Tutorial Letter 101/0/2022

Computer Systems:
Fundamental Concepts
COS1521

Year module

School of Computing

IMPORTANT INFORMATION

Please register on myUnisa, activate your myLife e-mail account and make sure that you have regular access to the myUnisa module website, COS1521-2022-Y1, as well as your group website.

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

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CONTENTS

Page

1 INTRODUCTION

Dear Student,

Welcome to Computer Systems: Fundamental Concepts (COS1521). This is a year module offered by the School of Computing as from 2021. If you are repeating the module, please study this letter carefully, as there are changes from the semester module to the year module regarding examination admission.

Because this is a fully online module, you will need to use myUnisa to study and complete the learning activities for this module. Visit the website for COS1521 on myUnisa frequently. The website for your module is COS1521-22-Y.

This module provides you with a background to computers. Computers play such a major role in our daily lives that we accept their use as a matter of course. In COS1521 we introduce you to number systems, data storage and operations on data. Furthermore, the basics of logic gates and Boolean algebra will help you to draw simple combinational logic circuits when given a problem statement. We also investigate the fundamentals of sequential logic circuits. You will become better acquainted with numerous concepts and properties of the hardware and software components of computer systems. We explain the concept of software engineering and introduce you to concepts relating to data structures, databases and database management. We also look at the role that computers play in data communication in the modern world.

This is an online module, so ALL learning content and ALL tutorial letters are available on myUnisa. As from 2021 you will not receive any tutorial matter in printed form. To see your study material online and read about what to do for the module, go to https://my.unisa.ac.za and log in with your student number and password. You will find COS1521-22-Y1 in the row of modules in the orange blocks across the top of the webpage. Remember to check in the “Sites” tab on the top right-hand side of the screen if you cannot find the module in the orange blocks. Click on the module you want to open.

NOTES REGARDING THE myUnisa SYSTEM

We refer to the following tabs/items on or reference to the myUnisa system throughout this letter:

- myUnisa tools
- myModules
- Sites
- Signing into the system
- Assessment info
- Additional Resources
- Discussion forum
- Official study material
- Online assignments / exams
- Announcements
- Lessons
- E-tutor sites

Please note that all reference to / description of the above, refers to the current myUnisa system. The University is planning to upgrade this system for 2022. As we do not yet have all the details of how the system will change, we will inform you of any changes early in 2022, during which time any procedures/guidelines described in this letter, will be updated if needed.

1.1 Getting started

Owing to the nature of this module, you can read about the module and find your study material online. Go to the 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 then on "Sites" in the top right corner. In the new window, click on the grey Star icon next to the modules you want displayed on your navigation bar. Close the window in the top right corner. Then select the option "Reload to see your updated favourite sites". Now go to your navigation bar and click on the module you want to open.

We wish you every success with your studies!

2 OVERVIEW OF COS1521

2.1 Purpose

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

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

2.2 Outcomes

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

Specific outcome 1

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

Specific outcome 2

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

Specific outcome 3

Demonstrate an understanding of the basics of data communications and networks.

Specific outcome 4

Describe data structures and how different databases function.

3 CURRICULUM TRANSFORMATION

Unisa has implemented a transformation charter based on five pillars and eight dimensions. In response to this charter, we have placed 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 will be 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 during your studies at Unisa in a responsive way within the framework of transformation.

4 LECTURER(S) AND CONTACT DETAILS

4.1 Lecturer(s)

The primary lecturer for this module is Ms Drina du Plessis
Department: School of Computing
Telephone: 011 670 9109 / 0607666031
E-mail: **dpleshw@unisa.ac.za**

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.

4.2 Department

You can contact the School of Computing as follows:

Telephone number: **011 670 9200**

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

4.3 University

To contact the University, follow the instructions on the Contact us page on the Unisa website. Remember to have your student number available whenever you contact the University. If you have **administrative enquiries** relating to **registrations, fees, assignment submission, and examination matters such as aegrotats and special exams,** you can also consult the brochure entitled *Study @ Unisa*.

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 Joining myUnisa

The myUnisa learning management system is the University's online campus which will help you communicate with your lecturers, other students and the administrative departments within Unisa. To claim your myUnisa account, please follow the steps below:

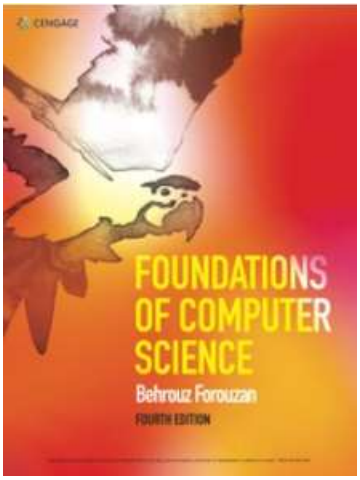
1. Visit the myUnisa website at https://my.unisa.ac.za/portal
2. Click on the **"Claim Unisa login"** link on the top of the screen under the orange user ID box.
3. A new screen will load, prompting you to **enter your student number**. Please enter your student number and click **"continue"**.
4. Enter your surname, your full name, your date of birth and, finally, your South African ID number (for South African citizens) OR your passport number (for foreign students). Then click "continue". **Remember to enter either an ID number or a passport number, NOT both.**

5. Please read through the guidelines and **click all the check boxes** to acknowledge that you have read all the information provided. Once you are done, click the **"Acknowledge"** button to redirect you to the final page in the process.
6. The final page will display your myLife e-mail address, and your **myLife AND myUnisa password**. This password will also be sent to the cellphone number displayed on the page for safekeeping.
7. Please note that it can take up to 24 hours for your myLife e-mail account to be created.

