

Tutorial letter 101/0/2026

LINEAR ALGEBRA MAT1503

Year module

Department of Mathematical Sciences

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, MAT1503-26-Y, 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 Students

Welcome to MAT1503, Linear Algebra 1. Please read through this tutorial letter to familiarize yourself with how we will work together this year. Take your time to read through this tutorial letter so that you prepare yourself properly before we start with the teaching and learning in this module. Unisa is a comprehensive open distance e-learning (CODEL) higher education institution. Our comprehensive curricula encapsulate 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 who may not previously have had an opportunity to enrol in higher education registering at the University. 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 are involved in teaching and learning in a CODEL context, ranging from blended to fully online learning. As a default position, all postgraduate programmes are offered fully online with no printed study materials. Undergraduate programmes are offered using a blended mode of delivery where printed study materials are augmented with online teaching and learning via *myUnisa*, our learning management system. 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 serving humanity and shaping futures – combined with a clear appreciation of our location on the African continent – means that Unisa's graduates have distinctive graduate qualities, which include

- being independent, resilient, responsible and caring citizens 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 and taking account of 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 ever-increasing information and data flows and competing worldviews
- knowing 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

The module MAT1503 is offered online, meaning that 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 to 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 your lecturer and fellow students to support your learning will also be communicated via various platforms.

We encourage you to log on to the module site on *myUnisa* regularly (at least twice a week). ([MAT1503-26-Y](#)).

Because this is a fully online module, you will need to use *myUnisa* to study and complete the learning activities. Visit the website for MAT1503 on *myUnisa* frequently. The website for your module is [MAT1503-26-Y](#).

We wish you every success with your studies!

2 MODULE OVERVIEW

2.1 Purpose

This module will be useful to students interested in developing the basic skills in linear algebra which can be applied in the natural and social sciences.

After completing this module successfully, you will be able to have an understanding of the basic ideas of linear algebra and be able to apply the basic techniques for handling systems of linear equations, matrices, determinants and vectors as well as complex numbers.

2.2 Outcomes

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

Specific outcome 1: Solve systems of linear equations and interpret the solutions

- 1.1 Substitution is used to determine if a given sequence of numbers is a solution of a system of linear equations
- 1.2 A representation of a system of linear equations as an augmented matrix is given
- 1.3 Gauss-Jordan, Gaussian or "general" elimination is used to solve systems of linear equations
- 1.4 The properties of solutions (i.e., the existence of no solution, exactly one solution or infinitely many solutions) of a linear system are determined by reducing the system to echelon form.
- 1.5 Values of the coefficients of certain unknowns in a given linear system for which the system has no solution, exactly one solution or infinitely many solutions are determined by reducing the system to echelon form.

1.6 A geometric interpretation of a system of linear equations in two unknowns as the intersection of lines in a plane is given.

Specific outcome 2: Perform basic matrix operations

2.1 Direct computations of addition, subtraction, scalar multiplication and multiplication of matrices are performed correctly.

2.2 The transpose and trace of a matrix are determined correctly

2.3 Counter-examples are given to show that matrix multiplication is not commutative and that cancellation laws for matrices do not hold

2.4 Elementary row operations (or elementary matrices) are used to find the inverse of an invertible matrix.

2.5 Inverses of matrices are used to find the solutions to certain types of linear systems.

2.6 Properties of matrix arithmetic, transposes and inverse matrices are applied correctly

2.7 A distinction between a diagonal matrix, a triangular matrix and a symmetric matrix is made.

Specific outcome 3: Evaluate and use determinants to solve certain of linear equations and to find inverses of invertible matrices

3.1 Cofactor expansion is used to evaluate a determinant.

3.2 The adjoint of an invertible matrix is used to determine the inverse of the matrix.

3.3 Row and column operations are used to simplify a determinant.

3.4 Cramer's rule is used to solve certain linear systems.

3.5 A determinant is used to evaluate a related determinant.

3.6 The determinant of a matrix is used to ascertain if the matrix is invertible.

3.7 The eigenvalues and corresponding eigenvectors of a matrix are calculated.

Specific outcome 4: Perform various operations in 2-space, 3-space and n-space and to find equations for lines and planes in 3-space

4.1 The concepts of equality, sum, difference and scalar product of vectors in 2-space and 3-space are interpreted geometrically.

4.2 Arithmetic operations on vectors in 2-space, 3-space and in n-space are performed correctly.

4.3 Properties of vector arithmetic in 2-space, 3-space and in n-space are applied correctly.

4.4 The norm of a vector and the distance between two points in a vector space are calculated correctly. This applies to :

- the norm of a vector and the distance between two points in 2-space and 3-space
- The Euclidean norm of a vector and the Euclidean distance between two points in n-space

4.5 The products of two vectors in selected vectors spaces are computed correctly. The products refer to:

- Dot product of two vectors in 2-space and 3-space
- Cross product of two vectors in 3-space
- Euclidean inner product of two vectors in n-space

4.6 The dot product or cross product of two vectors is correctly linked to the lengths of the vectors and the angle between the vectors.

4.7 The area of a parallelogram in 3-space is calculated by using the cross product.

4.8 The area of a parallelogram in 2-space and the volume of a parallelepiped in 3-space are calculated by using determinants.

