.
<b>Skills Development IIB [SKDB201]</b>	<b>Social and Professional Issues III [SPRI301]</b>
DIIAFI NQF: 5 SAQA: 5	BINCTI NQF: 7 SAQA: 16
Business Processes; Enterprise Systems Knowledge for Business Sales processes; Purchasing processes; ERP foundation scenarios using SAP.	Social context of computing; Analytical Tools; Professional Ethics; Legal protection and personal privacy; Professional Communication; Sustainable computing.

<b>Software Development and Management [SODM401]</b>	<b>Software Development Fundamentals [SWDF101]</b>
ADICTI NQF: 7 SAQA: 16	BINCTI NQF: 5 SAQA: 12
Software Processes; Software Project Management; Tools and Environments; Requirements Engineering; Software Design; Software Construction; Software Verification Validation; Software Evolution	Algorithms and design; Fundamental programming concepts; Fundamental data structures; Development methods.
<b>Software Engineering III [SFEN301]</b>	<b>Software Support [SWSP102]</b>
BINCTI NQF: 7 SAQA: 16	HCINFI NQF: 5 SAQA: 12
Software Processes; Software Project Management; Tools and Environments; Requirements Engineering; Software Design; Software Construction; Software Verification Validation; Software Evolution.	Installing and configuring an operating system; Creating and implementing systems policies; Creating and managing partitions, file systems and fault-tolerant volumes; Supporting running applications under a windows operating system; Recognise problems related to boot processes; Viruses and malware; Determine appropriate action for troubleshooting
<b>Solutions Development [SLDV102]</b>	<b>Strategy Acquisition and Management III [SAMA301 / SAQM301]</b>
HCINFI NQF: 5 SAQA: 12	ADICTI / BINCTI NQF: 7 SAQA: 16
Structured programming techniques; Objects and Data Types; Operators: Assignment, Logic, Arithmetic, etc; Decision Structures; Selection Statements: If/Nested If/Select Case; Loops; Data validation; Validation/Error/Exception Handling: If statements; Modular programming.	Business IS/IT alignment; Strategic IS planning; Strategic knowledge management; Business exploitation of ICT; Acquiring IT resources and capabilities; IS/IT benefits management and realization; IT risk management; IT governance frameworks.
<b>Systems Analysis and Design II [SADS201]</b>	<b>Systems Fundamentals [SYSF101]</b>
BINCTI NQF: 6 SAQA: 12	BINCTI NQF: 5 SAQA: 12
Organizational context; IT-enabled organizational change; Business process management; Analysis of business requirements; IT Project Management in global context; System analysis and design methodology; Analysis and specification of system requirements; Approaches to implementation of Information Systems.	Computational Paradigms; Cross-Layer Communications; State and State Machines; Parallelism; Evaluation; Resource Allocation and Scheduling; Proximity; Virtualization and Isolation; Reliability through Redundancy; Quantitative Evaluation.

<b>Theory of ICT Professional Practice III [TIPP301]</b>	<b>Theory of Internal Auditing II [THIA201]</b>
DIIAD1;DIIAF1;DIIBA1 NQF: 6 SAQA: 12	DIIBA1 NQF: 6 SAQA: 8
Organizational structure Communication Skills; Skills of ethical analysis; Professional Ethics and Social Responsibility Elements of social analysis; Intellectual Property; Information Privacy; Responsibility of a computer professional.	Basic introduction to Internal Auditing; The role of the internal auditor; Basic audit concepts internal control Elementary systems of internal control; Evaluation of internal control system cycles internal audit; reports.
<b>Web Project [WEBP102]</b>	<b>Web Systems and Technology III [WSYT301]</b>
HCINFI NQF: 5 SAQA: 24	BINCTI NQF: 7 SAQA: 16
Problem analysis; Identification of possible solutions; Project management; Group interaction.	Web Technologies; Information Architecture; Digital Media; Web Development; Vulnerabilities.
<b>Web Technology [WBTC102]</b>	
HCINFI NQF: 5 SAQA: 12	
Internet principles; Web development tools; Using a package to create sound and animations; Security.	

