Tutorial Letter 101/0/2025

Visual Programming I
INF1511

Year Module

School of Computing

Department Information Systems

IMPORTANT INFORMATION

Please register on myUnisa, activate your myLife e-mail account and make
sure that you have regular access to the myUnisa module website,
INF1511-25-Y, as well as your group website.

Note: This is a fully online module. It is, therefore, only available on myUnisa.

BARCODE

Define tomorrow.

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CONTENTS

1 INTRODUCTION

Unisa is a comprehensive open distance e-learning (CODeL) higher education institution. The comprehensiveness of our curricula encapsulates a range of offerings from strictly vocational to strictly academic certificates, diplomas, and degrees. Unisa's "openness" and its distance e-learning character result in many students registering at Unisa who may not have had an opportunity to enrol in higher education. Our CODeL character implies that our programmes are carefully planned and structured to ensure success for students, ranging from the under-prepared, but with potential, to the sufficiently prepared.

Multiple modes of delivery, ranging from blended learning to fully online, are used for the teaching and learning in a CODeL context. As a default position, all postgraduate programmes are offered fully online, with no printed study materials, while undergraduate programmes are offered in a blended mode of delivery where printed study materials are augmented with online teaching and learning via the learner management system – myUnisa. In some instances, undergraduate programmes are offered fully online as well.

Programmes are aligned with the vision, mission, and values of Unisa and our commitment to serve humanity and shape futures, combined with a clear appreciation of our location on the African continent. With this in mind, Unisa's graduates have distinctive graduate qualities which include:

•	being independent, resilient, responsible, and caring citizens who can fulfil and serve in multiple roles in their immediate and future local, national and global communities

•	having a critical understanding of their location on the African continent, with its histories, challenges, and potential in relation to globally diverse contexts

•	having the ability to critically analyse and evaluate the credibility and usefulness of information and data from multiple sources in a globalised world with its ever-increasing information and data flows and competing worldviews

•	having the ability to apply their discipline-specific knowledges competently, ethically, and creatively, to solve real-life problems

•	having an awareness of their own learning and developmental needs and future potential

This module is offered online (all information is available via the internet); thus, myUnisa is our virtual campus. This is an online system that is used to administer, document and deliver educational material to you and support engagement with you. Information on the tools that will be available to engage with the lecturer and fellow students to support your learning will also be communicated via various platforms. Because this is a fully online module, you will need to use myUnisa to study and complete the learning activities for this module. Each learning unit has a folder and a discussion session. We, therefore, want to encourage you to visit the website, INF1511-24-Y, on myUnisa, frequently.

We wish you every success with your studies!

2 MODULE OVERVIEW

2.1 Purpose

Qualifying students, as first-time programmers, will have acquired introductory knowledge, skills and competencies to apply visual programming concepts, techniques and strategies, using problem solving, programming logic, as well as the design techniques of an object-oriented, event-driven language, Python. This module forms part of a bachelor's degree and supports further studies and applications in the sector of computing, in the fields of Computer Science, Information Systems or Multimedia. The qualifying student can program computers to solve problems in business and society, within African, South-African, and global contexts. Students require daily online connectivity and access, and programming ability.

2.2 Outcomes and assessment criteria

For this module, you will have to master several outcomes:

Specific outcomes and assessment criteria		
	Specific outcomes	**Assessment criteria**
1	Describe the programming concepts for computing including performing arithmetic operations.	1.1 Python and its features are explained 1.2 Python is installed on different platforms 1.3 Python is interacted with through Command Line Mode 1.4 A program is written in Python 1.5 Comments, continuation lines and printing messages are written 1.6 Arithmetic operations are performed
2	Implement decision using the if-else statement and typical programming structures.	2.1 The if-else statement is used for decision-making 2.2 A problem is solved by the application of loops 2.3 Logical and Membership operators are being used
3	Implement iteration using loops (FOR and WHILE), and typical programming structures.	3.1 The FOR and WHILE statements are used for iteration 3.2 A problem is solved by the application of loops 3.3 Logical and Membership operators are being used
4	Implement sequences using lists, strings, tuples and array structures and the required programming methods.	4.1 Data is stored in a string 4.2 Arrays are created and displayed in one-and two-dimensional format 4.3 Tuples and lists are created, and elements are manipulated 4.4 String methods are implemented 4.4. Union and intersection operators are applied
5	Apply the writing and calling of general sub procedures and function procedures.	5.1 Functions and value parameters are applied 5.2 Variables and sequences are applied 5.3 Recursion is implemented 5.4 Modules are imported and exported
6	Implement the use of classes and operators and the required programming methods.	6.1 Classes are defined 6.2 Class attributes are applied 6.3 Class and static methods are implemented 6.4 Inheritance is explained 6.5 Polymorphism is compiled
Specific outcomes and assessment criteria		

