

Tutorial Letter 101/0/2024

Visual Programming I INF1511

Year Module 2024

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, INF1511-2024-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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1 INTRODUCTION

Dear Student

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 eLearning 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 post graduate 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's commitment to serve humanity and shape futures combined with a clear appreciation of our location on the African continent, Unisa's graduates have distinctive graduate qualities which include:

- 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
- the ability to critically analyse and evaluate the credibility and usefulness of information and data from multiple sources in a globalised world with its everincreasing information and data flows and competing worldviews
- how to apply their discipline-specific knowledges competently, ethically, and creatively to solve real-life problems
- 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. Each learning unit has a discussion session. 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 obtain 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 B-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

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 twodimensional 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 studentcentred 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(S) AND CONTACT DETAILS

4.1 Lecturer(s)

Primary lecturer for this module is Dr AT Kgopa.
Department: School of Computing (Information Systems)
Telephone: please use email
E-mail: kgopaat@unisa.ac.za

4.2 Department

You can contact the Department of Information Systems at: franchm@unisa.ac.za

4.3 University

- 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 book(s)

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

5.2 Recommended book(s)

The list of recommended books is presented during the online discussion classes. Recommended books can be requested online, via the Library catalogue.

5.3 Electronic reserves (e-reserves)

None. 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, available at <http://libguides.unisa.ac.za>

- For brief information on the library, go to <https://www.unisa.ac.za/library/libatglance>
- For more detailed library information, go to <http://www.unisa.ac.za/sites/corporate/default/Library>
- Frequently Asked Questions, visit <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, visit <http://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Researchsupport>.
- For library training for undergraduate students, visit <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* brochure is available on myUnisa: www.unisa.ac.za/brochures/studies

This brochure 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, how to access module content, how to view announcements for modules, how to submit assessment and how to participate in forum activities via the following link:

<https://dtlsga.unisa.ac.za/course/view.php?id=32130>

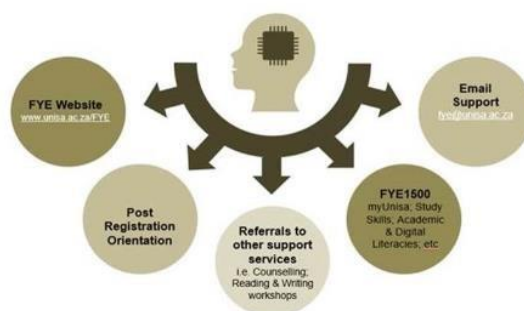
Registered Unisa students get a free myLife e-mail account. Important information, notices and updates are sent exclusively to this account. Please note that it can take up to 24 hours for your account to be activated after you have claimed it. Please do this immediately after registering at Unisa, by 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 remain 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 elearning 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 – this is Unisa's First-Year Experience (FYE) Programme, designed to provide you with prompt and helpful information about services that the institution offers and how you can access information. 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 emails 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 email to fye@unisa.ac.za.



7. STUDY PLAN

See Tut Letter 102 for a proposed schedule to pace you 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 email.
- **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 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 will be required to submit at least 1 assignment by the end of May 2024 (please see exact date on module site).
- The assignment weighting for the module is 30%.
- Please watch out for announcements on 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 assignment for	MCQ Random Selection Linear and Timed, limited attempts, based on discussion of unit	Each of the unit outcomes as detailed above	See Tutorial Letter 102 for details.

Assessment number	Method of assessment	Outcomes covered in assessment	Weight contribution of assessment
each of the 8 learning units)	examples.	and presented during unit discussion session.	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 MCQ Random Selection questions Linear and Timed (60 minutes), only 1 attempt with IRIS proctoring. Details of work breakdown will be shared soonest.	All 8 learning units.	70% of the year mark.

9.3 Assessment 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

- 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 will take place 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 2024 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 module site, you will see a welcome message. Below the welcome message you will see the assessment shells for the assessments 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 where the quiz has been created.
- It is not advisable to use a cell phone to complete the quiz. Please use a desktop computer, tablet or laptop when completing the quiz. Students who use a cell phone 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, cell phones are more vulnerable to dropped internet connections than other devices. **If possible, please do not use a cell phone for this assessment type.**

9.5 Assessments

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.** Assignments and 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 is self-assessment, and the practical is an assignment.

The INF1511 assignments are elective (assignment 1 – 8), where at least 1,2 or 3 before end of May is required for exam admissions. The theory quiz for each unit is for self-assessment. Note that for other modules there are different types of assessment.

Types of assignments and descriptions

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

- Elective - if not submitted, the student gets no mark for this item. The best of the required submissions will count.
- Mandatory - if not submitted, the student gets no mark for this item.
- Compulsory if not submitted, the result on the student's academic record will be *absent*.

- Optional - you are encouraged as a student to do optional assignment so that it may benefit your learning.

Elective assignments

- You are given a choice of which assignments within an identified group to submit, only the best result(-s), the number of which is specified in advance, will contribute towards the year mark.
- The assignments must also be grouped into an elective group.
- You elect which assignment to submit, the elective assignments must be grouped together. For such an elective group, relevant information must be provided to the student, such as how many of the assignments must be submitted and how many of the assignment marks should be combined into the year mark.
- The selection criteria define how marks received for assignments in an elective group are to be combined into the year mark. Three different criteria may be used for calculating the year mark:
- The best mark should be used, or if you submit fewer than the required number of assignments per group or no assignment in a group, a mark of 0% will be used.
- 0% is awarded to all non-submitted or unmarked assessments. A best mark is then calculated from all items.

Mandatory assignments

- Assignments contribute to the year mark.
- If a student fails to submit a mandatory assignment, no mark is awarded and the year mark is calculated accordingly. The student will therefore forfeit the marks attached to this assignment when the final mark for the module is calculated.

Compulsory Assessment

When not submitted, you will fail a Continuous Assessment module but will be shown as absent from the examination in the case of other modules.

Optional assignments

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

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 will authenticate the student's identity and flag suspicious behaviour to assure credibility of students' responses during assessments. The description below is for your benefit as you may encounter any or all of these 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 IRIS tool that will be utilised for a formative and the summative assessments. It is mandatory to have one of the formative assessments utilise IRIS proctoring tool that will be utilised in the summative assessment (exam) to alleviate pressures associated with lack of examination unreadiness by students. **The details will be included in the 102-tutorial letter.**

10. ACADEMIC DISHONESTY

10.1 Plagiarism

Plagiarism is the act of taking the words, ideas and thoughts of others and presenting them 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 (name and e-mail address of the lecturer must be inserted) to discuss the assistance that you need.

12. FREQUENTLY ASKED QUESTIONS

Please see module site.

13. IN CLOSING

We wish you well with your studying.

Kindly

Dr PM Gouws, Dr AT Kgopa and the INF1511 team

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