Tutorial Letter 101/0/2024

Computer Systems: Fundamental Concepts

COS1521

Year Module(s)

Computer Science: School of Computing

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, COS1521-24-Y1, as well as your group website.

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

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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.

Teaching and learning in a CODeL context involves multiple modes of delivery ranging from blended learning to fully online. 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.

Furthermore, our programmes are aligned with the vision, mission and values of the University. 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 are able to 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 ever-increasing 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 fully online.

Whether a module is offered either as blended (meaning that we use a combination of printed and online material to engage with you) or online (all information is available via the internet), we use myUnisa as 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. Look out for information from your lecturer as well as other Unisa platforms to determine how to access the virtual myUnisa module site. 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.

You are encouraged to log into the module site COS1521-23-Y on myUnisa regularly (that is, at least twice per week).

Because this is a fully online module, you will need to use myUnisa to study and complete the learning activities for this module. Visit the website for COS1521-23-Y on myUnisa frequently. You will find the study guide on myUnisa under Official Study Material, as this module does not have a textbook.

We wish you every success with your studies!

2 MODULE OVERVIEW

2.1 Purpose

COS1521 is one of a number of first-level Computer Science modules offered by the School of Computing at Unisa. The purpose of this module is to introduce you to the computer as a system. The module covers hardware concepts such as internal representation of numbers and characters and basic computer architecture, as well as software concepts such as systems software and applications software. It also includes a brief introduction to databases and to systems analysis and design.

Qualifying students can apply the principles of computer systems, hardware and software to solve everyday computing problems through some fundamental introductory knowledge including historical developments, specific skills and underpinning values. This module will support further studies and applications in the sector of Computing, in the fields of Computer Science, Information Systems or Multimedia (either in a BSc, BCom or BA degree). These competencies can contribute to the expansion of the role of computers in the modern data communication world and as a component of an information system in an organisation.

2.2 Outcomes

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

Specific outcome 1
Demonstrate how data is represented, manipulated and stored in a computer by means of number systems, Boolean algebra, Karnaugh maps, truth tables and basic logic circuit drawings, in the context of given problem statements.

Specific outcome 2
Demonstrate an understanding of the basic functions of computers, the software development process and units of hardware and software components.

Specific outcome 3
Demonstrate an understanding of the basics of data communications and networks.

Specific outcome 4
Describe data structures and how different databases function.

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 as a result 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)

The primary lecturer for this module is: To be announced
Department: School of Computing
Telephone: To be announced
E-mail: To be announced

4.2 Department

You can contact the School of Computing as follows:

Telephone number: **011 670 9200**

E-mail: **computing@unisa.ac.za**

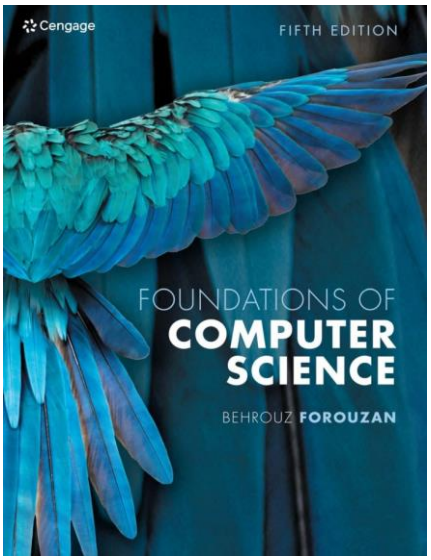
4.3 University

Contact addresses of the various administrative departments appear on the Unisa website: http://www.unisa.ac.za/sites/corporate/default/Contact-us/Student-enquiries.