8 PHASE OUT:

**BTech (Financial Information Systems) [BTFIS2]** – last intake January 2019

**BTech (Information Technology) [BTINF2]** – last intake July 2019

8.1 **Bachelor of Technology in Financial Information Systems [BTFIS2]**

SP	Module Code	Module Name	NQF Level	Exam / CA	Last Offering for module
I	RMIT101	Research Methodology	7	CA	January 2021 (PT only)
I	FNLM413	Financial Management 4 [mod 1]	7	Exam	January 2020 (PT only)
I	FNMT101	Functional Management	7	Exam	January 2020 (PT only)
I	FACC412	Financial Accounting 4 [mod 1]	7	Exam	January 2020 (PT only)
I	FISY402	Financial Information Systems 4	7	CA	January 2020 (PT only)
I	RMIT121	Research Methodology (if RMT1101 < 50%)	7	CA	<b>phased out</b>
I	FNLM423	Financial Management 4 [mod 2]	7	Exam	July 2020 (PT only)
I	AMCS201	Advanced Management Communication Skills	7	Exam	July 2020 (PT only)
I	FACC422	Financial Accounting 4 [mod 2]	7	Exam	July 2020 (PT only)
I	INLW101	Industrial Law	7	Exam	<b>phased out</b>



## 8.2 Bachelor of Technology in Information Technology [BTINF2]

A student is required to pass 10 modules (Project 4 counts as 2 modules) in order to graduate with a BTech (Information Technology).

SP	Module Code	Module Name	NQF Level	Exam / CA	Prerequisites [P], Co-Requisites [C], Exposure [E]	Last Offering for module
I	DSFW401	Development Software 4	7	Exam		<b>phased out</b>
I	DBSY404	Database Systems 4	7	Exam		January 2021 PT only
I	OSYS404	Operating Systems 4	7	CA		January 2021 PT only
I	RMIT101	Research Methodology	7	CA		January 2021 PT only
I	INTM401	Information & Technology Management 4	7	Exam		January 2021 PT only
I	ADSW401	Advanced Development Software 4	7	Exam	Development Software 4 [E]	January 2020 PT only
I	SWED401	Software Engineering & Design 4	7	Exam		July 2021 PT only
I	USRI401	User Interfaces 4	7	Exam		July 2020 PT only
I	RMIT121	Research Methodology (if RMT1101 < 50%)	7	CA		<b>phased out</b>
I	INSC401	Information Security	7	Exam		July 2021 PT only
I	NETW404	Networks 4	7	Exam		July 2021 PT only
I	PRJT402	Projects 4	7	CA	RMIT101 > 60%	<b>phased out</b>

Note: The Department may choose not to offer a module if the registration numbers are too low.