	Specific outcomes	Assessment criteria
7	Implement file handling and the relevant exception handling and the required programming methods.	7.1 Exception handling is defined 7.2 Data maintenance to files is applied
8	Compile a GUI application using implement basic widgets and the required programming methods for a visual programming application.	8.1 The Qt toolkit and PyQt are explained 8.2 PyQt is installed 8.3 The GUI application is created through coding 8.4 Fundamental GUI widgets (input, display and output) are implemented 8.5 Event handling is implemented

3   CURRICULUM TRANSFORMATION

Unisa has implemented a transformation charter in terms of which the University has placed curriculum transformation high on the teaching and learning agenda. Curriculum transformation includes student-centred scholarship, the pedagogical renewal of teaching and assessment practices, the scholarship of teaching and learning, and the infusion of African epistemologies and philosophies. All of these will be phased in at both programme and module levels, and because of this you will notice a marked change in the teaching and learning strategy implemented by Unisa, together with the way in which the content is conceptualised in your modules. We encourage you to embrace these changes during your studies at Unisa, in a responsive way within the framework of transformation.

4   LECTURER AND CONTACT DETAILS

4.1   Lecturer

Primary lecturer for this module is Dr AT Kgopa.
Department: School of Computing (Information Systems)
Telephone: Please use e-mail communication.
E-mail: kgopaat@unisa.ac.za or **Call on Teams:** kgopaat

4.2   Department

You can contact the Department of Information Systems at:

Tel number: 011 670 9200

E-mail: computing@unisa.ac.za

4.3   University

The contact addresses of the various administrative departments appear on the Unisa website: http://www.unisa.ac.za/sites/corporate/default/Contact-us/Student-enquiries. Include YOUR MODULE CODE AND STUDENT NUMBER in ALL correspondence.

5   RESOURCES

5.1   Prescribed books

There are no prescribed books. Textbooks are available as e-resources on the Unisa Library website.

5.2   Recommended books

The is no recommended textbook. The module uses a list of recommended online resources, including extracts from online books.

5.3   Electronic reserves (e-reserves)

E-reserves can be downloaded from the Library webpage - find **e-reserves**. More information is available at: http://oasis.unisa.ac.za/search/r

5.4   Library services and resources

The Unisa Library offers a range of information services and resources. The library has created numerous library guides, which are available at: http://libguides.unisa.ac.za

- For brief information on the library:
  https://www.unisa.ac.za/library/libatglance
- For more detailed library information:
  http://www.unisa.ac.za/sites/corporate/default/Library
- Frequently Asked Questions:
  https://www.unisa.ac.za/sites/corporate/default/Library/Frequently-Asked-Questions
- For research support and services such as the Personal Librarian service and the Information Search Librarian's Literature Search Request (on your research topic) service:
  http://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Researchsupport.
- For library training for undergraduate students:
  https://www.unisa.ac.za/sites/corporate/default/Library/Libraryservices/Training
- Lending services:
  https://www.unisa.ac.za/sites/corporate/default/Library/Libraryservices/Lending-services
- Services for postgraduate students:
  https://www.unisa.ac.za/sites/corporate/default/Library/Services-for-Postgraduates
- Support and services for students with disabilities:
  https://www.unisa.ac.za/sites/corporate/default/Library/Services-for-students-withspecial-needs
- Library technology support:
  https://libguides.unisa.ac.za/techsupport
- Finding and using library resources and tools:
  http://libguides.unisa.ac.za/Research_skills
- A–Z list of library databases:

https://libguides.unisa.ac.za/az.php

Important contact information:
- Technical problems in accessing library online services: Lib-help@unisa.ac.za
- General library-related queries: Library-enquiries@unisa.ac.za
- Queries related to library fines and payments: Library-fines@unisa.ac.za
- Interlibrary loan service for postgraduate students: libr-ill@unisa.ac.za
- Literature Search Service: Lib-search@unisa.ac.za
- Social media channels: Facebook: UnisaLibrary and Twitter: @UnisaLibrary

6 STUDENT SUPPORT SERVICES

The *Study @ Unisa* online publication is available on myUnisa:
www.unisa.ac.za/brochures/studies

This publication contains important information and guidelines for successful studies through Unisa.