4.9 Equations of lines and planes in 3-space are determined.

4.10 The distance between a point and a plane or the distance between two planes in 3-space is calculated.

Specific outcome 5: Develop problem solving skills based on an understanding of complex numbers, using graphical representation of complex numbers, Polynomial equations, polar form of complex numbers, solving equations of complex numbers, finding the roots of equations

5.1 express complex numbers in Polar form, solve polynomial equations of a complex variable.

5.2 extract n -th roots of any complex number where n is a natural number.

5.3 express relationships between trigonometric functions using complex numbers.

In closing, you should be able to:

1. solve systems of linear equations and interpret the solutions.
2. perform basic matrix operations.
3. evaluate determinants and use them to solve certain systems of linear equations and to find inverses of invertible matrices.
4. perform various operations in 2-space, 3-space and n -space and to find equations for lines and planes in 3-space.
5. express complex numbers in Polar form, solve polynomial equations of a complex variable.
6. extract n th roots of any complex number where $n \in \mathbb{N}$.
7. express relationships between trigonometric functions using complex numbers.

3 CURRICULUM TRANSFORMATION

Unisa has implemented a transformation charter that places 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 are being phased in at both programme and module levels. 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, responsively and within the framework of transformation.

4 LECTURER(S) AND CONTACT DETAILS

4.1 Lecturer(s)

The primary lecturer for this module is: Prof ZI ALI

Department: Mathematical Sciences

Telephone: [011 670 9163](tel:0116709163)

E-mail: alizi@unisa.ac.za

A notice will be posted on *myUnisa* if there are any changes and/or an additional lecturer is appointed to this module.

4.2 Department

You can contact the Department of Mathematical Sciences as follows:

Department of Mathematical Sciences

Departmental Secretary: [011 670 9147](tel:0116709147) (RSA) [+27 11 670 9147](tel:+27116709147) (International)

e-mails: mathsciences@unisa.ac.za or swanemm@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.

Whenever you contact a lecturer via e-mail, please include your student number in the subject line to enable the lecturer to help you more effectively.

5 RESOURCES

5.1 Prescribed book(s)

The prescribed book for this module is

Title:	Elementary Linear Algebra with Supplemental Applications
Author:	Anton, Howard and Rorres, Chris
Publishers:	WILEY
Edition:	Eleventh Edition
Year:	2015
ISBN:	978-1-118-67745-2

You are welcome to use the newest edition below.

Title: **Elementary Linear Algebra, Applications Version**
Author: Anton, Howard & Torres
Edition: **12th Edition**, EMEA Edition (published 2020)
Year: 2020
Print Book ISBN: N: 978-1-119-66614-1
eBook ISBN: 978-1-119-67080-3

You are also welcome to download and use the 11th edition below from the Library website:

Title: **Elementary Linear Algebra, Applications Version**
Author: Anton, Howard & Torres
Edition: **11th Edition**, EMEA Edition (published 2020)
Year: 2020
Print Book ISBN: 978-1-118-43441-3

Please buy the textbook as soon as possible since you have to study from it directly – you cannot do this module without the prescribed textbook.

Please refer to the list of official booksellers and their addresses in the *Study @ Unisa* brochure. Prescribed books can be obtained from the University's official booksellers. If you have difficulty in locating your book(s) at these booksellers, please contact the Prescribed Book Section at Tel: **012 429-4152** or e-mail vospresc@unisa.ac.za.

5.2 Recommended book(s)

The following is a publication that you may consult in order to broaden your knowledge of MAT1503. A **limited** number of copies is available in the Library.

- Kolman, Bernard & Hill, David R.: *Introductory Linear Algebra; An Applied First Course* (8th edition or earlier), Prentice Hall, 2005.

The following books are also available at the Unisa Library. However, there is a limited number of copies of these books.

- Ayres, Frank: *Schaum's Outline of Theory and Problems of Matrices*, McGraw-Hill, New York, 1974.
- Cullen, Charles G.: *Matrices and Linear Transformations*, Addison-Wesley, Reading, MASS., 1972.
- Johnson, Lee W.: *Introduction to Linear Algebra* (2nd or earlier editions), Addison-Wesley, Reading, MASS., 1989.
- Knopp, Paul J.: *Linear Algebra, an Introduction*, Hamilton Publishing Co., Santa Barbara, CALIF., 1974.

- Lipschutz, Seymour: *Schaum's Outline of Theory and Problems of Linear Algebra*, McGraw-Hill, New York, 1968.
- Nering, Evar D.: *Elementary Linear Algebra*, W.B. Saunders Publishing Co., Philadelphia, 1974.
- Nicholson, W.K.: *Linear Algebra with Applications* (3rd edition), PWS Publishing Company, Boston.
- Grossman, Stanley I.: *Elementary Linear Algebra* (any edition), Wadsworth Publishing Co., Belmont, CA., 1991.
- Anton, Howard and Rorres, Chris: *Elementary Linear Algebra; Applications Version*, (10th edition, 2011), John Wiley & Sons, Inc
- **NOTE:** Do not feel that you **should** study from these books, simply because we have provided you with this list. Sometimes, however, if one really gets bogged down on a particular section or part of the work, a different presentation might just be what is needed to get going again.

