(Note: The final interpretation of all regulations in this Yearbook for the Faculty of Computing and Informatics shall be vested in Council).
NOTE

The *Yearbook for the Faculty of Computing and Informatics* is valid for 2019 only. Curricula and syllabi may be amended for 2020.

It is obtainable free of charge from:

The Registrar
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Windhoek
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**Telephone:** (+264-61) 207 2008 / 2118
**Fax:** (+264-61) 207 9113
**Website:** www.nust.na
**E-mail:** registrar@nust.na

Although the information contained in this Yearbook has been compiled as accurately as possible, Council and Senate accept no responsibility for any errors and omissions, which may occur. The University retains the right to amend regulations or conditions without prior notice.

Due to the rapidly changing external environment that many programmes operate in, and the University’s desire to remain constantly relevant in its offerings, some programmes may be significantly amended after publication of this Yearbook. Please consult our website for the latest versions of our curricula, syllabi and academic regulations.

The fact that particulars of a specific programme, field of study, subject, or course have been included in this Yearbook does not necessarily mean that such a programme, field of study, subject, or course will be offered in the academic year 2019.

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207 2457

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Call Office 229405/234193/233100

Ladies: Höpker
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House Committee 207 2130

NB: The international code in all numbers is +264-61
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PC Support Officer
Lab Technician

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Acting Deputy Head of Department (System Adm. and Networking Tracks)
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Code 23

Head of Department
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Deputy Head of Department

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: Eliazer Mbaeva, B.IT Hons.: Business Comp. (PoN)
: Nkululeko Mthembo, BBA, Comp. & Mgmt. IS (Solusi)
: Helena Nahum, M.Sc.: Comp. Sc. (Joeusuu University, Finland), B.Sc.: Comp. Sci. (UNAM)
: Irja Shaanika, M.: Informatics (NUST), B. IT Hons.: Bus Comp. (PoN), B. IT Bus Comp. (PoN)
UNDERGRADUATE PROGRAMMES

QUALIFICATIONS OFFERED

Bachelor of Computer Science (Systems Administration, Communication Networks or Software Development) (Phased in since 2014) 07BACS
Bachelor of Computer Science in Cyber Security (Phased in since 2016) 07BCCS
Bachelor of Informatics (Phased in since 2014) 07BAIF

Description

Computer Science and Informatics refers to the skills and knowledge needed to design applications and operate computer systems. Computer Science and Informatics studies at the Namibia University of Science and Technology offer different areas of specialisations as well as different exit levels.

Bachelor of Information Technology: for those who successfully completed all requirements for the three-year degree of the phasing out programmes.

Bachelor of Computer Science or Bachelor of Informatics: for those who successfully completed all requirements for the three-year degree of the phasing in (2014) programme.

Special Faculty Assessment Regulations

There are situations where assessment of an individual course provided by other Faculties will supersede assessment regulations. This is reflected in the course documentation.

Course Evaluation for all courses offered by the Faculty utilising in-course assessment and a Theory Paper and a Practical Paper

• An in-course mark is determined by continuous evaluation made up of tests and practicals during the semester.
• Students must have satisfactorily completed to the minimum standard (40 % overall) all practicals and tests during the year to be admitted to the final examination. E.g. a class mark of 40 %.

Final Examination consists of two papers: Theory and Practical

• A sub-minimum of 40 % must be obtained in each paper. The combined examination mark must be at least 50 % overall.
• In-course mark and examination mark shall be used jointly to determine the final mark in the ratio of 50 % (semester mark) to 50 % (examination mark).

Course Evaluation for all courses offered by the Faculty utilising in-course assessment and a Theory Paper

• An in-course mark is determined by continuous evaluation made up of tests and assignments during the semester.
• Students must have satisfactorily completed to the minimum standard (40 % overall) all assignments and tests during the year to be admitted to the final examination.

Final examination consists of one Theory paper

• A sub-minimum of 40 % must be obtained in the examination.
• In-course mark and examination mark shall be used jointly to determine the final mark in the ratio of 50 % semester mark to 50 % examination mark.

Course Evaluation for all courses offered by the Faculty using Continuous Evaluation only

• The semester mark is determined by continuous evaluation made up of tests and assignments during the year.
• The course mark is the final mark.
• Students must obtain a 50 % mark to pass the course.
• Supplementary tests and extensions will be defined within the individual course outline.

NB: For all assessments the Faculty plagiarism policy applies.
Faculty of Computing and Informatics - Yearbook 2019

DEPARTMENT OF COMPUTER SCIENCE

BACHELOR OF COMPUTER SCIENCE (SYSTEMS ADMINISTRATION, COMMUNICATION NETWORKS OR SOFTWARE DEVELOPMENT)

Code 22

NQF Level: 7

NQF Credits: 365

NQF Qualification ID: Q0513

Description

The Bachelor of Computer Science aims at providing educational opportunities for students who are interested in and motivated to work as Computer Scientists, Software Developers, Systems Administrators or Networks Specialists. This programme is purposefully designed to provide skillful, competent and motivated graduates for the increasing and numerous challenging tasks of Computing and Information Technology (CIT) in the country and the Khomas region at large. Students will have the opportunity to develop the required cognitive/intellectual skills, practical as well as key transferable skills, and apply these to address/solve CIT related problems/challenges in the context of an organisation, or the community. Overall, this degree specifically aims at:

- Providing students with a sound foundation in the fundamental concepts, theories, frameworks and problem-solving techniques of CIT;
- Developing the ability of students to analyse information from a wide range of sources;
- Equipping students with the requisite skills to work effectively as individuals and as members of a team;
- Enabling students to communicate effectively in the workplace.

The programme intends to provide a diverse range of skills and competencies that are both discipline-specific and job-related. The curriculum is structured to facilitate specialisation in the areas of Systems Administration, Communication Networks and Software Development. The programme also intends to facilitate the development of highly generic cognitive and intellectual skills that would enable graduates to apply their knowledge and learnt competencies to the practices of CIT taking into consideration international generally accepted practices.

Admission Requirements

Candidates may be considered for admission to the Bachelor of Computer Science if they meet the University’s General Admission Requirements (GI2.1 in Part 1 of the Yearbook). In addition, students must have a minimum D-symbol in NSSC Mathematics at Ordinary Level, or equivalent.

Articulation Arrangements

Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. The maximum credit that can be granted is 50 % of the credits for a qualification.

Upon successful completion of the Bachelor of Computer Science, students will ordinarily be able to pursue further studies in the same, or a related cognate area of learning, at NQF Level 8.

CURRICULUM

Year 1

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>NQF Levels</th>
<th>NQF Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSC410S</td>
<td>Basic Science</td>
<td>None</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>MIT112S</td>
<td>Mathematics for IT 1A</td>
<td>None</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>PRG510S</td>
<td>Programming 1</td>
<td>None</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>PLU411S</td>
<td>Principles of English Language Use</td>
<td>None</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>MNS511S</td>
<td>Management Information Systems</td>
<td>None</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>COA511S</td>
<td>Computer Organisation and Architecture</td>
<td>None</td>
<td>5</td>
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</tbody>
</table>

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>NQF Levels</th>
<th>NQF Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OOP521S</td>
<td>Object Oriented Programming</td>
<td>Programming 1</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>ICT521S</td>
<td>Information Competence</td>
<td>None</td>
<td>5</td>
<td>10</td>
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<tr>
<td>MIT122S</td>
<td>Mathematics for IT 1B</td>
<td>Mathematics for IT 1A</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>WDF521S</td>
<td>Web Development Fundamentals</td>
<td>None</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>EPR511S</td>
<td>English in Practice</td>
<td>Principles of English Language Use/ Language in Practice A, or Module 2, or Exemption</td>
<td>5</td>
<td>NCB</td>
</tr>
<tr>
<td>OSN521S</td>
<td>Intro. to Operating Systems &amp; Networks</td>
<td>Computer Organisation and Architecture</td>
<td>5</td>
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</tbody>
</table>
### Year 2