If you need assistance about the myModule system, you are welcome to use the following contact details:

- Toll-free landline: 0800 00 1870 (Select option 07 for myModule)
- E-mail: mymodule22@unisa.ac.za or myUnisaHelp@unisa.ac.za

You can access and view short videos on topics such as how to view your calendar, access module content, view announcements for modules, submit assessment and participate in forum activities via the following link: https://dtlsqa.unisa.ac.za/course/view.php?id=32130

Registered Unisa students get a free myLife e-mail account. Important information, notices and updates are sent exclusively to this account. Please note that it can take up to 24 hours for your account to be activated after you have claimed it. Please do this immediately after registering at Unisa, by following this link: myLifeHelp@unisa.ac.za
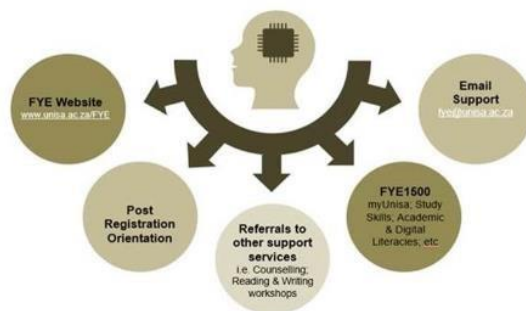Your myLife account is the **only** e-mail account recognised by Unisa for official correspondence with the University and will remain the official primary e-mail address on record at Unisa. You are responsible for the management of this e-mail account.

6.1   First-Year Experience Programme

Many students find the transition from school education to tertiary education stressful. This is also true in the case of students enrolling at Unisa for the first time. Unisa is a dedicated open distance and e-learning institution, and it is very different from face-to-face/contact institutions. It is a mega university, and all our programmes are offered through either blended learning or fully online learning. It is for this reason that we thought it necessary to offer first-time students additional/extended support, to help them seamlessly navigate the Unisa teaching and learning journey, with little difficulty and few barriers. We, therefore, offer a specialised student support programme to students enrolling at Unisa for the first time, namely Unisa's First-Year Experience (FYE) Programme. This programme is designed to provide you with prompt and helpful

information about services that the institution offers and how you can access information to these services. The following FYE services are currently offered:
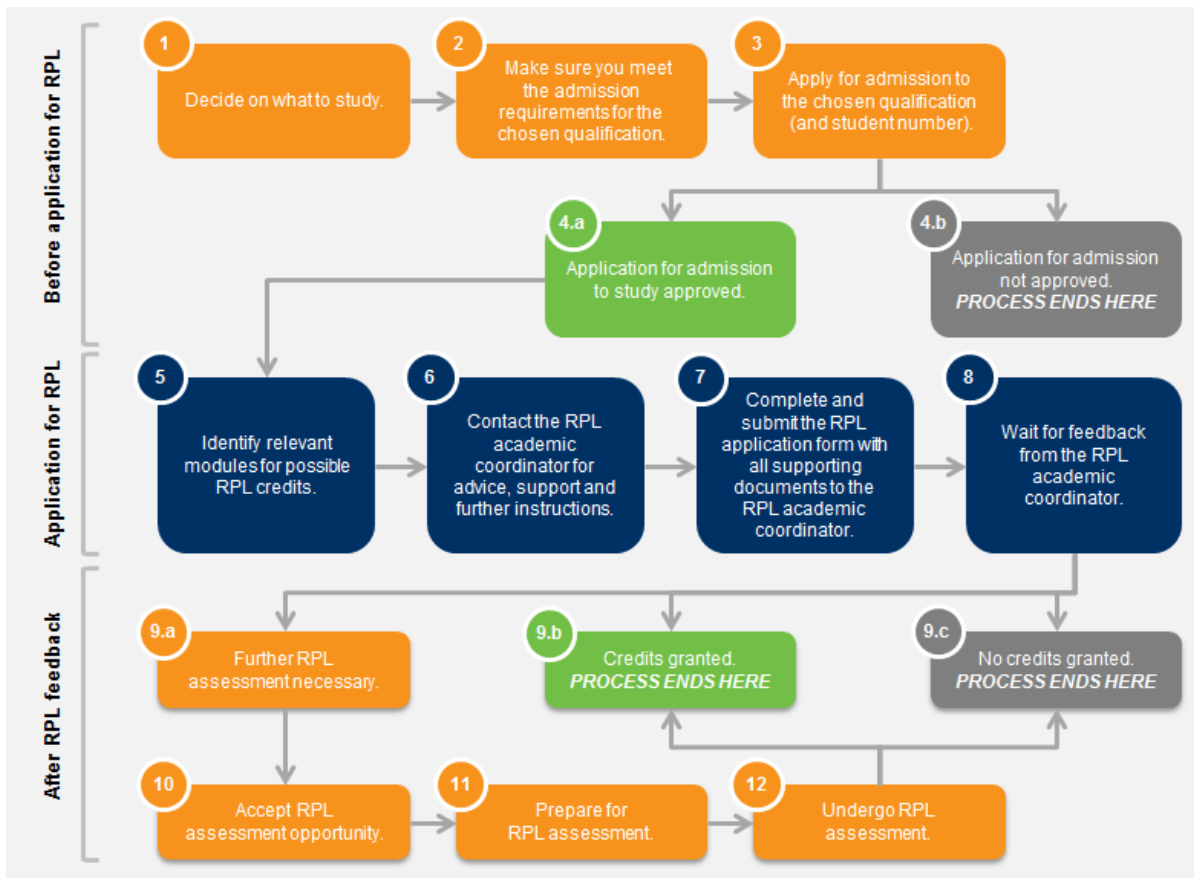
- FYE website: All the guides and resources you need to navigate through your first year at Unisa can be accessed using the following link: www.unisa.ac.za/FYE