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

5.3 E-reserves

E-reserves can be downloaded from the Library catalog. 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 and has made 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>
- For Frequently Asked Questions,
go to
<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 literature search request (on your research topic) service, offered by the Information Search Librarian, go to
<http://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Research-support>.
- For library training for undergraduate students, go to
<https://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Training>
- For lending Services, go to
<https://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Lending-services>
- For services for Postgraduate students, go to
<https://www.unisa.ac.za/sites/corporate/default/Library/Services-for-Postgraduates>
- For support and Services for students with disabilities, go to
<https://www.unisa.ac.za/sites/corporate/default/Library/Services-for-students-with-special-needs>
- For library technology support, go to <https://libguides.unisa.ac.za/techsupport>
- For information on finding and using library resources and tools, go to
<http://libguides.unisa.ac.za/Research skills>
- For an A-Z list of library databases, go to <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
- Services and resources available to clients living with disabilities: lib-disability@unisa.ac.za
- Library book requests from, and book deliveries to Correctional Services: lib-corrections@unisa.ac.za

- Social media channels: Facebook: [UnisaLibrary](#) and X (Twitter): [@UnisaLibrary](#)

To view the Library orientation video – please click on the link below.
[Unisa Library and Information Services](#)

6 STUDENT SUPPORT SERVICES

6.1 Study @ myUnisa Publication and myModules

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

It contains important information and guidelines for successful studies through Unisa.

If you need assistance with 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: mymodules22@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 assessments and how to participate in forum activities by visiting:

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

Registered Unisa students receive a free myLife e-mail account. Important information, notices and updates are sent exclusively to this account.

Please claim your e-mail account immediately after registering at Unisa by following this link: myLifeHelp@unisa.ac.za. Note that it can take up to 24 hours for your account to be activated after you have claimed it.

Your myLife account is the **only** e-mail account recognised by Unisa for official correspondence between you and the University and it will remain your official primary e-mail address on record at Unisa.

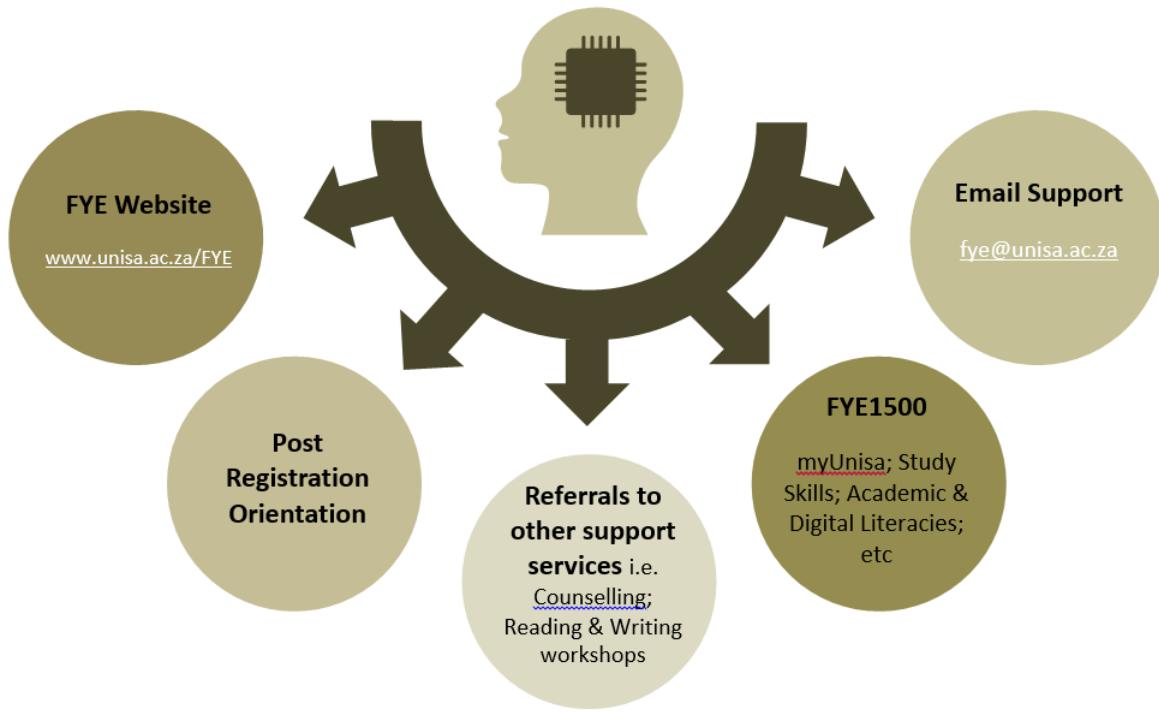
You remain responsible for the management of this e-mail account.

6.2 The Unisa First-Year Experience Programme

Many students find the transition from school education to tertiary education stressful and this is often true for students enrolling at Unisa for the first time. Unisa is a dedicated open distance and e-learning institution and is very different from face-to-face/contact institutions. It is a mega university, and all its programmes are offered through either blended learning or fully online learning. For these reasons, we offer first-time students additional/extended support to help them navigate the Unisa teaching and learning journey seamlessly and with little difficulty and few barriers.