#### Semester 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAP511S</td>
<td>English for Academic Purposes</td>
<td>English in Practice, or Language in Practice B, or Module 3, or Exemption</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>ISS610S</td>
<td>IT Systems Security</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>DSA610S</td>
<td>Data Structures and Algorithms</td>
<td>None</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>DBF510S</td>
<td>Database Fundamentals</td>
<td>None</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>ICNS511S</td>
<td>Introduction to Computer Networking</td>
<td>Introduction to Operating Systems and Networks</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>ASP610S</td>
<td>Applied Statistics &amp; Probability for IT</td>
<td>Mathematics for IT 1B</td>
<td>9</td>
<td>14</td>
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</table>

#### Semester 4

**ONE of the following Strands depending on specialisation:**

**SYSTEMS ADMINISTRATION STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPS621S</td>
<td>Operating Systems</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>WTN620S</td>
<td>Web Technologies</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>SAD622S</td>
<td>Systems Administration</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>DTS620S</td>
<td>Distributed Systems</td>
<td>Introduction to Computer Networking</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>SAU620S</td>
<td>Systems Audit</td>
<td>IT Systems Security</td>
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</tbody>
</table>

**COMMUNICATION NETWORKS STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPS621S</td>
<td>Operating Systems</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>CMN620S</td>
<td>Communication Networks</td>
<td>Introduction to Computer Networking</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>SAD622S</td>
<td>Systems Administration</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>NWS620S</td>
<td>Network Security</td>
<td>IT Systems Security; and Introduction to Computer Networking</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>WLT620S</td>
<td>Wireless Technologies</td>
<td>Introduction to Computer Networking</td>
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</table>

**SOFTWARE DEVELOPMENT STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPS621S</td>
<td>Operating Systems</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>DSP620S</td>
<td>Distributed Systems Programming</td>
<td>Object Oriented Programming</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>PRG620S</td>
<td>Programming 2</td>
<td>Programming 1</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>SEH620S</td>
<td>Software Engineering 1 and HCI</td>
<td>Web Development Fundamentals</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>DPT621S</td>
<td>Database Programming and Techniques</td>
<td>Database Fundamentals</td>
<td>6</td>
<td>12</td>
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</tbody>
</table>

### Year 3

#### Semester 5

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS610S</td>
<td>Contemporary Issues</td>
<td>None</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

**Plus ONE of the following Strands depending on specialisation, and based on choice made in Semester 4:**

**SYSTEMS ADMINISTRATION STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICE712S</td>
<td>Innovation, Creativity &amp; Entrepreneurship</td>
<td>None</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>IIS711S</td>
<td>Internet and Intranet Systems Administration</td>
<td>Systems Administration</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>CFR712S</td>
<td>Computer Forensics</td>
<td>Systems Audit</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>SVT710S</td>
<td>Systems Virtualisation</td>
<td>Operating Systems</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

**COMMUNICATION NETWORKS STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICE712S</td>
<td>Innovation, Creativity &amp; Entrepreneurship</td>
<td>None</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>IWT711S</td>
<td>Internet and WAN Telecommunication</td>
<td>Communication Networks</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>NDP710S</td>
<td>Network Design and Performance</td>
<td>Communication Networks</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>SVT710S</td>
<td>Systems Virtualisation</td>
<td>Operating Systems</td>
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<td>12</td>
</tr>
</tbody>
</table>

**SOFTWARE DEVELOPMENT STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICE712S</td>
<td>Innovation, Creativity &amp; Entrepreneurship</td>
<td>None</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>AIG710S</td>
<td>Artificial Intelligence and Computer</td>
<td>Applied Statistics &amp; Graphics Probability for IT; and Data Structures and Algorithms</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Duration</td>
<td>Credits</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>DWM710S</td>
<td>Data and Web Mining</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APG710S</td>
<td>Advanced Programming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Database Programming and Techniques</td>
<td>7</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Structures and Algorithms</td>
<td>7</td>
<td>12</td>
<td></td>
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</tbody>
</table>

**Year 3**

**Semester 6**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Duration</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIL710S</td>
<td>Work Integrated Learning (WIL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All semester 4 courses; and a maximum of 2 outstanding semester 5 courses</td>
<td>7</td>
<td>48</td>
</tr>
</tbody>
</table>

**Plus ONE of the following Strands depending on specialisation, and based on choice made in previous Semesters:**

**SYSTEMS ADMINISTRATION AND COMMUNICATION NETWORKS STRANDS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Duration</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTM721S</td>
<td>Project Management</td>
<td>None</td>
<td>7</td>
</tr>
<tr>
<td>DBA721S</td>
<td>Database Administration</td>
<td>Database Fundamentals; and Systems Administration</td>
<td>7</td>
</tr>
</tbody>
</table>

**SOFTWARE DEVELOPMENT STRAND**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Duration</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTM721S</td>
<td>Project Management</td>
<td>None</td>
<td>7</td>
</tr>
<tr>
<td>SEN721S</td>
<td>Software Engineering 2</td>
<td>Software Engineering 1 and HCI</td>
<td>7</td>
</tr>
</tbody>
</table>
BACHELOR OF COMPUTER SCIENCE IN CYBER SECURITY

NQF Level: 7  NQF Credits: 372  NQF Qualification ID: Q0656

Description
The Bachelor of Computer Science in Cyber Security aims at providing educational opportunities for students who are interested in and motivated to work as Cyber Security Professionals. Cyber Security is a computing discipline that deals with digital information assurance and its security. This programme is purposefully designed to provide skilled, competent and motivated graduates for the increasing and numerous challenging tasks of Computing and Information Assurance and Security (IAS) in the country and the region at large. Students will have the opportunity to develop the required cognitive/intellectual skills, practical as well as key transferable skills, and apply these to address/solve Information Assurance and Security related problems/challenges in the context of an organisation, a country or individual end-user.

Admission Requirements
Candidates may be considered for admission to the Bachelor of Computer Science in Cyber Security if they meet the University’s General Admission Requirements (GI2.1 in Part 1 of the NUST Yearbook). In addition, students must have a minimum D-symbol in Grade 12/NSSC Mathematics at Ordinary Level, or equivalent.

Articulation Arrangements
Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50% of the credits for a qualification.

Upon successful completion of the Bachelor of Computer Science in Cyber Security, students will ordinarily be able to pursue further studies in the same, or a related cognate area of learning, at NQF Level 8.

Mode of Delivery
The programme will be delivered on the full-time and part-time modes in accordance with the University’s rules. The e-learning mode will only be considered after the programme is deemed to have reached a certain level of maturity.

Requirements for Qualification Award
The Bachelor of Computer Science in Cyber Security degree will be awarded to students credited with a minimum of 372 NQF credits, and who have met the detailed requirements as set out below. In addition, students should meet the administrative and financial requirements as spelt out in Part 1 of the NUST Yearbook.

Teaching and Learning Strategies
Teaching and learning strategies are described in the syllabus outlines for the different courses. The requirements of the NQF underline the acquisition of cognitive skills and competencies exceeding the knowledge and understanding of subject-specific knowledge items and professional/technical competencies. Thus, the qualification focuses on the engagement of students in an interactive learning process in order to provide for the development of generic cognitive and intellectual skills, key transferable skills, and, as the case may be, subject-specific and/or professional/technical practical skills.