Please include the student number in all correspondence

5 RESOURCES

5.1 Prescribed book(s)



Authors: Forouzan, Behrouz
Publisher: Cengage Learning UK
Title: *Foundations of Computer Science*
Edition: 5th
Year: 2023
Print ISBN: 9781473787322, 1473787327
eText ISBN: 9781473787346, 1473787343

The prescribed book is also available to buy as eBook at a cheaper price at the following URL:

https://www.vitalsource.com/za/products/foundations-of-computer-science-behrouz-a-forouzan-v9781473787353

The module content is covered in **chapters 1 to 8, 10 to 11 and 14 to 15** of the prescribed book, referred to as **Forouzan** (details are given in section 4.1 of this tutorial letter), and in all the tutorial letters, including Tutorial Letter 102.

The following sections/subsections are excluded from the syllabus: (Note that if you do not use the 5th edition, section numbers and page numbers may differ – so please look at the section headers below to make sure that you exclude the correct section/subsection. We give the page numbers for the 4th edition in brackets).

- **Section 2.3**: Non-positional number systems, pp. 35-36 (4th ed. pp. 31-32)
- Addition and subtraction of reals in floating point format, pp. 90-92 (4th ed. p. 85)
- **In Appendix E**: Product of sums and examples, pp. 583-584 (4th ed. pp. 573-574), plus any further reference to product of sums. The rest of the Appendix is important for the assessments and exam.
- **Section 5.7.3**: Pipelining, pp. 124-125 (4th ed. pp. 114-115)
- **Section 5.7.4**: Parallel processing, p. 127-129 (4th ed. pp. 117-119)
- **Section 5.8**: A simple computer, pp. 129-136 (4th ed. pp. 119-133)
- **Section 8.7**: Recursion, pp. 231-233 (4th ed. pp. 234-236)
- **Section 10.4**: Common concepts, pp. 261-271 (4th ed. Chapter 9, Section 9.4 pp. 257-267)
- **Section 15.5**: Database design, pp. 385-388 (4th ed. Chapter 14, Section 14.5 pp. 381-385)
- **Section 15.6**: Other database models, pp. 389-390 (4th ed. pp. 385-386)

The following topics in the prescribed book are covered:

Chapter 1: Introduction

Chapter 2: Number systems

Chapter 3: Data storage (Appendix A: Unicode)

Chapter 4: Operations on data

Appendix E: Boolean algebra and logic circuits

Chapter 5: Computer organisation

Chapter 6: Computer networks and the internet

Chapter 7: Operating systems

Chapter 8: Algorithms

Chapter 10:Programming languages

Chapter 11:Software engineering

Chapter 13:Data structures

Chapter 14:File structures

Chapter 15:Databases

We refer to the prescribed book as **Forouzan (or F)** throughout this tutorial letter.

Tutorial Letter 102 contains notes on the study material in the prescribed book. It also contains **supplementary study material**.

The prescribed book is **not** included with your study material, so please obtain a copy of **Forouzan** as soon as possible. Prescribed books can be obtained from the university's official booksellers. You will find a list of official booksellers and their addresses in *Study @ Unisa*.

If you have difficulty in locating your book at one of the official booksellers, please contact the Prescribed Book section at 012-4294152, or e-mail vospresc@unisa.ac.za.

5.2 Recommended book(s)

If you would like to know more about a particular topic, you may consult any of the books listed below. These books are not necessarily included in the study collection in the Unisa Library. The library cannot guarantee that they will be available, nor draw up waiting lists for them. Exams and assessments will be based on the prescribed book and the content of Tutorial Letter 102.

CLEMENTS A. *The principles of computer hardware*, 3rd edition. Oxford University Press, Oxford, 2000.

O'BRIEN J.A. *Introduction to information systems*, 8th edition. Irwin, New York, 1996.

HUTCHINSON S.E. and SAWYER S.C. *Computers, communications & information. A user's introduction*, 7th edition. Irwin McGraw-Hill, Boston, 2000.

MARCOVITZ A.B. *Introduction to logic design*. McGraw-Hill Higher Education, New York, 2002.

