

Tutorial Letter 101/0/2023

Development Software IV

IRM4724

Year Module

Department of 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, IRM4724-23-Y

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 involve 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

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

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 on myUnisa regularly (that is, at least twice per week). Visit the website for IRM4724 on the Moodle system frequently.

Given the nature of this module, you can read about it and find your study material online. Go to the myUnisa website at <https://my.unisa.ac.za> and log in using your student number and password. Click on "myModules" at the top of the web page and select IRM4724-23-Y from the dropdown arrow.

We wish you every success with your studies!

2 MODULE OVERVIEW

2.1 Purpose

Students who have completed this module successfully will be able to work with all major mobile and web cross-platform applications (apps) development. The module introduces cross-platform app design as an excellent starting point for mastering app development. The module presents numerous apps that students can adapt to different projects. The module introduces HTML5, CSS3, JavaScript, jQuery Mobile, Node.js, JSON, localStorage, sessionStorage, NoSQL using MongoDB, SQL using MySQL, templating using handlebars, and maps. A strong app-centric view emphasises appropriate subsets of these technologies to help students develop non-trivial apps. While apps continue to evolve and change, the technologies presented form the backbone of future cross-platform app development. Students will learn to work with all the major mobile and web platforms using the active learning approach that will have them typing code in parallel as the apps are developed. Exercises will further encourage students to make changes to the code and evaluate resulting app behaviour

2.2 Outcomes

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

Learning outcome
1. Develop, install and test applications.
Assessment criteria
1.1 Create a simple HTML5-based app.
1.2 Place the app on the web for general access through the internet.
1.3 Enhance web presentation with CSS3 and add multimedia to the web page, including images and video.

Learning outcome
2. Make apps interactive through data input.
Assessment criterium
2.1 Learn JavaScript, jQuery for mobile devices, embedding JavaScript in a web page, using external JavaScript file on the web page and using CSS3 elements designed for mobile devices.

Learning outcome
3. Make apps do significant computing.
Assessment criterium
3.1 How to validate input, do computations based on input, do computational and iterative computing and use arrays in JavaScript.

Learning outcome
4. How to use a menu-driven app to monitor important indicators.
Assessment criterium
4.1 Secure an app with a password, create a numeric pad for input and navigate using menus:

Learning outcome
5. Understand data storage and retrieval.
Assessment criteria
5.1 Understand what local storage is.
5.2 Store and retrieve data locally on the device.
5.3 Check a password.
5.4 Accept and managing user profiles
5.5 Store and manage an array of records.

Learning outcome
6. Study the basis of canvas drawings.
Assessment criteria
6.1 Work with canvas and draw various shapes and graphs.
6.2 Run an app locally with no internet connection.

Learning outcome
7. Use servers for sharing and storing information.
Assessment criteria
7.1 Set up syncing of information to a server.
7.2 Use the MongoDB server for sharing and storing information.
7.3 Use a relational database server for sharing information.

Learning outcome
8. Use web templates.
Assessment criterium
8.1 Use a web template to build an app.

Learning outcome
9. Work with image databases, maps and location tracking.
Assessment criterium
9.1 Obtain the location information and use this to enhance the user experience with the help of maps.

Learning outcome
10. Understand cross-platform and native app development and testing.
Assessment criterium
10.1 Discuss the hardware and software development tools necessary for native app development.

3 CURRICULUM TRANSFORMATION

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

4 LECTURER(S) AND CONTACT DETAILS

If you experience problems with your studies during the year, please feel free to e-mail (most preferable) or phone, your lecturer. Always include your full name, student number and course code in all correspondence.

4.1 Lecturer

Lecturers may be subject to change from year to year. The name(s) and contact details of the lecturer(s) responsible for this module can be found in the Tutorial Letter entitled **COSALL/301/0/2023**, which is compiled by the School of Computing. The details of the lecturer responsible will also be supplied in the welcome message on myUnisa.

The primary lecturer for this module is **Mr Elias Tabane**.

Department: Information Systems

Telephone: 011 471 2620

Email: Tabane@unisa.ac.za

When you contact the lecturer, please include your student number to enable the lecturer to help you more effectively.

4.2 Department

The Computer Science Department within the School of Computing is situated on the Science Campus in Florida. The department can be contacted at 011 670 9200 or via e-mail to computing@unisa.ac.za. Should you be unable to reach any of the lecturers for IRM4816, leave a message and your contact details with one of the secretaries, who can be contacted via the number given above.

4.3 University

To contact the university, follow the instructions in the brochure *Study @ Unisa*, which you received with your study material. Remember to have your student number available whenever you contact Unisa.