This learning process will be facilitated both in and outside the classroom, requiring specific tasks to be carried out by the student, including the following:

- Formal weekly face-to-face (interactive) contact and presentation using PowerPoint slides, smart boards, whiteboards and handouts;
- Formal weekly laboratory exercises and practice;
- Student portfolios;
- Formal tutorial and supervised self-study sessions;
- Self-learning through online links;
- Promotion of team learning through group projects;
- Individual and home assignments;
- Use of e-learning platform (including emails and blog/- forum);
- Discussion and student presentations (assignment results and other activities);
- Guest lecturers with open discussion, when appropriate;
- Webinar/ Online conferencing/ excursion;
- Computer/- Web-based simulation;
- Seminars.
Work Integrated Learning (WIL)
This programme also includes a component of Work Integrated Learning (WIL) which integrates work experiences with learning in a way traditional education cannot do. It provides students with opportunities to:
- Execute tasks related to Cyber Security at the workplace;
- Network with professionals and build relationships that can help students in their future endeavours;
- Have access to companies for full-time positions after graduation once good rapport has been established between the students and the companies;
- Interact with people from diverse backgrounds and develop interpersonal skills that are not possible in a classroom environment.

The three courses that are done in the same semester as WIL, will be taught before the students go for WIL, and will be done through an accelerated teaching approach, and assessed using “Diversified Continuous Assessment” mode; some of the assessments will be carried out while the students are busy with their WIL.

Transition Arrangements
This is a new programme which does not replace any existing programme(s). Transition arrangements are, therefore, not applicable.

CURRICULUM

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Semester 1</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>NQF Level</th>
<th>NQF Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BSC410S</td>
<td>Basic Science</td>
<td>None</td>
<td>4</td>
<td>8</td>
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<tr>
<td></td>
<td>MIT112S</td>
<td>Mathematics for IT 1A</td>
<td>None</td>
<td>5</td>
<td>10</td>
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<tr>
<td></td>
<td>PRG510S</td>
<td>Programming 1</td>
<td>None</td>
<td>5</td>
<td>10</td>
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<td></td>
<td>PLU411S</td>
<td>Principles of English Language Use</td>
<td>None</td>
<td>4</td>
<td>NCB</td>
<td></td>
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<tr>
<td></td>
<td>IIS511S</td>
<td>Introduction to Information Security</td>
<td>None</td>
<td>5</td>
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<tr>
<td></td>
<td>COA511S</td>
<td>Computer Organisation and Architecture</td>
<td>None</td>
<td>5</td>
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<table>
<thead>
<tr>
<th>Year 2</th>
<th>Semester 3</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>NQF Level</th>
<th>NQF Credits</th>
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<tbody>
<tr>
<td></td>
<td>EAP511S</td>
<td>English for Academic Purposes</td>
<td>English in Practice, or Language in Practice B or Module 3, or Exemption</td>
<td>5</td>
<td>14</td>
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</tr>
<tr>
<td></td>
<td>ISS610S</td>
<td>IT Systems Security</td>
<td>Introduction to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
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</tr>
<tr>
<td></td>
<td>DSA610S</td>
<td>Data Structures and Algorithms</td>
<td>None</td>
<td>6</td>
<td>12</td>
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<tr>
<td></td>
<td>DBF510S</td>
<td>Database Fundamentals</td>
<td>None</td>
<td>5</td>
<td>10</td>
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<tr>
<td></td>
<td>ICNS511S</td>
<td>Intro. to Computer Networking</td>
<td>Introduction to Operating Systems and Networks</td>
<td>5</td>
<td>10</td>
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<tr>
<td></td>
<td>ASP610S</td>
<td>Applied Statistics &amp; Probability for IT</td>
<td>Mathematics for IT 1B</td>
<td>6</td>
<td>14</td>
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<tr>
<th>Semester 4</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>NQF Level</th>
<th>NQF Credits</th>
</tr>
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<tbody>
<tr>
<td>WTN620S</td>
<td>Web Technologies</td>
<td>Intro. to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>SAD622S</td>
<td>Systems Administration</td>
<td>Intro. to Operating Systems and Networks</td>
<td>6</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>CMN620S</td>
<td>Communication Networks</td>
<td>Intro. to Computer Networking</td>
<td>6</td>
<td>12</td>
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<tr>
<td>ITC621S</td>
<td>Introduction to Cryptography</td>
<td>None</td>
<td>6</td>
<td>12</td>
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<tr>
<td>WLT620S</td>
<td>Wireless Technologies</td>
<td>Introduction to Computer Networking</td>
<td>6</td>
<td>12</td>
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<tr>
<td>DSP620S</td>
<td>Distributed Systems Programming</td>
<td>Object Oriented Programming</td>
<td>6</td>
<td>12</td>
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<tr>
<td>Year 3</td>
<td>Semester 5</td>
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<tr>
<td>NWS620S</td>
<td>Network Security</td>
<td>IT Systems Security; and Introduction to Computer Networking</td>
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</tr>
<tr>
<td>DFC711S</td>
<td>Digital Forensics 1 – Forensics Computing</td>
<td>Introduction to Cryptography</td>
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<tr>
<td>CIS610S</td>
<td>Contemporary Issues</td>
<td>None</td>
<td></td>
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<tr>
<td>IWT711S</td>
<td>Internet and WAN Telecommunication</td>
<td>Communication Networks</td>
<td></td>
<td></td>
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<tr>
<td>OPS621S</td>
<td>Operating Systems</td>
<td>Introduction to Operating Systems</td>
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<table>
<thead>
<tr>
<th>Semester 6</th>
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<tbody>
<tr>
<td>WCS721S</td>
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<tr>
<td>CIP721S</td>
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<tr>
<td>DFC721S</td>
</tr>
<tr>
<td>IAR721S</td>
</tr>
</tbody>
</table>
DEPARTMENT OF INFORMATICS

QUALIFICATIONS OFFERED
Bachelor of Informatics 07BAIF

BACHELOR OF INFORMATICS (Phased in 2014) 07BAIF

NQF Level: 7  NQF Credits: 375  NQF Qualification ID: Q0512

Description
The Bachelor of Informatics aims at providing educational opportunities for students who are interested in and motivated to work as Informatics Specialists in Business Computing, Information Systems or related practices. This programme is purposefully designed to provide skillful, competent and motivated graduates for the increasing and numerous challenging tasks of Business Computing and Informatics in the country and the region at large. Students will have the opportunity to develop the required cognitive/intellectual skills, practical as well as key transferable skills, and apply these in order to address/solve Computing and Informatics (CI) problems/challenges in the context of an organisation.

Overall, this programme aims at:
• Providing students with a sound foundation in the fundamental concepts, theories and frameworks of Business Computing and Informatics;
• Developing the ability of students to analyse information from a wide range of sources;
• Equipping students with the requisite skills to work effectively as individuals and as members of a team;
• Enabling students to communicate effectively in the workplace.

The programme intends to provide a diverse range of skills and competencies that are both discipline-specific and job-related. The programme also intends to facilitate the development of highly generic cognitive and intellectual skills that would enable graduates to apply their knowledge and learnt competencies to the practices of Business Computing and Informatics, taking into consideration international generally accepted practices.

Admission Requirements
Candidates may be considered for admission to the Bachelor of Informatics if they meet the University’s General Admission Requirements (GI2.1 in Part 1 of the Yearbook). In addition, students must have a minimum D-symbol in NSSC Mathematics at Ordinary Level, or equivalent.

Articulation Arrangements
Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. Maximum credit that can be granted is 50 % of the credit for a qualification.

Upon successful completion of the Bachelor of Informatics, students will ordinarily be able to pursue further studies in Informatics, or a related cognate area of learning, at NQF Level 8.