Unisa's First-Year Experience (FYE) Programme has been specially designed to provide you with prompt and helpful information about the services that the institution offers.

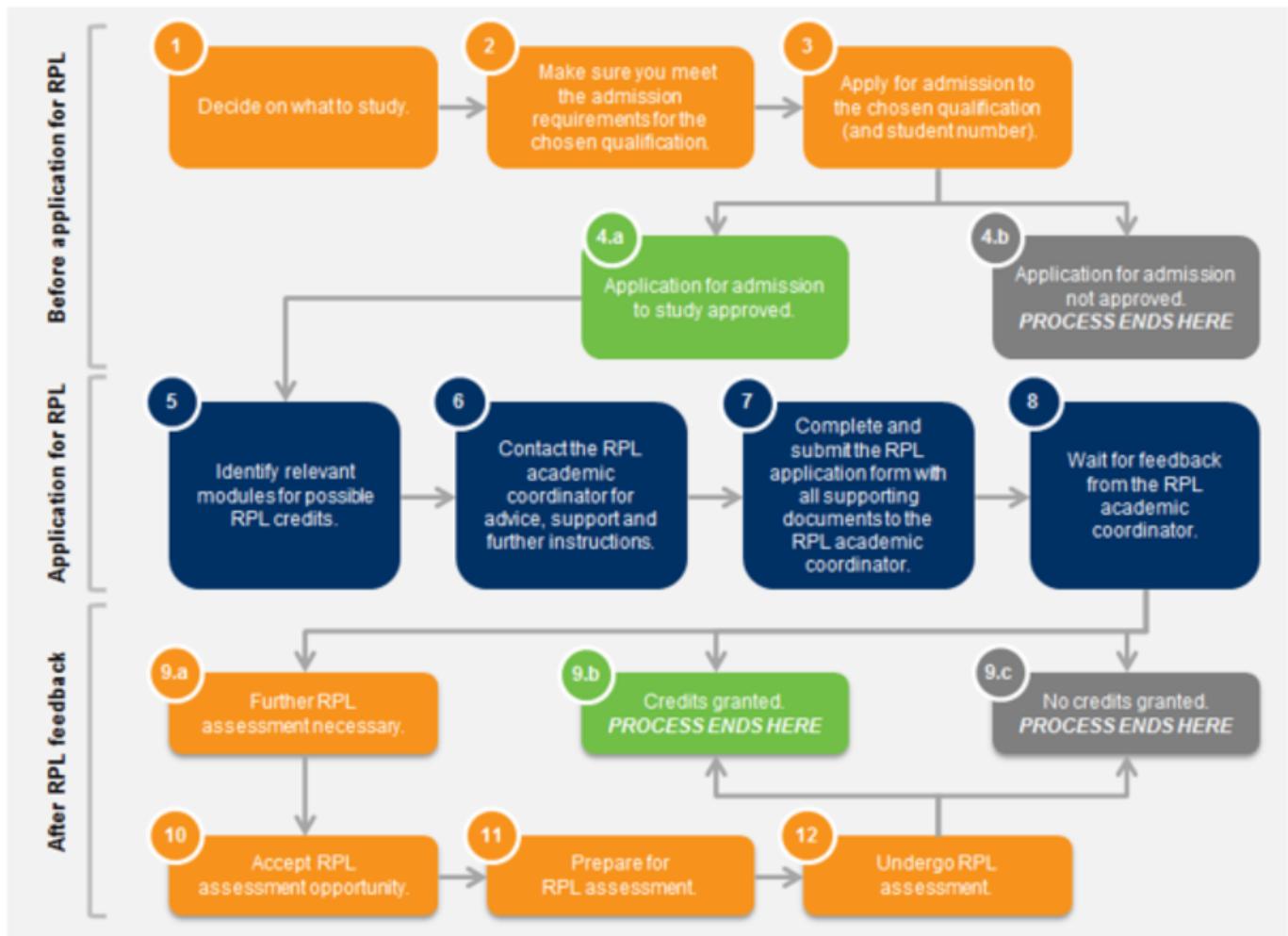
The following FYE services are currently available:



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

6.3 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



6.4 Compulsory Completion of the Academic Integrity Course

Students registered for NQF 5 - 8 programmes are required to complete the Academic Integrity Course annually.

Academic integrity represents our commitment to and demonstration of honest and ethical behaviour in academic settings. Academic integrity is a foundational principle at Unisa, underpinning the quality and credibility of our qualifications. At its core, the Academic Integrity Course is designed to advance values such as discipline, fairness, honesty and commitment, which are important to your success as a student and your future as a professional.

The course can be accessed at: <https://mooc.unisa.ac.za/>. Use your myLife-credentials to log in.

For new students

If you are a new student enrolling for the first time in 2026, you must complete the full Academic Integrity Course as part of your orientation. This course is designed to instil academic values and equip you with the necessary skills required to uphold integrity throughout your academic journey.

The course comprises five comprehensive study units:

1. Unisass values and mission on academic integrity principles
2. Defining academic integrity in an open distance learning (ODL) environment
3. Basic skills in academic writing
4. Ethical usage of artificial intelligence
5. Unisa's processes in identifying academic misconduct and detection tools

For returning students

Those of you who completed the Academic Integrity Course in 2025 are required to complete the refresher version of the course in 2026. This course serves to reinforce the principles and practices of academic integrity. While it is a shortened version of your previously completed Academic Integrity Course, it remains compulsory and must be completed within the specified period.