WILLIAMS B.K. and SAWYER S.C. *Using information technology. A practical introduction to computers & communications*, 5th edition. Irwin McGraw-Hill, Boston, 2003.

CAPRON H.L. and JOHNSON J.A. *Computers. Tools for an information age*, 7th edition. Prentice Hall, Upper Saddle River, New Jersey, 2002.

SHELLY G. and VERMAAT M.E. *Discovering computers 2010. Living in a digital world.* Course Technology, 20 Channel Center Street, Boston, 2010.

Recommended books can be requested online, via the Library catalogue.

5.3 Electronic reserves (e-reserves)

E-reserves can be downloaded from the library webpage. 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

Recommended guides:

- 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/Research-support.
- For library training for undergraduate students, visit https://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Training
- Lending Services https://www.unisa.ac.za/sites/corporate/default/Library/Library-services/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-with-special-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 encountered 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 with regard to the myModules system, you are welcome to use the following contact details:

- Toll-free landline: 0800 00 1870 (Select option 07 for myModules)
- 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:

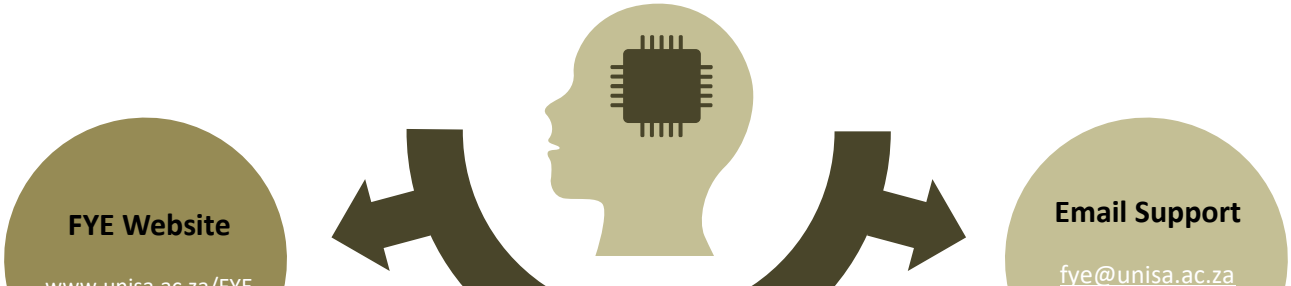
https://dtls-qa.unisa.ac.za/course/view.php?id=32130

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 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 – 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:



To ensure that you do not miss out on important academic and support communication from the SRU, please check your myLife inbox regularly.

7. STUDY PLAN

The study plan will be provided late as the academic calendar was not available when this letter was compiled.

8 HOW TO STUDY ONLINE

8.1 What does it mean to study fully online?

Studying fully online modules differs completely from studying some of your other modules at Unisa.

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

9. ASSESSMENT

9.1 Assessment criteria

The assessment criteria are given for each specific outcome:

Specific outcome 1: Demonstrate how data are represented, manipulated and stored in a computer using number systems, Boolean algebra, Karnaugh maps, truth tables and basic logic circuits drawings, in the context of given problem statements.

Assessment criteria*:*

- Conversions between different number systems (binary, octal, decimal and hexadecimal)
- The application of different arithmetic methods in the binary number system
- The identification of computer data includes the different internal representations
- Explanations include the basic restrictions placed by computer architecture upon numerical computations
- The determination of outputs of basic combinational logic circuits for given inputs
- Graphical representations of the combinational circuits for given Boolean functions
- The simplifications of Boolean functions by implementing appropriate rules/methods
- The determination of a Boolean function for a given problem statement using truth tables (at most 4 variables)
- Boolean expressions and binary logic that describe the behaviour of logic circuits
- The descriptions of the functioning of different types of combinational and sequential logic circuits.

Specific outcome 2: Demonstrate an understanding of the basic functions of computers, the software development process and units of hardware and software components.