CURRICULUM

Year 1
Semester 1
Course Code  Course Title  Prerequisites  NQF Level  NQF Credits
BSC410S  Basic Science  None  4  8
MIT112S  Mathematics for IT 1A  None  5  10
PRG510S  Programming 1  None  5  10
PLU411S  Principles of English Language Use  None  4  NCB
MNS511S  Management Information Systems  None  5  10
COA511S  Computer Organisation and Architecture  None  5  10

Semester 2
Course Code  Course Title  Prerequisites  NQF Level  NQF Credits
OOP521S  Object Oriented Programming  Programming 1  5  10
ICT521S  Information Competence  None  5  10
MIT122S  Mathematics for IT 1B  Mathematics for IT 1A  5  10
WDFS21S  Web Development Fundamentals  None  5  10
EPR511S English in Practice Principles of English Language Use/  
Language in Practice, or Language in Practice A, or Module 2, or Exemption 5  NCN

OSN521S Introduction to Operating Systems and Networks Computer Organisation and Architecture 5  10

Year 2
Semester 3
EAP511S English for Academic Purposes English in Practice, or Language in Practice B, or Module 3, or Exemption 5  14
ISS610S IT Systems Security Intro. to Operating Systems and Networks 6  12
DSA610S Data Structures and Algorithms None 6  12
DBF510S Database Fundamentals None 5  10
ICN511S Introduction to Computer Networking Intro. to Operating Systems and Networks 5  10
ASP610S Applied Statistics & Probability for IT Mathematics for IT 1B 6  14

Semester 4
SEH620S Software Engineering 1 and HCI Web Dev. Fundamentals 6  12
DPT621S Database Programming and Techniques Database Fundamentals 6  12
HIT620S Health Information Systems & Technology None 6  12
BAP620S Business Analysis & Process Management Management Information Systems 6  12
BAI620S Business Accounting for Informatics None 6  12
EWQ621S Enterprise Web Application Development Object Oriented Programming 7  12

Year 3
Semester 5
IME511S Introduction to Marketing and its Environment None 5  10
MMA710S Multimedia Applications None 7  12
CSH710S Computer Systems for Healthcare Services Business Analysis & Process Mgmt. 7  12
CIS610S Contemporary Issues None 6  12
ICE712S Innovation, Creativity & Entrepreneurship None 7  15

Semester 6
WIL710S Work Integrated Learning (WIL) All courses up to semester 4 and a maximum of 2 outstanding semester 5 courses. 7  48
ERP720S Enterprise Resource Planning Systems Management Information Systems 7  12
PTM721S Project Management None 7  12

Transition Arrangements
The Bachelor of Information Technology in Business Computing (old curriculum) will be phased out systematically until 2018 with minimal disruption to existing students’ learning progression. The last intake of 1st year students for the Bachelor of Information Technology in Business Computing (old curriculum) was in January 2013.

Students who were registered in 2013 for the 1st year of the Bachelor of Information Technology in Business Computing (old curriculum), and who failed more than 50% of the courses at the end of 2013, will be required to change their registration to the Bachelor of Informatics (new curriculum) and will be granted credits on a course-by-course basis in accordance with the information in Table 1 below.

The Bachelor of Informatics (new curriculum), took effect from January 2014 and will be completely phased in by 2016. Courses will only be offered based on the syllabi of new/revised courses in 2014 (1st year), 2015 (2nd year) and 2016 (3rd year). Students who fail any of the courses of the Bachelor of Information Technology in Business Computing (old curriculum) will be required to repeat such failed courses based on the syllabi of new/revised corresponding courses. Please refer to Table 2, below, for detailed information on the new/revised corresponding courses to be done if courses in the old curriculum are failed.

The deadline for complete phasing out of the Bachelor of Information Technology in Business Computing (old curriculum) is 2018 after which students must automatically switch to the Bachelor of Informatics (new curriculum).
POSTGRADUATE PROGRAMMES

QUALIFICATIONS OFFERED

Bachelor of Informatics Honours (Web Informatics) 08BIFH
Bachelor of Informatics Honours (Business Informatics) 08BIHB
Bachelor of Computer Science Honours (Communication Networks) 08BCHC
Bachelor of Computer Science Honours (Software Development) 08BCSH
Bachelor of Computer Science Honours (Mobile Development) 08BCHM
Bachelor of Computer Science Honours (Information Security) 08BHIS
Bachelor of Computer Science Honours (Digital Forensics) 08BHDF
Post Graduate Certificate in Informatics (Information Systems Audit) 08PGCI
Post Graduate Certificate in ICT Policy and Regulations 22PCIT
Master of Informatics 09MINF
Master of Computer Science 09MCSC
Doctor of Philosophy (PhD) in Informatics 10PDIN
Doctor of Philosophy (PhD) in Computer Science 10PDCS

DEPARTMENT OF COMPUTER SCIENCE

Code 22

BACHELOR OF COMPUTER SCIENCE HONOURS (COMMUNICATION NETWORKS) 08BCHC
BACHELOR OF COMPUTER SCIENCE HONOURS (SOFTWARE DEVELOPMENT) 08BCSH
BACHELOR OF COMPUTER SCIENCE HONOURS (MOBILE DEVELOPMENT) 08BCHM
BACHELOR OF COMPUTER SCIENCE HONOURS (INFORMATION SECURITY) 08BHIS
BACHELOR OF COMPUTER SCIENCE HONOURS (DIGITAL FORENSICS) 08BHDF

Description

The Bachelor of Computer Science Honours is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and skills of students in the main cognate area of learning, as well as developing their capacity to conduct supervised research of an applied nature. The programme is purposefully designed to expose students to advanced concepts, theories, tools, and methods of Computer Science. In this context, specific emphasis is placed on internationally accepted general standards and practices, as well as key attributes that would enable graduates to assume supervisory/middle management and applied research positions in the Computing industry, academia, and in the public sector in general.

The curriculum is structured to facilitate specialisation in the areas of Communication Networks, Software Development, and Mobile Development.

Admission Requirements

Applicants may be considered for admission to this programme if they have a Bachelor’s degree in Computer Science, or a Bachelor of Information Technology from the Namibia University of Science and Technology, or an equivalent qualification at NQF Level 7 from a recognised institution, worth at least 360 credits. Additional admission criteria may apply as set at the discretion of the Department.

Applicants are required to submit the following documents with their applications:

- A professional resume, highlighting practical and professional Computing and IT experience, if applicable;
- A written proposal/motivation for undertaking further studies;
- A transcript of the undergraduate study.

Articulation Requirements

Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. The maximum credit that can be granted is 50 % of the credits for a qualification.

Upon successful completion of the Bachelor of Computer Science Honours, students will ordinarily be able to pursue further studies in the same, or a related cognate area of learning, at NQF Level 9.
### CURRICULUM

#### Year 1

#### Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIT812S</td>
<td>Research Methodology</td>
<td>None</td>
</tr>
</tbody>
</table>

**PLUS one of the following Strands depending on Specialisation:**

- **COMMUNICATION NETWORKS STRAND:** *(Register ALL courses from the strand selected)*
  - BBN810S  Broadband Networks  None
  - ECN811S  Emerging and Open Issues in Communication Networks  None
  - MNA810S  Mobile Networks and Architectures  None

- **SOFTWARE DEVELOPMENT STRAND:** *(Register All the courses from the strand elected)*
  - ASD810S  Advanced Software Development  None
  - ESD811S  Emerging and Open Issues in Software Development  None
  - FMM810S  Formal Methods  None

- **MOBILE DEVELOPMENT STRAND:** *(Register All the courses from the strand elected)*
  - MAD811S  Mobile Applications Development  None
  - EMD811S  Emerging and Open Issues in Mobile Development  None
  - MNA810S  Mobile Networks and Architectures  None

- **INFORMATION SECURITY STRAND:** *(Register All the courses from the strand elected)*
  - PTS811S  Practical Network Security  None
  - APC811S  Applied Cryptography  None
  - ISM811S  Information Security Management and Assurance  None

- **DIGITAL FORENSICS STRAND:** *(Register All the courses from the strand elected)*
  - PTS811S  Practical Network Security  None
  - DFM811S  Digital Forensics Management  None
  - APC811S  Applied Cryptography  None

#### Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH820S</td>
<td>Mini-thesis</td>
<td>Research Methodology</td>
</tr>
</tbody>
</table>

**PLUS one of the following Strand Elective courses for Specialisation in Communication Networks** *(Choose only one course from the selected strand)*

- WDS820S  Wireless Data Networks and System  None
- SON820S  Simulation of Networks  None

**PLUS one of the following Strand Elective courses for Specialisation in Software Development** *(Choose only one course from the selected strand)*

- MAD811S  Mobile Applications Development  None
- PLC820S  Programming Languages and Compilers  None

**PLUS one of the following Strand Elective courses for Specialisation in Mobile Development** *(Choose only one course from the selected strand)*

- IDE820S  Interaction Design & Evaluation  None
- MPD820S  Mobile Platforms and Development Environments  None

**PLUS one of the following Strand Elective courses for Specialisation in Information Security** *(Choose only one course from the selected strand)*

- CIT821S  Critical Infrastructure Protection  None
- DSD821S  Database Security and Data Protection  None

**PLUS one of the following Strand Elective Courses for Specialisation in Digital Forensics** *(Choose only one course from the selected strand)*

- CMF821S  Computer and Multimedia Forensics  None
- MBF821S  Mobile Forensics  None
MASTER OF COMPUTER SCIENCE


NQF Level: 9  NQF Credits: 240  NQF Qualification ID: Q0504

Description
The Master of Computer Science programme is of interdisciplinary nature and aims at students interested in, and adequately qualified and motivated, for graduate education to become scientific researchers in various fields of study related to Computer Science. In this regard, the Computing Sciences Accreditation Board (CSAB) defines Computer Science as focusing on the ‘theory of computation, algorithms and data structures, programming methodology and languages, and computer elements and architecture’. In addition to these four areas, CSAB also identifies fields such as software engineering, artificial intelligence, computer networking and communication, database systems, parallel computation, distributed computation, computer-human interaction, computer graphics, operating systems, and numerical and symbolic computation as being important areas of computer science.

The programme will enable students to deepen their knowledge of a particular Computer Science speciality for application, research and/or management purposes. Possible fields of specialisation include Communication Networks, Software Development, Mobile Development, Information Security and Forensic Computing. The precise focus of the research will be determined through dialogue between the candidate and supervising staff, and will fall within the scope of the approved research clusters of the Faculty of Computing and Informatics.

Students will develop a thorough understanding of relevant methodological approaches, and develop competence in the application of qualitative, design, mixed-mode and quantitative research methods through participation in research projects under supervision of experienced staff members. The development of research competence has prime priority in the context of this programme. Students are required to design, undertake and report on research where Computer Science is the research focus and apply techniques and/or deal with a specific application problem connected with the field of interest.

Admission Requirements
Applicants who hold qualifications from recognised institutions at NQF level 8, or equivalent, in disciplines related to Computer Science may be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research and may be required to make-up specific deficiencies in coursework at the discretion of the Faculty Postgraduate Committee. In addition, applicants may be required to attend a pre-selection interview and/or test at the discretion of the Department.

Applicants from other institutions must submit detailed information on all courses in their previous qualifications, as well as contact details of three referees. The latter also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications. Exceptions may be approved by the Faculty Postgraduate Committee, and all admissions are at the discretion of the Faculty Postgraduate Committee.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.

Assessment Strategies
Students are required to submit a research proposal six months after registration for approval by the Higher Degrees Committee. It is compulsory that students attend regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present a work-in-progress report every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of six months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their thesis. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their thesis before an appropriately constituted committee in accordance with the rules for postgraduate studies at the University. The thesis will be returned to students for correction before final binding and archiving. Final marks will only be released after correction of the thesis.
Articulation Arrangements
The Master in Computer Science is a terminal qualification; hence articulation arrangements are not applicable.

Mode of Delivery
By Research Only.

Teaching and Learning
By Research Only

Requirements for Qualification Award
240 NQF Credits

Quality Assurance Arrangements
The final assessment of the thesis will be done by qualified academics and practitioners with Doctoral Degrees. The examiners must be knowledgeable and respected individuals in the field with experience in assessment of postgraduate scientific reports or theses and will be appointed by the Higher Degrees Committee upon the recommendation of the Faculty Postgraduate Committee.
**DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE**  

**NQF Level:** 10  
**NQF Credits:** 360  
**NQF Qualification ID:** Q0505

**Description**  
The PhD in Computer Science was conceptualized against the back-drop of the above imperatives in order to train scientific researchers in various fields of study related to Computer Science (e.g. Communication Networks, Software Development, Mobile Development, Information Security and Forensic Computing). Students will develop a thorough understanding of relevant methodological approaches, and develop competence in the application of qualitative, design, mixed-mode and quantitative research methodologies through participation in research projects under supervision of experienced staff members. The precise focus of the research will be determined through dialogue between the candidate and supervising staff, and will fall within the scope of the approved research clusters of the Faculty of Computing and Informatics.

The development of research competence has prime priority in the context of this PhD programme. Students are required to investigate, design, and conduct independent research, where Computer Science is the research focus, apply advanced methods and techniques and/or deal with a sophisticated application problem connected with the topic of interest. The research output, in the form of a thesis, must contribute meaningfully and substantially to the existing body of knowledge in the field/area of specialisation through comprehension, application, analysis, synthesis and evaluation of existing knowledge.

**Admission Requirements**  
Applicants who hold qualifications from recognised institutions at NQF Level 9, or equivalent, in Computer Science or related cognate areas, may be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at this level. In addition, applicants may be required to attend a pre-selection interview at the discretion of the department. The final selection and admission of candidates will be approved by the Higher Degrees Committee.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.

**Articulation Arrangements**  
The PhD in Computer Science is a terminal qualification; hence articulation arrangements are not applicable.

**Assessment Strategies**  
Students are required to submit a research proposal six months after registration for approval by the Higher Degrees Committee. It is compulsory that students attend regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present a work-in-progress report every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of six months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their thesis. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their thesis before an appropriately constituted committee in accordance with the rules for postgraduate studies at the University. The thesis will be returned to students for correction before final binding and archiving. Final marks will only be released after correction of the thesis.

Any other special arrangements on assessments will be done in accordance with the University’s rules and procedures for postgraduate studies.

**Mode of Delivery**  
By Research Only

**Requirements for Qualification Award**  
360 NQF Credits

**Teaching and Learning**  
By Research Only
Transition Arrangements
This is a new programme and transition arrangements are, therefore, not applicable.

Quality Assurance Arrangements
The final assessment of the thesis will be done by qualified academics and practitioners with Doctoral Degrees. The examiners must be knowledgeable and respected individuals in the field with experience in assessment of postgraduate scientific reports or theses and will be appointed by the Higher Degrees Committee upon the recommendation of the Faculty Postgraduate Committee.

Transition Arrangements
This is a new programme and transition arrangements are, therefore, not applicable.
DEPARTMENT OF INFORMATICS

Postgraduate Certificate in Information and Communication Technology Policy and Regulation (Revised) (Phasing in 2019) 08PCIT
Postgraduate Certificate in Informatics (Information Systems Audit) (Phased in 2014) 08PGCI
Bachelor of Informatics Honours (Web Informatics) 08BIFH
Bachelor of Informatics Honours (Business Informatics) 08BIHB
Master of Informatics 09MINF
Doctor of Philosophy In Informatics 10PDIN

POSTGRADUATE CERTIFICATE IN INFORMATION AND COMMUNICATION TECHNOLOGY POLICY and REGULATION (Revised Programme) (Phasing in 2019) 08PCIT

NQF Level: 8 NQF Credits: 60 NQF Qualification ID: Q1104

Description
The Postgraduate Certificate in Information and Communications Technology Policy and Regulation Level 8 (PGC-ICTPR) aims to equip students with skills, techniques and understanding required for successful careers in technology management, ICT regulation and policy enactment in the public and private sectors of the economy. The revised

- Postgraduate Certificate in Information and Communication Technology Policy and Regulation (Level 8) specifically aim at:
  - Providing students with a strong foundation in ICT Policy and Regulation enactment;
  - Developing students’ abilities to analyse the relevant theories applicable to ICT policy and regulatory environment for the digital communications and ICT sector;
  - Providing students with a critical understanding about the role of ICTs for social, economic and political development;
  - Providing analytic skills that allow students to understand and critically engage with the complex and often conflicting policy debates about ICTs.