The refresher course aims to:

- Reinforce understanding of academic integrity principles
- Update you on any changes in policies or practices
- Ensure continued commitment to ethical academic conduct

For both new and returning students, it is important to complete the respective versions of the Academic Integrity Course within the specified periods. Unisa remains steadfast in its commitment to fostering a culture of honesty, fairness and responsibility. Non-compliance may lead to academic consequences as outlined in Unisa's Student Rules. For support, contact mymodule22@unisa.ac.za

7 STUDY PLAN

Your study plan of the module is outlined below. Please refer to the general management and planning skills guidelines in the Studies @ Unisa Brochure for further details.

The study plan below shows the content to be covered during specific periods of the year in terms of the broad concepts or topics, the study guide units and the prescribed book chapters. Your studies will be largely guided by the tutorial discussions and learning activities, and the assignments, which are all based on the same study plan. You should therefore participate as much as possible

in the tutorial discussions and complete assignments and the learning or self-assessment activities linked to each topic in order to do well in the assignments, and for you to be well prepared for the final examination.

NB Note that at least one assignment is compulsory. Note that Assignment 1 is the first compulsory assignment and it might include other parts of the units in the prescribed book or the study guide, please don't be surprised to see questions from different units. You need to submit more than one assignment to get admission into the exam.

Month	Activities
January-April	Read Tutorial Letter 101(this letter). Read pp iii to xii of the Study Guide and the sections of HC to which these pages refer. Make sure you have all your study material as well as other items such as assignment covers. Study Chapters 1 of HC as well as Units 1 of the Study Guide. Prepare for Assignment 1.
April	Submit Assignment 1. Study Chapters 1 & 2 of HC as well as Chapters 1-2 of the Study Guide. Prepare for Assignment 2.
May	Submit Assignment 2. Study Chapters 1-3 of HC as well as Units 1-3 of the Study Guide. Prepare for Assignment 3.
June	Submit Assignment 3. Study Chapters 2-3 of HC as well as Chapters 2-3 of the Study Guide. Prepare for Assignments 4 & 5.
July	Submit Assignments 4 & 5. Study Chapters 3-4 of HC as well as Chapters 2, 3 & 4 of the Study Guide. Prepare for Assignment 5.
August	Submit Assignment 5. Study Chapters 3-4 & Appendix of HC as well as Chapters 3-4 of the Study Guide. Prepare for Assignments 5.
September	Submit Assignments 5. Study all the Chapters and revise your work. Prepare for the exam.
September	Prepare for the exam. Work through the solutions of Assignments 3 to 5 and learn from your mistakes.
September-October	Study for the exam.
October-November	Write the exam.
December	ENJOY YOUR HOLIDAY!

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 assignments (assessments) must be submitted online. This means that you will do all your activities and submit all your assignments on myUnisa. In other words, you do **NOT** post your assignments to Unisa using the South African Post Office. You do **NOT** send assignments by email as such will not be considered for marking or a zero mark will be awarded.
- All communication between you and the University happens online. Lecturers will communicate with you via e-mail and Chats, Blogs, and use the Announcements, the FAQs, the Discussion Forums and the Questions and Answers tools. You can also use all of these platforms to ask questions and contact your lecturers.

8.2 myUnisa Tools

It is very important that you log in to myUnisa regularly. We recommend that you log in at least once a week to do the following:

- Check for new announcements on the module site. You can also set your myLife e-mail account so that you receive the announcement e-mails on your cellphone.
- Read the notices on the myUNISA landing page.

9 ASSESSMENT

9.1 Assessment criteria

There are FIVE assignments and one examination for this module.

Examination admission.

Please note that lecturers are not responsible for examination admission, and ALL enquiries about examination admission should be directed by e-mail to exams@unisa.ac.za

You will be admitted to the examination if and only if at least one assignment reaches the Assignment Section before the exam admission date and also obtain a minimum of 40% in the assignments combined

Note that your marks for the assignments contribute 30% to your final mark (the remaining 70% is contributed by the final examinations).

9.2 Assessment plan

- To complete this module, you will be required to submit *five* 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 assignment and meet the above requirement.
- To gain admission to the examination, you also need to obtain a year mark average of 40% for the assignments.
- The assignment weighting for the module is 30 %.
- 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 70% towards the final module mark.

Please note that this module has a total of **FIVE** assignments consisting of THREE written assignments (02-04) and TWO of which are Quiz (multiple-choice) assignments (Assignment 01 and 05).

The questions for the assignments are given online on the module site. For each assignment there is a **FIXED CLOSING DATE**; the date by which the assignment **must reach** the university (the student must submit the assignment online). Solutions for each assignment as Tutorial Letter 202, ..., 204. will be uploaded on *myUnisa* under Additional Resources few days after the closing date. **Late assignments will be marked, but will be awarded 0%.**

Written assignment

Not all the questions in the written assignment will be marked and you will also not be informed beforehand which questions will be marked. The reason for this is that Mathematics is learnt by “doing Mathematics”, and it is therefore extremely important to do as many problems as possible.