Assessment criteria:

- Today's computers are described in context of some short historical background, different architectures and ethical scenarios/issues
- Descriptions of software engineering and operating systems include the development of software in a historical context
- The description of a basic computer includes the three basic hardware subsystems and their interconnecting functioning
- The description of an operating system includes the functioning of its components
- The descriptions of popular operating systems with references to different popular operating platforms
- The definition of an algorithm includes its relation to problem solving
- Definitions of the three algorithm constructs include descriptions of their use in algorithms
- Descriptions of basic algorithms include their applications
- Descriptions of the sorting and searching concepts of algorithms include an understanding of their mechanisms
- Descriptions of sub-algorithms include their relations to algorithms
- Descriptions of the development process models in software engineering include the concepts of the software life-cycle phases and documentation.

Specific outcome 3: Demonstrate an understanding of the basics of data communications and networks.

Assessment criteria:

- Descriptions of physical structures of networks include references to network criteria, physical structures and categories of networks

- The description of the Internet includes the TCP/IP protocol suite with reference to the characteristics of its layers and their relationships
- Descriptions of Internet applications in the context of client-server communications.

Specific outcome 4: Describe data structures and how different databases function.

Assessment criteria:

- Descriptions of data structures include references to the differentiation beween different structures
- Descriptions of file structures include references to updating and access methods, and categories of directories and of files
- Definitions of a database and some traditional database models include the relational database design
- The definition of a database management system (DBMS) includes its architecture
- Descriptions include the steps in database design.

9.2 Assessment plan

Assessment	Due date
1	Will be announced
2	Will be announced
3	Will be announced
4	Will be announced

- To complete this module, you will be required to submit 4 assessments.
- All information about when and where to submit your assessments will be made available to you via the myModules site for your module.
- Due dates for assessments, as well as the actual assessments are available on the myModules site for this module.
- To gain admission to the examination, you will be required to submit at least one assessment by the due date of assessment 1.
- The year mark counts 20% of the exam mark. It is therefore essential that you submit all your assessments.
- The examination will be a timed MCQ exam and will be written online on the myModules platform.
- You will receive examination information via the myModules sites. Please watch out for announcements on how examinations for the modules for which you are registered will be conducted.
- The examination will count 80% towards the final module mark.

9.3 Year mark and final examination

An integrated assessment system is used for this module. **This means that your final mark is based not only on your examination mark, but also on your performance during the year.** Assessments do not only provide you with an opportunity to evaluate your understanding of the prescribed material (or to give you feedback on your readiness for the examination), but also make a contribution towards your year mark.

Your **final mark** will be calculated as follows:

Year mark (out of 100) × 20% + Examination mark (out of 100) × 80%

In order to pass this module, a final mark of at least 50% is required.

Your **year mark** is based on your assessment marks. Different weights are allocated to the individual assessments. If an assessment is not submitted or is submitted late (for whatever reason), no marks are awarded for such an assessment. *It is your responsibility to ensure that your assessments are submitted on time*. Multiple choice assessments are marked by a computer system at a time set out by the Assignment Section of Unisa – lecturers can therefore not give any extension for multiple choice assessments.

There are **4 assessments** for this module. Assessments will be made available on myUnisa. You will be informed where to find your assessments. The following weights are allocated to the individual assessments:

- Assessment 01: **20%**
- Assessment 02: **30%**
- Assessment 03: **30%**
- Assessment 04: **20%**

Example: The following example shows how the assessment system works, assuming that assessments 01, 02, 03 and 04 were all submitted.

Assessmentt	**Mark**	**× Weight**	**Contribution to year mark**	**Type of assessment**
01	90%	× 0.20	18%	MCQ – more details will be given via an announcement
02	90%	× 0.30	27%	MCQ – more details will be given via an announcement
03	90%	× 0.30	27%	MCQ – more details will be given via an announcement
04	90%	X 0.20	18%	MCQ – more details will be given via an announcement
year mark			90%	

The resulting year mark is 90%.