This programme is designed for middle- to senior-level managers and practitioners working in the broad electronic communications and ICT sector. Key sectors targeted include the telecommunications and electronic communications operators; the ICT industry; the broadcasting and digital audio-visual content services sector; regulatory agencies; government policy departments, including communications, trade and industry, science and technology; science councils; university teaching and research departments; consumer advocates, and development sector entities.

Admission requirements
Applicants must have a Bachelor degree in Information and Communications Technology (ICT) or an equivalent qualification at NQF level 7 worth at least 360 credits from a recognised institution. Applicants with a pre-NQF qualification of three years Bachelor degrees in other domain areas such as, Media studies, Public policy, Law, Medicine, Engineering, Economics, Regulation, may also apply into the programme. Applicants should also have at least two (2) years relevant work experience in Information and Communication Technology or policy and regulation.

Mode of Delivery
This qualification will be offered via the part-time flexible block-release sessions in accordance with NUST rules and regulations.

Assessment strategies
Continuous Assessment with Feedback (CAF) will be used for all the courses. CAF will focus on the use of progressive, sufficient assessment events and evidence as a feedback tool to promote and improve learning and teaching approaches and attaining the competencies required to demonstrate exit level outcomes rather than an accumulation of final pass marks through a series of assessment events. Learning shall be facilitated both in and outside the classroom, by assigning specific tasks to be carried out by the student. In accordance with NUST policy on diversified Continuous Assessment, each course will have a minimum of six assessments. Flexible and valid instruments shall be used. These include among others:

- Observation of performance;
- Written individual and group assignment;
- Presentations;
- Case studies;
- Report writing;
- Practical projects.

To be awarded a Postgraduate Certificate in ICT Policy and Regulation (Level 8) the student must undertake an ICT Policy and Regulation Project. In terms of the Project, the student shall be required to work under the guidance of an ICT academic, as well as a supervisor preferably within the ICT Policy and Regulation industry. The success of such an arrangement would require a clearly
defined programme stipulating specific targets. It is the responsibility of the student to manage the collaboration between the supervisor (staff within the academic department) and the industry-expert (quite often the student’s Supervisor or Senior Manager) throughout the ICT Policy and Regulation project development process.

The project should involve at least 150 hours of student effort and should represent a substantive exercise in specialisation. The deliverable shall include: project proposal, final report, and an oral presentation (please refer to the course syllabus for details). Students must achieve a minimum of at least 50% in each course to pass.

**CURRICULUM**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Semester 1</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
<th>NQF Level</th>
<th>NQF Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TMA811S</td>
<td>ICT Technologies and Market Analysis</td>
<td>None</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>POE811S</td>
<td>ICT Policy, Operating Environment, Law and Regulation</td>
<td>None</td>
<td>8</td>
<td>15</td>
</tr>
</tbody>
</table>

| Semester 2 | | TDG821S | ICT Trends, Developments and Governance | None | 8 | 15 |
|            | | PRP821S | ICT Policy and Regulation Project | Students must have passed at least two courses. | 8 | 15 |
POSTGRADUATE CERTIFICATE IN INFORMATICS (INFORMATION SYSTEMS AUDIT) 08PGCI

(Phased in 2014)

NQF Level: 8  NQF Credits: 60  NQF Qualification ID: Q0583

Description
The Postgraduate Certificate in Informatics (Information Systems Audit) programme is primarily designed to provide students with deeper insight, intellectual and cognitive skills related to their professional field and area of employment and help them to advance their career of choice. This programme will further expose students to advanced concepts, theories, tools, and methods of Information Systems Audit. The overarching aim of this programme is to prepare students for a career in the Information Technology (IT) audit field and for certification as an information systems auditor or information security specialist. Students will be able to take up a certification course in this field and may become members of professional/association bodies such as the Information Systems Audit and Control Association (ISACA). The Postgraduate Certificate in Informatics (Information Systems Audit) will not lead to further academic study, but graduates would gain credit for relevant courses should they opt to register for the Bachelor of Informatics Honours.

Admission Requirements
Applicants must have a three-year Diploma or a Bachelor degree or an equivalent qualification on NQF Level 7 with an Information Systems emphasis from an accredited institution. Applicants should also have at least two years relevant work experience.

Articulation Arrangements
Transfer of credits will be dealt with in accordance with the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. The maximum credit that can be granted is 50% of the credits for a qualification.

Students who commenced a Bachelor of Informatics Honours, but discontinued their studies, may utilise academic courses passed for credit recognition in the Postgraduate Certificate in Informatics (Information Systems Audit).

Conversely, students who passed academic courses as part of this programme may utilise these for credit, if wishing ultimately, to undertake the Bachelor of Informatics Honours.

In addition, students who passed certain courses in the old Bachelor of Technology in Business Computing programme may be granted credit for such courses as follows:

<table>
<thead>
<tr>
<th>B. Tech.: Business Computing (Old)</th>
<th>PGC: Informatics (Information Systems Audit) [New/Revised Equivalent Courses]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Courses</strong></td>
<td><strong>New Courses</strong></td>
</tr>
<tr>
<td>Code</td>
<td>Course Name</td>
</tr>
<tr>
<td>AIS410S</td>
<td>Accounting Information Systems</td>
</tr>
<tr>
<td>ISA410S</td>
<td>Information Systems Audit</td>
</tr>
</tbody>
</table>
CURRICULUM

Year 1
Course Code | Course Title | Prerequisite | NQF Level | NQF Credits
--- | --- | --- | --- | ---
AIS822S | Accounting Information Systems | None | 8 | 15
ISA822S | Information Systems Audit | None | 8 | 15
PGP811S | Industry Project | Students must have passed at least one course | 8 | 15
ISM811S | Information Security Management and Assurance | None | 8 | 15

Transition Arrangements
The Postgraduate Certificate in Business Computing (Information Systems Audit) (old curriculum) will be phased out systematically until 2015 with minimal disruption to existing students’ learning progression. The last intake of students for the Postgraduate Certificate in Business Computing (Information Systems Audit) (old curriculum) was in January 2014.

Students who are registered on the Postgraduate Certificate in Business Computing (Information Systems Audit) (old curriculum) will be allowed to transition to the Postgraduate Certificate in Informatics (Information Systems Audit) (new curriculum).

Students who are registered in 2014 for the Postgraduate Certificate in Business Computing (Information Systems Audit (old curriculum), and who fail more than 50% of the courses at the end of 2014, will be required to change their registration to the Postgraduate Certificate in Informatics (Information Systems Audit) (new curriculum) and will be granted credits on a course-by-course basis in accordance with the information in Table 1 below.

The Postgraduate Certificate in Informatics (Information Systems Audit) (new curriculum), will take effect from January 2015. Courses will only be offered based on the syllabi of new/revised courses in 2015. Students who fail any of the courses on the old curricula will be required to repeat such failed courses based on the syllabi of the new/revised corresponding courses. Please refer to Table 2 below, for detailed information on the new/revised corresponding courses to be done if courses on the Postgraduate Certificate in Business Computing (Information Systems Audit) (old curriculum) are failed.