- FYE e-mails: You will receive regular e-mails to help you stay focused and motivated.

- FYE broadcasts: You will receive e-mails, with links to broadcasts on various topics related to your first-year studies (e.g., videos on how to submit assessments online).

- FYE mailbox: For assistance with queries related to your first year of study, send an e-mail to fye@unisa.ac.za .

6.2   Using Recognition of Prior Learning (RPL) to apply for module credit within a qualification.

Now that you are a registered student, you are advised to familiarise yourself with the learning outcomes of the module or modules you have chosen. If you have been exposed to those learning outcomes for three years or more – either through work experience or other involvement – you can apply to be exempted from completing assignments and writing examinations. As part of your application for this exemption, you will be required to compile a portfolio of evidence substantiating how your experience is equivalent to the learning outcomes. The diagram below shows the steps involved in obtaining recognition of prior learning (RPL) for module credit. For more information on the process, RPL fees, and the contact details of your college RPL coordinator, visit the Unisa website: www.unisa.ac.za/rpl

7. STUDY PLAN

See Tutorial Letter 102 for a proposed schedule to pace yourself through the eight units of INF1511.

8 HOW TO STUDY ONLINE

- **All your study material and learning activities for online modules are designed to be delivered online on myUnisa.**
- **All your assignments must be submitted online.** This means that you will do all your activities and submit all your assignments on myUnisa. In other words, you may **NOT** post your assignments to Unisa using the South African Post Office or e-mail.
- **All communication between you and the University happens online.** Lecturers will communicate with you via e-mail, and use the **Announcements,** the **Discussion Forums** and the **Questions and Answers** tools. You can also use these platforms to ask questions and contact your lecturers.

9. ASSESSMENT

9.1 Assessment criteria

Each of the 8 units of INF1511 has a theory multiple-choice questions (MCQ) quiz (for self-assessment), a discussion session (to review the examples and learning materials), and a practical MCQ quiz, based on the examples reviewed during the discussion session (for the unit assessment assignment).

9.2 Assessment plan

- To complete this module, you are encouraged to submit the 8 assignment assessments and attempt each of the unit self-assessment MCQs.
- All information about when and where to submit your assessments will be made available to you via the myModule site for your module.
- Due dates for assessments, as well as the actual assessments, are available on the site for this module.
- To gain admission to the examination, you are required to submit at least 1 assignment by the end of May 2025 (please see the exact date on module site).
- The assignment weighting for the module is 30%.
- Please watch out for announcements on the module site, on how examinations for the modules for which you are registered will be conducted.
- The examination will count 70% towards the final module mark.