You can self assess the questions that are not marked by comparing your solutions with the solutions in the tutorial letter under Additional Resources.

Note that at least one assignment and 40% is the compulsory rule for admission to the examination and must reach (submit online) us by the due date.

The assignments have a combined 30% contribution towards the final mark.

The Written assignments can only be submitted online electronically through myUnisa.

The feedback to assignments 02-04 will be uploaded on myUnisa using a Tutorial Letter 202 - 204. There is no feedback to assignment 05.

Feedback to Assignments	Tutorial Letters
02	202
03	203
04	204

Please note that there is no feedback to Assignment 01 and no feedback to Assignment 05.

The assessments together with the contributions of assignments to the year mark are as follows;

Assignment	Method of assessment	Outcomes covered in assessment	Weight (%)	Due date
01	online	See the Assessment Plan	6	see myUnisa
02	Written	See the Assessment Plan	6	see myUnisa
03	Written	See the Assessment Plan	6	see myUnisa
04	Written	See the Assessment Plan	6	see myUnisa
05	Written	See the Assessment Plan	6	see myUnisa
Total		See the Assessment Plan	30	

*Because this is an online module, the assignments are not provided in this tutorial letter. Instead, the assignments are provided online as they become due. You will see and access them when you go online.

9.3 Assessment/Assignment due dates

- No assessment/assignment due dates are included in this tutorial letter. .

- Assessment/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 on 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 CODeL institution, is moving towards becoming an online institution. You will see, therefore, that all your study material, assessments and engagements with your lecturer and fellow students will take place online. To facilitate this, we use myUnisa as our virtual campus.
- The *myUnisa* virtual campus will offer students access to the **myModules site**, where learning material is available online and where assessments should be completed. Together, myUnisa and myModules form an online system that is used to administer, document and deliver educational material to you and to support engagement between you and Unisa's academics.
- The myUnisa platform can be accessed via <https://my.unisa.ac.za>. Click on the myModules 2026 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 get the most out of using myUnisa. Please access the Announcements on your myModules site regularly, as this is where we will post important information.
- 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 may be tests or written assessments/assignments, others may be 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 the 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 quizzes. Please use a desktop computer, tablet or laptop for this task. Students who use cellphones 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 at all possible, please do not use a cellphone for this type of assessment.**
- For written assessments/assignments, please note the due date by which your work must be submitted. Ensure that you follow the guidelines given to complete the assessment/assignment. Click on the submission button on the relevant assessment shell on myModules. You will then be able to upload your written assessment to the myModules site for the modules that you are registered for. Before you finalise the upload, double-check that you have selected the correct file for uploading. Remember, no marks can be awarded for incorrectly submitted assessments/assignments.

9.4.1 Types of assignments and descriptions

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

- **Elective assignments**

- If you do not submit this assignment, you get no mark for it.
- Only the best results of the required submissions will count towards your year mark.

- **Mandatory assignments**

- The mark for this assignment contributes to the year mark.
- If you do not submit a mandatory assignment, no mark is 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 assignments**

- If you do not submit a compulsory assignment, the result on your academic record will be *absent*.

- **Optional assignments**

- You are encouraged to do optional assignments to benefit your learning.

9.5 The assessments/assignments

As indicated in section [9.2](#), you need to complete 5 assessments for this module, three written assessments and two multiple-choice (Quiz) assessments. Details of the tasks set will appear on the assessments/assignments themselves.

There are no assignments included in this tutorial letter. Assignments 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.

Make sure that you do the correct assignments.

Solutions will be available on *myUnisa* under Additional Resources before the examination date. In addition, the feedback to each assignment will be discussed live on MS Teams and we urge to all tune into the module site for announcements and attend the live discussions.

9.5.1 Quiz or Multiple - Choice assignments

There are two MCQ assignments in this module: Assignment 1 and Assignment 5. Assignment 1 is a mixed assignment with a combination of MCQ questions and file upload questions. The file upload questions will be marked by the lecturer before the marks can be released. This means that Assignment 1 is a mixture of MCQ questions and file upload questions. You will need to scan and upload your solutions for the file upload questions, and the system will partially mark the MCQ questions. Assignment 1 will be marked by the lecturer, while Assignment 5 will be auto-marked by the system. Note that Assignment 1 is not auto-marked.

Answers for the MCQ questions are entered directly on *myUNISA* after accessing the assignment on the module site.

Assignment 1 can be timed. Please make sure to access it only when you are ready to do so. Make sure you master all the basic concepts in sections 1.1 to section 1.7 of the prescribed textbook before you attempt to access Assignment 1. Since it is difficult to mark Assignment 1, therefore, you will only be given one attempt to submit your answers for Assignment 1. Please do not exhaust this attempt as you will not be given another chance to submit.

9.5.2 Written Assignment

The rules for written assignments are:

- Please keep a copy of your answers.
- Submit answers in numerical order.
- Keep to the due dates.
- Write your assignment by hand clearly with a black pen.
- Marks may be deducted or not given if answers are scratched out, canceled or difficult to read.

Write your answers down in the correct order and make sure that every answer is numbered clearly. Make sure that your answers are clear and unambiguous. Do not string a series of numbers together without any indication of what you are calculating.