The deadline for complete phasing out of the Postgraduate Certificate in Business Computing (Information Systems Audit) (old curriculum) is 2016 after which students must automatically switch to the Postgraduate Certificate in Informatics (Information Systems Audit) (new curriculum).

Table 1: Courses to be credited

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Course Code</td>
<td>Course Name</td>
</tr>
<tr>
<td>A1S811S</td>
<td>Accounting Information Systems</td>
<td>A1S822S</td>
<td>Accounting Information Systems</td>
</tr>
<tr>
<td>I1A811S</td>
<td>Information Systems Audit and Control</td>
<td>I1A822S</td>
<td>Information Systems Audit</td>
</tr>
<tr>
<td>P1P810S</td>
<td>Industry Project</td>
<td>P1G811S</td>
<td>Industry Project</td>
</tr>
<tr>
<td>P1C810S</td>
<td>Industry Certification</td>
<td>P1M811S</td>
<td>Information Security Management and Assurance</td>
</tr>
</tbody>
</table>
Table 2: Corresponding Courses to be done (if failed) - this is not a credit table!

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIS811S</td>
<td>Accounting Information Systems</td>
<td>AIS822S</td>
<td>Accounting Information Systems</td>
</tr>
<tr>
<td>ISA811S</td>
<td>Information Systems Audit and Control</td>
<td>ISA822S</td>
<td>Information Systems Audit</td>
</tr>
<tr>
<td>PIP810S</td>
<td>Industry Project</td>
<td>PGP811S</td>
<td>Industry Project</td>
</tr>
<tr>
<td>PIC810S</td>
<td>Industry Certification</td>
<td>ISM811S</td>
<td>Information Security Management and Assurance</td>
</tr>
</tbody>
</table>

Please Note:
Table 2 above only highlights new/revised core courses in Informatics that should be done if courses on the old curriculum are failed.

Qualification Outcomes
Upon completing the Postgraduate Certificate in Business Computing (Information Systems Audit), students will be able to:

- Investigate the information system(s) risks or aspects thereof at organisations, with special reference to the business implications;
- Assess and implement appropriate internal controls and other security measures in an Information System;
- Plan and implement efficient information systems architecture, technology and business processes to support business objectives in the most cost-effective way;
- Recommend and motivate systems acquisition to senior management and staff in organisations and act as information systems auditors in the implementation of new systems;
- Evaluate and integrate information systems and business requirements in order to maximise the performance of an organisation;
- Analyse the efficiency and performance of the system(s), and propose improvements where appropriate and possible;
- Apply appropriate IT governance and control frameworks, and best practices in an organisation;
- Communicate solutions and recommendations to management by means of professional presentations and reports.
BACHELOR OF INFORMATICS HONOURS (WEB INFORMATICS) 08BIFH
BACHELOR OF INFORMATICS HONOURS (BUSINESS INFORMATICS) 08BIHB

NQF Level: 8  NQF Credits: 120  NQF Qualification ID: Q0508

Description
The Bachelor of Informatics Honours is a postgraduate specialisation degree that aims at consolidating and deepening the knowledge and skills of students in the main cognate area of learning, as well as developing their capacity to conduct supervised research of an applied nature. The programme is purposefully designed to expose students to advanced concepts, theories, tools, and methods of Informatics. In this context, specific emphasis is placed on internationally accepted general standards and practices, as well as key attributes that would enable graduates to assume supervisory/middle management and applied research positions in the Computing industry, academia, and in the public sector in general.

The curriculum is structured to facilitate specialisation in the areas of Web Informatics and Business Informatics.

Admission Requirements
Applicants may be considered for admission to this programme if they have a Bachelor’s degree in Informatics, or a Bachelor of Information Technology in Business Computing from the Namibia University of Science and Technology, or an equivalent qualification at NQF Level 7 from a recognised institution, worth at least 360 credits.

Applicants are required to submit the following documents with their applications:
- A professional resume, highlighting practical and professional Computing and IT experience, if applicable;
- A written proposal/motivation for undertaking further studies;
- A transcript of the undergraduate study.

Articulation Arrangements
Transfer of credits will be dealt with according to the University’s regulations on Recognition of Prior Learning. These provide for course-by-course credits as well as credit transfer by volume under certain academic conditions. The maximum credit that can be granted is 50 % of the credits for a qualification.

Upon successful completion of the Bachelor of Informatics Honours, students will ordinarily be able to pursue further studies in the same, or a related cognate area of learning, at NQF Level 9.

CURRICULUM

Year 1
Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIT812S</td>
<td>Research Methodology</td>
<td>None</td>
</tr>
<tr>
<td>EAT810S</td>
<td>Enterprise Architecture</td>
<td>None</td>
</tr>
</tbody>
</table>

PLUS one of the following Strands depending on Specialisation:
(Register ALL courses from the strand selected)

WEB INFORMATICS STRAND

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDM810S</td>
<td>Graphics Design and Digital Media</td>
<td>None</td>
</tr>
<tr>
<td>BWM810S</td>
<td>Business Web and Marketing</td>
<td>None</td>
</tr>
</tbody>
</table>

BUSINESS INFORMATICS STRAND

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIN811S</td>
<td>Business Intelligence</td>
<td>None</td>
</tr>
<tr>
<td>ILM812S</td>
<td>IT in Logistics Management</td>
<td>None</td>
</tr>
</tbody>
</table>

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH820S</td>
<td>Mini-thesis</td>
<td>Research Methodology</td>
</tr>
</tbody>
</table>

PLUS one of the following Strand Elective courses for Specialisation in Web Informatics
(Choose only one course from the selected strand)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMM820S</td>
<td>Advanced Multimedia</td>
<td>None</td>
</tr>
<tr>
<td>MAI821S</td>
<td>Mobile Applications in Informatics</td>
<td>None</td>
</tr>
</tbody>
</table>

PLUS one of the following Strand Elective courses for Specialisation in Business Informatics
(Choose only one course from the selected strand)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA822S</td>
<td>Information Systems Audit</td>
<td>None</td>
</tr>
<tr>
<td>AIS822S</td>
<td>Accounting Information Systems</td>
<td>None</td>
</tr>
</tbody>
</table>
Transition Arrangements

The Bachelor of Information Technology Honours in Business Computing (old curriculum) will be phased out systematically until 2016 with minimal disruption to existing students’ learning progression. The last intake of students for the Bachelor of Information Technology Honours in Business Computing (old curriculum) was in January 2013.

Students who are registered on the Bachelor of Information Technology Honours in Business Computing (old curriculum) will be allowed to transition to the Bachelor of Informatics Honours (new curriculum) but may lose credits.

Students who were registered in 2013 for the Bachelor of Information Technology Honours in Business Computing (old curriculum), and who failed more than 50% of the courses at the end of 2013, will be required to change their registration to the Bachelor of Informatics Honours (new curriculum) and will be granted credits on a course-by-course basis in accordance with the information in Table 1 below.

The Bachelor of Informatics Honours (new curriculum), took effect from January 2014. Courses will only be offered based on the syllabi of new/revised courses in 2014. Students who fail any of the courses on the old curricula will be required to repeat such failed courses based on the syllabi of the new/revised corresponding courses. Please refer to Table 2, below, for detailed information on the new/revised corresponding courses to be done if courses on the Bachelor of Information Technology Honours in Business Computing (old curriculum) are failed.

The deadline for complete phasing out of the Bachelor of Information Technology Honours in Business Computing (old curriculum) is 2016 after which students must automatically switch to the Bachelor of Informatics Honours (new curriculum).