Assessment number	Method of assessment	Outcomes covered in assessment	Weigh contribution of assessment
Practical assignments (one for each assignment of the 8 learning units)	MCQ - random selection, linear and timed, limited attempts, based on discussion of unit examples	Each of the unit outcomes, as detailed above and presented during unit discussion session.	See Tutorial Letter 102 for details. Total 30% of year mark
Self -assessment theory (one quiz per learning unit)	MCQ - random selection, linear and timed, limited attempts, based on discussion of unit examples	Each of the unit outcomes, as detailed above and presented during unit discussion session.	See Tutorial Letter 102 for details. Optional.
Summative assessment	30 MCQs - random selection, linear and timed (60 minutes), only 1 attempt with IRIS proctoring Details of work breakdown will be shared as soon as possible.	All 8 learning units.	70% of the year mark.

- Assignments will be weighted towards the total year mark as follows:

Assignment number	Method of assignment	Weigh contribution of assignment
Unit 1	Quiz	10%
Unit 2	Quiz	15%
Unit 3	Quiz	15%
Unit 4	Quiz	10%
Unit 5	Quiz	10%
Unit 6	Quiz	10%
Unit 7	Quiz	10%
Unit 8	Quiz	20%
Year mark	**-**	**30%**
Exam mark	**Quiz**	**70%**
Final mark	**-**	**100%**

9.3 Assessment/assignments due dates

- There are no assignment **due dates** included in this tutorial letter.

- Assignment due dates will be made available to you on the myUnisa landing page for this module. We envisage that the due dates will be available to you upon registration.

- Please start working on your assessments as soon as you register for the module.

- Log on to the myUnisa site for this module to obtain more information on the due dates for the submission of the assessments.

9.4 Submission of assessments/assignments

- Unisa, as a comprehensive open distance e-learning institution (CODeL), is moving towards becoming an online institution. You will, therefore, see that all your study material, assessments and engagements with your lecturer and fellow students are online. We use myUnisa as our virtual campus.

- The myUnisa virtual campus will offer students access to the myModule site, where learning material will be available online and where assessments should be completed. This is an online system that is used to administer, document, and deliver educational material to students and support engagement between academics and students.

- The myUnisa platform can be accessed via https://my.unisa.ac.za. Click on the myModule 2025 button to access the online sites for the modules that you are registered for.

- The University undertakes to communicate clearly and as frequently as is necessary to ensure that you obtain the greatest benefit from the use of the myModule learning management system. Please access the announcements on your myModule site regularly, as this is where your lecturer will post important information to be shared with you.

- When you access the INF1511-25-Y module site, you will see a welcome message. Below the welcome message, you will see the assessment shells, where you can access the assignments that you need to complete. All assessments must be completed on the assessment shells.

- To complete quiz assessments, please log on to the module site, where you need to complete the assessment. Click on the relevant assessment shell (Assessment 1, Assessment 2, etc.). There will be a date on which the assessment will open for you. When the assessment is open, access the quiz online and complete it within the time available to you. Quiz assessment questions are not included in this tutorial letter (Tutorial Letter 101) and are only made available online. You must, therefore, access the quiz online and complete it online.

- It is not advisable to use a cellphone to complete the quiz. Please use a desktop computer, tablet or laptop when completing the quiz. Students, who use a cellphone, find it difficult to navigate the **Online Assessment** tool on the small screen and often struggle to navigate between questions and successfully complete the quizzes. In addition, cellphones are more vulnerable to dropped internet connections than other devices. **If possible, please do not use a cellphone for this assessment type**.

9.4.1 Types of assignments and descriptions

All assignments are defined as either optional, mandatory, compulsory, or elective.

- Elective - if not submitted, you will get no mark for this item. The best of the required submissions will count.

- Mandatory - if not submitted, you will get no mark for this item.

- Compulsory - if not submitted, the result on your academic record will indicate *absent.*

- Optional - you are encouraged to do optional assignments, so that it may benefit your learning.

Mandatory assignments

- All assignments are compulsory.

- These assignments contribute to the year mark.

- If you fail to submit a mandatory assignment, no mark will be awarded, and the year mark is calculated accordingly. You will, therefore, forfeit the marks attached to this assignment when the final mark for the module is calculated.

Compulsory assignment

When not submitted, you will fail a continuous assessment module.

Optional assignments

You are encouraged to do optional assignment, so that it may benefit your learning.