<b>ADVANCED DEVELOPMENT SOFTWARE 4 [ADSW401]</b>	<b>ADVANCED MANAGEMENT COMMUNICATION SKILLS 2 [AMCS201]</b>
BTINF2 NQF: 7 SAPSE Code: 60704606	BTFIS2 NQF: 7 SAPSE Code: 059901222
Theory: Advanced Java Programming Data Structures Java; Design Patterns and/or Graphical Applications Practical: Practical work shall consist of tutorials, assignments and a group project.	Theory: Problem Solving; Conflict Management and Leadership Negotiation; Organisational Communication; Job Application, Interviews, Business letter writing, Memos Motivation and Persuasion; Advertisement; Meeting Procedures and Minutes of a meeting; Practical: Power Point Presentations; Oral Presentations
<b>DATABASE SYSTEMS 4 [DBSY404]</b>	<b>DEVELOPMENT SOFTWARE 4 [DSFW401]</b>
BTINF2 NQF: 7 SAPSE Code: 60503306	BTINF2 NQF: 7 SAPSE Code: 60703706
Theory: Database Background; The relational model and languages; Database analysis and design Methodology; Selected database issues Business Intelligence. Practical: Practical work shall consist of tutorials, assignments and a group project.	Theory: Advanced Data Structures; Advanced Programming Techniques with Java programming Practical: Practical work shall consist of tutorials and assignments
<b>FINANCIAL INFORMATION SYSTEMS IV [FISY402]</b>	<b>FINANCIAL MANAGEMENT IV Module 1 [FNLM413]</b>
BTFIS2 NQF: 7 SAPSE Code: 060504006 ANNUAL module	BTFIS2 NQF: 7 SAPSE Code: 040923106
Management Information Systems. Concepts of Enterprise resource planning. Using models and frameworks. Complete a literature review research assignment.	The role and environment of financial management. Time value of money. Risk and return. Valuation of capital assets (bonds and shares) Dividend Policy. Analysis and interpretation of financial statements.
<b>FINANCIAL MANAGEMENT IV Module 2 [FNLM423]</b>	<b>FUNCTIONAL MANAGEMENT [FNMT101]</b>
BTFIS2 NQF: 7 SAPSE Code: 040923106	BTFIS2 NQF: 7 SAPSE Code: 040926212
Cost of Capital, Capital Budgeting, Sources of Finance. Working Capital Management; Mergers and Take-overs International managerial finance	Managers and Management. The Historical Roots of Contemporary Management. The Management Environment Foundations of Planning Foundations of Decision-Making Basic Organization Designs. Managing Change, Stress, and Innovation Motivating and Rewarding Employees Leadership and Trust. Communication and Interpersonal Skills Foundations of control.
<b>INDUSTRIAL LAW [INLW101]</b>	<b>INFORMATION AND TECHNOLOGY MANAGEMENT 4 [INTM401]</b>
BTFIS2 NQF: 7 SAPSE Code: 130306712	BTINF2 NQF: 7 SAPSE Code: 060207106
Intellectual Property Law; Labour Law; Computer-related Law;	Theory: Managers and Management; The Historical Roots of Contemporary Management. The Management Environment Foundations of Planning Foundations of Decision-Making Basic Organization Designs. Managing Change, Stress, and Innovation. Motivating and Rewarding Employees Leadership and Trust. Communication and Interpersonal Skills Foundations of control.

<b>INFORMATION SECURITY 4 [INSC401]</b>	<b>NETWORKS 4 [NETW404]</b>
BTINF2 NQF: 7 SAPSE Code: 60705306	BTINF2 NQF: 7 SAPSE Code: 60301906
Theory: Data Encryption; Internet Security Access Control Software security; Security policies Legal issues; Practical: Practical work shall consist of tutorials and assignments.	Theory: Top-down approach to Computer Networking. (featuring the Internet) Advanced topology and design issues relating to TCP and UDP. Network Protocols (HTTP, FTP, SMTP, DNS) In-depth study of the five Internet layers, viz. Application, Transport, Network, Link and Physical. Advanced network issues: Delay, Congestion, Reliability, Routing (algorithms), Security, Wireless and mobile networks, and network management. Practical: One project to cover the practical aspects of networking.
<b>OPERATING SYSTEMS 4 [OSYS404]</b>	<b>PROJECT 4 [PRJT402]</b>
BTINF2 NQF: 7 SAPSE Code: 60801506	BTINF2 NQF: 7 SAPSE Code: 69900206
Computer System & Operating System Overview; Process Description and Control Threads, SMP and Micro Kernels Concurrency: Deadlock and Starvation Memory Management & Virtual Memory Uni-processor Scheduling.	Theory: Theories and concepts relevant to the project are covered in the Research Methodology course (229900012) Practical: Practical work shall consist of the design and execution of a research project with the following research phases: proposal development, Implementation of the proposal, write up of findings, including literature review, data collection, analysis and discussion.
<b>RESEARCH METHODOLOGY [RMIT101]</b>	<b>SOFTWARE ENGINEERING AND DESIGN 4 [SWED401]</b>
BTINF2 NQF: 7 SAPSE Code: 229900012	BTINF2 NQF: 7 SAPSE Code: 60705106
Research methods aim to equip the student with the basic skills to do academic research. It is a compulsory prerequisite for MTECH studies. Topics such as research. approaches, methods and data collection methods are covered. The assessment of the subject consists of tests, assignments and a full proposal.	Intro to Software Engineering Revision of classic process models Agile process models. IT project management frameworks. Software quality frameworks Requirements engineering. Systems methods in software analysis. Cost estimation. Software architectural design Software team organization.
<b>USER INTERFACES 4 [USRI401]</b>	
BTINF2 NQF: 7 SAPSE Code: 60703206	
Theory: Interface standardization Computer graphics Computer user interfaces Input/output peripherals Practical: work shall consist of self-study assignments.	