Use logic signs for example the equal sign (=) correctly. The correct units must be shown in your answer where applicable.

Note that we are not only interested in whether you can get the correct answer, but also in whether you can formulate your thoughts correctly. Mere calculations are not good enough - you have to make sure that what you have written down consists of mathematically correct notation, which makes sense to the marker.

Students must submit their own work, kindly see Section 10 below which refers to academic dishonesty. Of course, it is a good thing to discuss problems with fellow students. However, where copying has clearly taken place then disciplinary action will be taken in due course.

You should submit written assignments electronically via myUnisa. Assignments should not be submitted by e-mail.

To submit via myUnisa:

Scan your handwritten assignment answers to be submitted electronically. Your assignment will be marked electronically. Please make sure that it is easy to read. Your assignment must be combined in one pdf document. Only one document can be uploaded per assignment. In order to submit your assignment, you need to login into *myUnisa* with your student number and password then select the module from the drop-down menu on *myModules*. Scroll down and click on the assessment number you want to submit. Follow the instructions on the screen to submit your pdf document for grading. Make sure to click on submit after uploading your answer file. Note that your marked assignment will be available on *myUnisa* for viewing.

Note that Assignments 2-4 are written assignments.

9.6 Other assessment methods

There are no other assessment methods for this module MAT1503 except the examination (see details in Subsection 9.7 below).

9.7 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 from your lecturer and e-tutors (where relevant), as well as for communication from the University

If you are registered for this module in 2026 then you will write the examination in **October/November 2026**.

Below are some of the exam rules:

1. The exam for this module will be a QUIZ which is an MCQ type examination and it will be a fully online examination.
2. Students are provided only ONE (1) submission opportunity for their MCQ examinations and it must within the allowable examination duration. No additional time will be allocated for re-submissions.
3. Students are advised that the examination duration time commences as the students starts their examination. No additional reading time is provided.

4. Students are NOT allowed to use their cellphone to respond to the MCQ examination, students are advised to use their private laptops with the operating system before commencing the examination. Also clear the cache and cookies memory prior to starting your exam.
5. DO NOT open your examination in multiple browser windows or tabs at the same time. If you do so, the system will automatically submit responses on your behalf without your knowledge. Marks awarded for automatic submissions will be final marks. No additional opportunity for re-submissions will be given no matter the circumstances.
6. DO NOT click your browser's back button while taking your examination. Students are at risk of losing previous responses should they utilise browser navigation buttons. If the exam is set at random then students are advised to always use the available navigation buttons to move to the next and previous (if allowed) question, and to "Save" and "Submit".
7. SAVE your responses often if multiple questions are displayed on the page.
8. The system will automatically save your responses should one question be displayed per page as you click next or previous to move on to the next or previous question.
10. Students who have not utilised invigilation or proctoring tools will be subjected to disciplinary processes (only include if applicable to your module as per attached invigilated module list above).
11. Students suspected of dishonest conduct during the examinations will be subjected to disciplinary processes. UNISA has a zero tolerance for plagiarism and/or any other forms of academic dishonesty.
12. Queries that beyond Unisa's control include:
 - a. Personal network or service provider issues
 - b. Load shedding/Limited space on personal computer
 - c. Crashed computer
 - d. Using work computers that block access to myExams site (work firewall challenges)
 - e. Unlicensed software (e.g., license expires during exams)
13. Students experiencing technical challenges should contact the SCSC 080 000 1870 or email Examenquiries@unisa.ac.za or refer to Get-Help for the list of additional contact numbers. Communication received from your myLife account will be considered.

Please note:

- The exam is a two hour examination.
- The use of a pocket calculator is not permitted during examination. You are **NOT** allowed to use a calculator during the exam.

The examination questions will be made out of the exam scope, and it will be similar to the questions asked in the study guide and in the assignments. However, please beware that it will not be the same to the questions asked in the study guide and in the assignments.

9.8 Invigilation/proctoring

Since 2020, Unisa has been conducting all its assessments online. Given the stringent requirements imposed by professional bodies, as well as increased solicitation of Unisa's students by third parties to unlawfully assist them with the completion of assignments and examinations, the University is obliged to assure the integrity of its assessment by using various proctoring tools: Turnitin, Moodle Proctoring, The Invigilator app and IRIS. These tools authenticate your identity and flag suspicious behaviour to assure the credibility of your 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 plagiarism software that facilitates checks for originality in your submissions against internal and external sources. Turnitin assists in identifying academic fraud and ghostwriting. You are expected to submit **typed** responses when using the Turnitin software.

The **Moodle Proctoring** The Moodle Proctoring tool is facial recognition software that authenticates your identity during your quiz assessments. This tool requires access to your **mobile or laptop camera**. You must ensure that your camera is activated in your browser settings prior to starting your assessments.

The Invigilator is a mobile application-based service that verifies the identity of an assessment participant. It detects student dishonesty-by-proxy and ensures that the assessment participant is the student registered for the module concerned. This invigilation tool requires you to download the app from the Google Play Store (Android devices), the Huawei AppGallery (Huawei devices) or the Apple App Store (Apple devices) on your **camera-enabled** mobile device prior to starting your assessment.