9.6 Other Assessments methods

As indicated in section 9.2, you need to complete 8 assessments for this module. Details on the assessments are available on the module site in the unit folder. **There are no assignments included in this tutorial letter.** The Assignments due dates will be made available to you on the module site and in Tutorial Letter 102. The module uses 16 MCQs (2 MCQs per learning unit), the theory quiz is for self-assessment, and the practical is an assignment.

The INF1511 assignments are elective (Assignment 1 – 8); however, it should be noted that, for exam admission, at least one assignment (either 1, 2 or 3) should be submitted before the end of May. The theory quiz for each unit is for self-assessment. Note that for other modules there are different types of assessment.

9.7 Examination

Examination information and details on the format of the examination will be made available to you online, via the myUnisa site. Look out for information that will be shared with you by your lecturer and e-tutors (where relevant), and for communication from the University.

9.7.1 Invigilation/proctoring

Since 2020, Unisa conducts all assessments online. Given stringent requirements from professional bodies and increased solicitations of Unisa's students, by third parties, to unlawfully assist them with the completion of assignments and examinations, the University is obliged to assure its assessment integrity through the utilisation of various proctoring tools: Turnitin, Moodle Proctoring, the Invigilator app and IRIS. These tools authenticate the student's identity and flag suspicious behaviour, to assure the credibility of students' responses during assessments. The description below is for your benefit, as you may encounter any or all of these tools in your registered modules:

Turnitin is a plagiarism software that facilitates checks for originality in students' submissions against internal and external sources. Turnitin assists in identifying academic fraud and ghost writing. Students are expected to submit **typed** responses for utilisation of the Turnitin software.

The **Moodle Proctoring** tool is a facial recognition software that authenticates students' identity during their quiz assessments. This tool requires access to a student's **mobile or laptop camera**. Students must ensure their camera is activated in their browser settings prior to their assessments.

The **Invigilator** mobile application-based service does verification of the identity of an assessment participant. The Invigilator mobile application detects student dishonesty-by-proxy and ensures that the assessment participant is the registered student. This invigilation tool requires students to download the app from their Play Store (Google, Huawei and Apple) on their **mobile devices** (camera enabled) prior to their assessment.

IRIS invigilation software verifies the identity of a student during assessment and provides for both manual and automated facial verification. IRIS records and reviews a student's assessment session and flags suspicious behaviour by the students for review by an academic administrator. IRIS requires installation on students' **laptop devices,** enabled with a webcam.

Students, who are identified and flagged for suspicious dishonest behaviour arising from the invigilation and proctoring reports, are referred to the Disciplinary Office for formal proceeding.

Please note: Please refer to module assessment information on the module site for information on the IRIS proctoring tool that will be utilised for a formative and the summative assessments. It is critical to have one of the IRIS proctoring tools set up on time to reduce stress during the exam. **The details will be included in Tutorial Letter 102.**

10. ACADEMIC DISHONESTY

10.1 Plagiarism

Plagiarism is the act of presenting the words, ideas and thoughts of others as your own. It is a form of theft. Plagiarism includes the following forms of academic dishonesty:

- copying and pasting from any source, without acknowledging the source
- not including references or deliberately inserting incorrect bibliographic information
- paraphrasing, without acknowledging the original source of the information

10.2 Cheating

Cheating includes, but is not limited to, the following:

- completing assessments on behalf of another student, copying the work of another student during an assessment, or allowing another student to copy your work
- using social media (e.g. WhatsApp, Telegram) or other platforms to disseminate assessment information
- submitting corrupt or irrelevant files, this forms part of examination guidelines
- buying completed answers from so-called "tutors" or internet sites (contract cheating)

For more information about plagiarism, follow the link:

https://www.unisa.ac.za/sites/myunisa/default/Study-@-Unisa/Student-values-and-rules

11. STUDENTS LIVING WITH DISABILITIES

The Advocacy and Resource Centre for Students with Disabilities (ARCSWiD) provides an opportunity for staff to interact with first-time and returning students with disabilities. If you are a student with a disability and would like additional support or need additional time for assessments, you are invited to contact me (Dr Kgopa and kgopaat@unisa.ac.za) to discuss the assistance that you need.

12. FREQUENTLY ASKED QUESTIONS

Please see module site.

13. SOURCES CONSULTED

None

14. IN CLOSING

We wish you well with your studying.

Kind regards

Dr AT Kgopa, Dr PM Gouws, and the INF1511 team

15. ADDENDUM

None