Tutorial Letter 101/3/2022

Development Software IV

IRM4724

School of Computing

IMPORTANT INFORMATION

Please register on myUnisa, activate your myLife email address and make sure that you have regular access to the myUnisa module website (IRM4724-2022-Y1)

Note: This is a fully online module and therefore it is only available on myUnisa.

BARCODE

CONTENTS

Page

Dear Student

1 INTRODUCTION

Welcome to the module Development Software IV (IRM4724). It is a pleasure to welcome you as a student. We hope that you find your studies stimulating, meaningful and enriching. You will be well on your way to success if you start studying early so that you have enough time to submit your assignments, complete the online activities and prepare for the examination. Since this is a blended module, you need to use myUnisa to study and complete the learning activities and assignments.

1.1 Getting started

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. You will see IRM4724-22-Y1 in the row of modules displayed in the orange blocks at the top of the web page. Select the **More** tab if you cannot find the module in the blocks displayed. Then click on the module to open it.

1.2 Curriculum transformation

Unisa has implemented a transformation charter based on five pillars and eight dimensions. In response to this charter, we place curriculum transformation high on the teaching and learning agenda. Curriculum transformation includes the following pillars: 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. These pillars and their principles are integrated at both programme and module levels as a phased-in approach. You will notice a marked change in the teaching and learning strategy implemented by Unisa, together with how the content is conceptualised in your modules. We encourage you to embrace these changes in a responsive way within the framework of transformation during your studies at Unisa.

2 PURPOSE AND OUTCOMES

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 CONTACT DETAILS

3.1 Lecturer

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 him/her to help you more effectively.

3.2 Department

You can contact the Department of Information systems as follows:

Telephone: 011 670 9200
Email: study@unisa.ac.za

3.3 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.

4 RESOURCES

4.1 myUnisa

The myUnisa learning management system is the university's online campus which will help you to communicate with your lecturers, fellow students and Unisa's administrative departments.

To access the myUnisa website directly, go to https://my.unisa.ac.za. Click on the **Claim UNISA Login** on the top of the screen on the myUnisa website. You will be prompted to enter your student number to claim your initial myUnisa details as well as your myLife email login details.

For more information on myUnisa, see *Study @ Unisa.*

4.2 Prescribed book

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.

4.3 Electronic reserves (e-reserves)

There are no e-reserves for this module.

4.4 Library services and resources information

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 (for example, personal librarians and literature search services), go to http://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Research-support.

The library has created numerous library guides: 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

Important contact information

- https://libguides.unisa.ac.za/ask – ask a librarian
- Lib-help@unisa.ac.za – technical problems accessing library online services
- Library-enquiries@unisa.ac.za – general library-related queries
- Library-fines@unisa.ac.za – queries about library fines and payments

5 STUDENT SUPPORT SERVICES

Study @ Unisa is available on myUnisa: www.unisa.ac.za/brochures/studies. This brochure contains all the tips and information you need to succeed at distance learning and specifically at Unisa.

6 HOW TO STUDY ONLINE

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

6.2 myUnisa tools

We will mainly use the **Lessons** tool, which provides the content of and assessments for this module. At times, you will be directed to join discussions with your fellow students and to complete activities and assessments before continuing with the module.

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

- **Check for new announcements.** You can set your myLife email account so that you receive the announcement emails on your cellphone.
- **Do the Discussion Forum activities.** When you do the activities for each learning unit, we want you to share your answers with the other students in your group. You can read the instructions and even prepare your answers offline, but you will need to go online to post your messages. To this end we provide a **Social Cafe** where you can socialise with other students taking this module.
- **Do other online activities.** For some of the learning unit activities, you might need to post something on the **Blog** tool, take a quiz or complete a survey under the **Self-Assessment** tool. Do not skip these activities, because they will help you to complete the assignments and the activities for this module.

We hope that by giving you extra ways to study the material and practise all the activities, this will help you to succeed in the online module. To get the most out of the online module, you **MUST** go online regularly to complete the activities and assignments on time.

7 ASSESSMENT

7.1 Assignments

The main purpose of an assignment is to encourage you to study the prescribed book, to read certain sections over and over again, and to think about the tutorial matter in terms of practical application. With this in mind, we have set questions that may sometimes be difficult, and some may seem ambiguous. The idea is not to trick you or catch you out, but to make you think. Formative assessment for IRM4724 takes places by means of a year mark system.

The following is a breakdown of the formal assessment as they will become due during the year:

Assignment due dates

Assignments	Due dates
Assignment 01	
Assignment 02 (practical)	
Assignment 3	
Assignment 4 (practical)	

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

7.2 Calculation of final mark

Your mark for this module will be calculated as follows:

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

NB: To pass this module, a final mark of 50% is required.

7.3 Supplementary examination

Students who obtain between 45 and 49% as a final mark will be allowed to write the supplementary examination. To pass the supplementary examination, they must obtain at least 50% in the examination.

8 IN CLOSING

Do not hesitate to contact me by email if you have problems with the content of this tutorial letter or any academic aspect of this module.

I wish you a fascinating and satisfying journey through the study material and trust that you will complete this module successfully.

Enjoy the journey!

Mr Elias Tabane
Lecturer for IRM4724
DEPARTMENT OF INFORMATION SYSTEMS