IRIS Invigilation software verifies the identity of a student during assessment and provides for both manual and automated facial verification. It can record and review your assessment session and it flags suspicious behaviour for review by an academic administrator. IRIS software requires installation on your **webcam-enabled laptop device**.

Students who are identified and flagged for suspicious or dishonest behaviour arising from the invigilation and proctoring reports will be referred to the disciplinary office for formal proceedings.

Please note:

Refer to your module assessment information on the myModules sites to determine which proctoring or invigilation tool will be used for your formative and summative assessments.

Note that Assessment 5 (Assignment 5) will utilise the Moodle Proctoring tool or the IRIS invigilation software in order for you to practice the use of protoring before the examination.

Supplementary

If you are registered for this module in 2026 then you will write the supplementary examination in **January/February 2027**.

During the course of the year, the Examination Section will provide you with information regarding the examination in general, examination websites, examination dates and examination times and that including the supplementary examination.

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 below:

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

11 STUDENTS LIVING WITH DISABILITIES

Unisa provides equal opportunities for all students. The university respects the rights of students to disclose or not disclose any disability.

For more information on services and support offered to students with disabilities, access
<https://www.unisa.ac.za/sites/corporate/default/Apply-for-admission/Students-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.
You can send an email to ARCSWiD via Arcswid@unisa.ac.za

or contact the university using the available numbers:

Tel: +27 12 429 6923 / 6924 / 6540 / 3829 / 8668 / 6050 / 2607 or +27 12 441 5470 / 5471

Should your disability require you to have extra time to write the examination it is important to register the disability so that the exam department can make the necessary arrangements.

If you are a student with a disability and would like additional support or need additional time for assignments, you are more than welcome to contact your lecturer (alizi@unisa.ac.za) to discuss any assistance that you need.

12 FREQUENTLY ASKED QUESTIONS

In addition to the online available FAQs we draft some few Q&A to assist you in this module.

Question: Can I get an extension on the due date for my assignments?

Answer: Yes, with good reasons. E-mail lecturer for permission. Remember, an extension can impact your exam admission. If there is no assignment submission when the exam department runs the admission program you will not be able to write the exam.

Warning: Do not submit an empty or corrupt file. The lecturer will delete such submissions and it will count against you or you may be awarded a zero mark after the submission due date has lapsed.

Question: May I use a calculator in the examination?

Answer: NO, the use of any calculator is NOT allowed in this module.

Question: Where do I get memorandums for past papers?

Answer: No memorandums are supplied, but the lecturer may decide to post some solutions or answers only under the Additional Resources folder on myUNISA.

Question: What does the letters FC after my module code mean?

Answer: FC stands for Financial Cancellation. You may continue your studies and even write the examination, but no results will be released before your student account has been paid in full and the module reinstated.

The *Study @ Unisa* brochure contains an A-Z guide of the most relevant study information.

13 SOURCES CONSULTED

The Study Guide and the prescribed textbook were consulted in preparing this tutorial letter.

14 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!

Prof Z.I. Ali – Lecturer for MAT1503

Department of Mathematical Sciences

ADDENDUM A: Additional Notes and Curriculum Transformation

Please note the following important information regarding this module:

- It is essential to have a strong grasp of the module's content to effectively complete assignments and solve related problems independently. To support your understanding, video notes will be uploaded to the [Additional Resources folder](#) in the main module as well as under the Lesson's sections.
- In order to fully comprehend the concepts and derive maximum benefit from this course, you have the option to request MS Teams meetings for live discussions with the lecturer. These sessions will include recordings and video notes that will also be shared with your fellow students.
- The lecturers for this module will conduct live discussions on MS Teams to facilitate engagement and interaction among students. These sessions are designed to enhance your understanding of the concepts. On certain occasions, Zoom may also be utilized for these discussions.
- Feedback on assignments will be provided through live discussions on MS Teams with the lecturers. These discussions will be interactive, enabling students to actively participate and contribute. Please note that the discussions might occasionally utilize Zoom.
- Throughout the year, glossaries of terms in African languages may be made available to you. These glossary files will be accessible exclusively online via the main module site [MAT1503-26-Y](#).

Please keep these notes in mind to ensure a comprehensive understanding of the module and to make the most of the available resources and opportunities for engagement.

ANNEXURE A: GLOSSARY OF TERM

The Glossary of terms will be uploaded online only.

ADDENDUM B: Assignments

There are two multiple-choice assignments, Assignments 1 and 5. Assignments 1 and 5 will be marked by the system. However, the file upload questions do not count. You can either ignore them or do them, it will not make any difference. Assignment 5 will be auto-marked by the system and the marks will be available immediately for the students after submissions. Hence the closing dates for both assignments are fixed and no extension of time can be granted.

Before you attempt to enter your answers, please study in detail the relevant chapter of the prescribed book under the Section [7](#) and also the publication My Studies @ Unisa.

Note that your assignment will not be returned to you. Please keep a record of your answers so that you can compare them with the worked out solutions after the feedback.

In each of the questions in Assignments 1 and 2, four, five or six or more possible answers are given. In each case, mark/select the number of the answer that you think is correct.

For each correct answer you obtain either 1 or 2 or 3 or more marks and for each incorrect one you may lose 1 mark. The total for the multiple-choice Assignments 01 and 05 will be given on the module site.