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

5 RESOURCES

5.1 Prescribed book(s)

Lingras, P, Triff, M & Lingras, R. 2016. *Building cross-platform mobile and web apps for engineers and scientists: An active learning approach*. International edition. Sanford, NC: Cengage Learning.

5.2 Recommended book(s)

There are no recommended books, however the lecturer will provide additional resources during the year.

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

5.3 Electronic reserves (e-reserves)

There are currently no electronic reserves for this module, however

E-reserves can be downloaded from the library catalogue. More information is available at: <http://libguides.unisa.ac.za/request/request>

5.4 Library services and resources

The Unisa library offers a range of information services and resources:

- For brief information, 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 research support and services (e.g. the services offered by personal librarians and the request a literature search service offered by the information search librarians),

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>

The library has created numerous library guides, available at <http://libguides.unisa.ac.za>

Recommended guides:

- Request and find library material/download recommended material: <http://libguides.unisa.ac.za/request/request>
- Postgraduate information services: <http://libguides.unisa.ac.za/request/postgrad>
- Finding and using library resources and tools: http://libguides.unisa.ac.za/Research_skills
- Frequently asked questions about the library: <http://libguides.unisa.ac.za/ask>
- Services to students living with disabilities: <http://libguides.unisa.ac.za/disability>
- A–Z of library databases: <https://libguides.unisa.ac.za/az.php>

Important contact information:

- Ask a librarian: <https://libguides.unisa.ac.za/ask>
- 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
- 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 regarding 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: mymodules23@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-ga.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:

- FYE website: All the guides and resources you need in order to navigate through your first year at Unisa can be accessed using the following link: www.unisa.ac.za/FYE
- FYE e-mails: You will receive regular e-mails to help you stay focused and motivated.
- FYE broadcasts: You will receive e-mails with links to broadcasts on various topics related to your first-year studies (e.g., videos on how to submit assessments online).
- FYE mailbox: For assistance with queries related to your first year of study, send an e-mail to fye@unisa.ac.za.

7. STUDY PLAN

The study plan will differ from student to student; however, we urge students to use the assessment plan as a guide to tailor their unique study plan

8 HOW TO STUDY ONLINE

8.1 What does it mean to study fully online?

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

- ***All your study material and learning activities for online modules are designed to be delivered online via myUnisa.***

- **All your assignments must be submitted online.** This means that you will complete all your activities and submit all your assignments via myUnisa. In other words, you may **NOT** post your assignments to Unisa using the South African Post Office.
- **All communication between you and the university happens online.** Your lecturers will communicate with you via e-mail and SMS, as well as by using the **Announcements**, **Discussion Forums** and **Questions and Answers** tools. You can also use all these ways to ask questions and contact your lecturers.

9. ASSESSMENT

9.1 Assessment criteria

Assignments will be compiled according to the following criteria:

- To test your knowledge of the comprehension of concepts.
- To test your ability to answer case-study and theoretical application type of questions.

9.2 Assessment plan

- 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 2 assignments
- The assignment weighting for the module is 20%.
- 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 50% towards the final module mark.

9.3 Assessment due dates

Assignments	Due dates
Assignment 01	Due date to be announced
Assignment 02	Due date to be announced
Assignment 03	Due date to be announced
Assignment 04	Due date to be announced

- 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 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 2023 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 The assessments

As indicated in section 9.2, you need to complete **4** assessments for this module. **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.

9.6 Other assessment methods

Class exercises and end of chapter Questions

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 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 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 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. 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.

9.8 Supplementary

If you obtain between 45% and 49% as final mark, you will be allowed to write supplementary examination in the next semester. To pass this supplementary examination, you must at least 50% in the examination itself. Supplementary exams would take place later January 2024 after the results has been finalised and released, the DSAA will announce the dates and student will be notified.

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 (Mr E Tabane tabane@unisa.ac.za) to discuss the assistance that you need.

12. FREQUENTLY ASKED QUESTIONS

The most frequently asked questions are about the due dates of assignment 1 and 2, which students can find on the welcoming page of the modules also by checking their calendar on their module site.

13. IN CLOSING

Feel free to contact us via 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.

Mr Elias Tabane – lecturer for IRM4724

DEPARTMENT OF INFORMATION SYSTEMS

ANNEXURE: GLOSSARY OF TERM

CODEL- comprehensive open distance e-learning

ICT- Information Communication and Technology

ARCSWiD - The Advocacy and Resource Centre for Students with Disabilities

DSAA - Directorate Student Assessment Administration - Assignment