Suppose you obtain 80% in the examination. The final mark will be calculated as follows:

(90 × 0.20)% + (80 × 0.80)% = (18.0 + 64.0)% = 82%.

You can therefore see that in order to get a good year mark that will not influence your examination mark negatively, it is important to put in enough effort in completing your assessments.

Note: The year mark will not contribute towards the final exam of students writing a supplementary examination.

Assessmentt questions will be provided online on myUnisa. Please check the announcements on a regular basis.

9.4 Assessment due dates

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

9.5 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 myModules 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 myModules 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 myModules learning management system. Please access the announcements on your myModules site regularly, as this is where your lecturer will post important information to be shared with you.
- When you access your myModules site for the module/s you are registered for, you will see a welcome message posted by your lecturer. Below the welcome message you will see the assessment shells for the assessments that you need to complete. Some assessments may be multiple choice, some tests, others written assessments, some forum discussions, and so on. All assessments must be completed on the assessment shells available on the respective module platforms.

- 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 at all possible, please do not use a cell phone for this assessment type**.

- For written assessments, please note the due date by which the assessment must be submitted. Ensure that you follow the guidelines given by your lecturer to complete the assessment. Click on the submission button on the relevant assessment shell on myModules. You will then be able to upload your written assessment on the myModules site of the modules that you are registered for. Before you finalise the upload, double check that you have selected the correct file for upload. Remember, no marks can be allocated for incorrectly submitted assessments.

9.5.1 Types of assignments and descriptions

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

- **Elective assignments**
  - If not submitted, the student gets no mark for this item.
  - The best of the required submissions will count.
- **Mandatory assignments**
  - If not submitted, the student gets no mark for this item.
- **Compulsory assignments**
  - If not submitted, the result on the student's academic record will be *absent.*
- **Optional assignments** – You are encouraged as a student to do optional assignment so that it may benefit your learning.

I. Elective assignments

a. the student is 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.
b. elective assignments must also be grouped into an elective group.
c. for the student to select 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.
d. 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 the student submits 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.

II. **Mandatory assignments**
   a. contribute to the year mark.
   b. 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.

III. **Compulsory Assessment**
   a. when not submitted, the student will fail a Continuous Assessment module but will be shown as absent from the examination in the case of other modules.

IV. **Optional assignments** – You are encouraged as a student to do optional assignment so that it may benefit your learning.

9.6 The assessments

As indicated in section 9.2, you need to complete at least 1 assessment for this module. Assessments 1 to 3 test your knowledge of the content as specified in the Study plan document in the Additional Resources folder. Assessment 4 will test your knowledge on ALL the prescribed content. It will contain the same number of questions and will be of the same format as the examination. Therefore you should allow yourself enough time to complete this assessment.

There are no assessments included in this tutorial letter. Assessments and due dates will be made available to you on myModules for this module. We envisage that the due dates will be available to you upon registration.

9.7 Other assessment methods

Tutorial letters 102 and 103 under Additional Resources contain additional self-assessment exercises that you must work through. Your e-tutor will also put self-assessment quizzes on myModules for you.

9.8 The 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.

987.1 Invigilation/proctoring

Since 2020 Unisa conducts all its 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 assessments 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. It has the ability to record and review a student's assessment session. It flags suspicious behaviour by the students for review by an academic administrator. IRIS software requires installation on students' **laptop devices** that are 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:

Students must refer to their module assessment information on their myModule sites to determine which proctoring or invigilation tool will be utilised for their formative and summative assessments.

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).

10.3 For more information about plagiarism, follow the link below:

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

A list of frequently answered questions will be saved under Additional resources on the myModules platform.

13. IN CLOSING

Do not hesitate to contact us by e-mail if you are experiencing problems with the content of this tutorial letter or with any academic aspect of the module.

We wish you a fascinating and satisfying journey through the learning material, and trust that you will complete the module successfully.

Enjoy the journey!