Table 1: Courses to be credited

<table>
<thead>
<tr>
<th>Bachelor of Information Technology Honours in Business Computing (Old Courses)</th>
<th>Bachelor of Informatics Honours (New/Revised Equivalent Courses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Code</td>
<td>Course Name</td>
</tr>
<tr>
<td>AMS811S</td>
<td>Advanced Management Information Systems</td>
</tr>
<tr>
<td>DNS810S</td>
<td>Data and Network Security</td>
</tr>
<tr>
<td>RIT811S</td>
<td>Research Methodology (IT)</td>
</tr>
<tr>
<td>TOC811S</td>
<td>Theory of Computation</td>
</tr>
<tr>
<td>HRP810S</td>
<td>Honours Research Project</td>
</tr>
<tr>
<td>SM811S</td>
<td>Soft Skills for IT Management</td>
</tr>
<tr>
<td>PMS811S</td>
<td>Practical Management Information Systems</td>
</tr>
<tr>
<td>SAM810S</td>
<td>Simulation and Modeling</td>
</tr>
<tr>
<td>BIN810S</td>
<td>Business Intelligence</td>
</tr>
<tr>
<td>ILM811S</td>
<td>IT in Logistics Management</td>
</tr>
<tr>
<td>AIA811S</td>
<td>Artificial Intelligence Applications</td>
</tr>
<tr>
<td>APM810S</td>
<td>Advanced Process Management</td>
</tr>
<tr>
<td>AIS811S</td>
<td>Accounting Information Systems</td>
</tr>
<tr>
<td>MAD810S</td>
<td>Mobile Application Development</td>
</tr>
<tr>
<td>ISA811S</td>
<td>Information Systems audit &amp; Control</td>
</tr>
</tbody>
</table>
Table 2: Corresponding Courses to be done (if failed) - this is not a credit table!

<table>
<thead>
<tr>
<th>Bachelor of Information Technology Honours in Business Computing (Old Courses)</th>
<th>Bachelor of Informatics Honours (Corresponding New/Revised Courses to be done, if failed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Code</td>
<td>Course Name</td>
</tr>
<tr>
<td>RIT811S</td>
<td>Research Methodology (IT)</td>
</tr>
<tr>
<td>HRP810S</td>
<td>Honours Research Project</td>
</tr>
<tr>
<td>SAM810S</td>
<td>Simulation and Modelling</td>
</tr>
<tr>
<td>BIN810S</td>
<td>Business Intelligence</td>
</tr>
<tr>
<td>ILM811S</td>
<td>IT in Logistics Management</td>
</tr>
<tr>
<td>AIS811S</td>
<td>Accounting Information Systems</td>
</tr>
<tr>
<td>MAD810S</td>
<td>Mobile Application Development</td>
</tr>
<tr>
<td>ISA811S</td>
<td>Information Systems audit &amp; Control</td>
</tr>
</tbody>
</table>
MASTER OF INFORMATICS

NQF Level: 9 \hspace{2cm} NQF Credits: 240 \hspace{2cm} NQF Registration ID: Q0506

Description
The Master of Informatics programme is of interdisciplinary nature and aims at students interested in, and adequately qualified and motivated, for graduate education to become scientific researchers in various fields of study related to Informatics. In this context, Informatics is defined as the study of the structure and behaviour of natural and artificial systems that generate, process, store, and communicate information. Informatics also includes the study of the cognitive, social, legal, and economic impact of such information systems.

The programme will enable students to deepen their knowledge of a particular Informatics discipline for application, research and/or management purposes. Possible fields of specialisation include Web Informatics and Business Informatics. The precise focus of the research will be determined through dialogue between the candidate and supervising staff, and will fall within the scope of the approved research clusters of the Faculty of Computing and Informatics.

Students will develop a thorough understanding of relevant methodological approaches, and develop competence in the application of qualitative and quantitative research methods through participation in research projects under supervision of experienced staff members. The development of research competence has prime priority in the context of this programme. Students are required to design, undertake and report on research where Informatics is the research focus and apply techniques and/or deal with a specific application problem connected with the field of interest.

Admission Requirements
Applicants who hold qualifications from recognised institutions at NQF level 8, or equivalent, in disciplines related to Informatics may be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research and may be required to make-up specific deficiencies in coursework at the discretion of the Higher Degrees Committee. In addition, applicants may be required to attend a pre-selection interview and/or test at the discretion of the Department.

Applicants from other institutions must submit detailed information on all courses in their previous qualifications, as well as contact details of three referees. The latter also applies to applicants who have been working in the field subsequent to obtaining their previous qualifications.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.

Assessment Strategies
Students are required to submit a research proposal six months after registration for approval by the Higher Degrees Committee. It is compulsory that students attend regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present a work-in-progress every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of six months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their thesis. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their thesis before an appropriately constituted committee in accordance with the rules for postgraduate studies at the University. The thesis will be returned to students for correction before final binding and archiving. Final marks will only be released after correction of the thesis.

Transition Arrangements
The structured/taught Master of Information Technology (MIT) programme will be phased out systematically until 2016 with no disruption to existing students’ learning progression. The last intake for the MIT (09MIFT) was in 2013. The Master of Informatics will take effect from January 2014.
DOCTOR OF PHILOSOPHY IN INFORMATICS

Description
The PhD in Informatics was conceptualised against the back-drop of the above imperatives in order to train scientific researchers in various fields of study related to Informatics (e.g. Business Informatics and Web Informatics). Students will develop a thorough understanding of relevant methodological approaches, and develop competence in the application of qualitative, design, mixed-mode and quantitative research methodologies through participation in research projects under the supervision of experienced staff members. The precise focus of the research will be determined through dialogue between the candidate and supervising staff and will fall within the scope of the approved research clusters of the Faculty of Computing and Informatics.

The development of research competence has prime priority in the context of this PhD programme. Students are required to investigate, design, and conduct independent research, where Informatics is the research focus, apply advanced methods and techniques and/or deal with a sophisticated application problem connected with the topic of interest. The research output, in the form of a thesis, must contribute meaningfully and substantially to the existing body of knowledge in the field/area of specialisation through comprehension, application, analysis, synthesis and evaluation of existing knowledge.

Admission Requirements
Applicants who hold qualifications from recognised institutions at NQF level 9, or equivalent, in Informatics or related cognate areas, may be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at this level. In addition, applicants may be required to attend a pre-selection interview at the discretion of the department. The final selection and admission of candidates will be approved by the Higher Degrees Committee.

Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.

Articulation Arrangements
The PhD in Informatics is a terminal qualification hence articulation arrangements are not applicable.

Assessment Strategies
Students are required to submit a research proposal six months after registration for approval by the Higher Degrees Committee. It is compulsory that students attend regular research methodology seminars until successful defense and approval of the research proposal. Students are required to present a work-in-progress report every six months during research seminars for monitoring and assessment purposes. Students who fail the initial assessment of the research proposal will receive an extension of six months for re-approval.

In compliance with the general requirements of Senate, students are required to submit a thesis for evaluation, which should comply with international academic standards. The thesis requires students to work independently and to investigate their own individual research topic. Students are required to cultivate a professional work ethic to deliver the combination of research, analysis, communication and presentation demanded by their thesis. The thesis will be assessed in accordance with the rules for studies at postgraduate level.

Students will present and defend their thesis before an appropriately constituted committee in accordance with the rules for postgraduate studies at the University of Science and Technology. The thesis will be returned to students for correction before final binding and archiving. Final marks will only be released after correction of the thesis.

Any other special arrangements on assessments will be done in accordance with the University’s rules and procedures for postgraduate, namely PhD studies.

Quality Assurance Arrangements
The final assessment of the thesis will be done by qualified academics and practitioners with Doctoral Degrees. The examiners must be knowledgeable and respected individuals in the field with experience in assessment of postgraduate scientific reports or theses and will be appointed by Senate upon the recommendation of the Higher Degrees Committee.

Transition Arrangements
This is a new programme and transition arrangements are, therefore, not applicable.