Remember, the password provided is your myUnisa **AND** myLife password.

5.2 Prescribed book(s)

Here are the bibliographical details of the prescribed book for this module:



Authors: Forouzan, Behrouz
Title: *Foundations of Computer Science*
Edition: 4th
Year: 2017
ISBN-10: 1-4737-5104-7
ISBN-13: 978-1-4737-5104-0

The prescribed book is also available as eBook at the following URL:

https://www.vitalsource.com/za/products/3i-ebook-foundations-of-computer-science-behrouz-a-forouzan-v9781473751071

The module content is covered in **chapters 1 to 11, 13 and 14** of the prescribed book, referred to as **Forouzan** (details are given in section 4.1 of this tutorial letter), and in all the tutorial letters, including Tutorial Letter 102. The previous editions of the textbooks were by two authors **Forouzan** and **Mosharraf**, so you may still see reference to **F&M** in some of the study material.

The following sections/subsections are excluded from the syllabus: (Note that if you do not use the 4th edition, section numbers and page numbers may differ – so please look at the section headers below to make sure that you exclude the correct section/subsection. We give the page numbers for the 3rd edition in brackets).

- **Section 2.3**: Non-positional number systems, pp. 31-32 (3rd ed. pp. 33-34)

- **Fig 4.8**: Addition and subtraction of reals in floating point format, p. 85 (3rd ed. p. 91)
- **Example J.1** : Appendix J, pp. 623-624 (3rd ed. pp. 92-93)
- **In Appendix E**: Product of sums and examples, pp. 573-574 (3rd ed. pp. 550-551), plus any further reference to product of sums. The rest of the Appendix is important for the assignments and exam.
- **Section 5.7.3**: Pipelining, pp. 114-115 (3rd ed. pp. 121-122)
- **Section 5.7.4**: Parallel processing, p. 115 (3rd ed. p. 122)
- **Section 5.8**: A simple computer, pp. 117-126 (3rd ed. pp. 124-133)
- **Section 8.7**: Recursion, pp. 234-236 (3rd ed. pp. 239-241)
- **Section 9.4**: Common concepts, pp. 257-267 (3rd ed. pp. 261-271)
- **Section 14.5**: Database design, pp. 381-385 (3rd ed. pp. 385-389)
- **Section 14.6**: Other database models, pp. 385-387 (3rd ed. pp. 389-391)

The following topics in the prescribed book are covered:

Chapter 1: Introduction

Chapter 2: Number systems

Chapter 3: Data storage (Appendix A: Unicode)

Chapter 4: Operations on data

Appendix E: Boolean algebra and logic circuits

Chapter 5: Computer organisation

Chapter 6: Computer networks and the internet

Chapter 7: Operating systems

Chapter 8: Algorithms

Chapter 9: Programming languages

Chapter 10:Software engineering

Chapter 11:Data structures

Chapter 13:File structures

Chapter 14:Databases

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

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

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

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

5.3 Recommended book(s)

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

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

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

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

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

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

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

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

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

5.4 Optional CAI tutorial

There is an **optional** CAI tutorial, which we highly recommend. Please see Appendix A of this tutorial letter for instructions on how to download it from myUnisa. The tutorial deals with the simplification of Boolean expressions by means of Karnaugh maps (diagrams) and includes background material. You need to be familiar with this subject matter for Assignment 02, and the tutorial can also help you with your examination preparation relating to this topic. Past students recommend this tutorial highly. You will also be assigned to an e-tutor (discussed in the next section) who will be able to assist you greatly in understanding number systems, Karnaugh maps, Boolean expressions and logic circuits.

5.5 Electronic reserves (e-reserves)

There are no specific e-reserves for this module.

E-reserves can be downloaded from the Library catalogue. More information is available at https://libguides.unisa.ac.za/request/request

5.6 Library services and resources

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

- For a general Library overview, go to https://www.unisa.ac.za/sites/corporate/default/Library/About-the-Library Library @ a glance
- For detailed Library information, go to https://www.unisa.ac.za/sites/corporate/default/Library
- For research support and services (eg personal librarians and literature search services) go to https://www.unisa.ac.za/sites/corporate/default/Library/Library-services/Research-support

The Library has created numerous **Library guides** to assist you: http://libguides.unisa.ac.za

Recommended guides:

- Request recommended books and access e-reserve material: https://libguides.unisa.ac.za/request
- Requesting and finding library material: Postgraduate services: https://libguides.unisa.ac.za/request/postgrad
- Finding and using library resources and tools (Research Support): https://libguides.unisa.ac.za/research-support
- Frequently asked questions about the Library: https://libguides.unisa.ac.za/ask
- Services to students living with disabilities: https://libguides.unisa.ac.za/disability
- A-Z databases: https://libguides.unisa.ac.za/az.php
- Subject-specific guides: https://libguides.unisa.ac.za/?b=s
- Information on fines & payments: https://libguides.unisa.ac.za/request/fines

Assistance with **technical problems** accessing the Unisa Library or resources: https://libguides.unisa.ac.za/techsupport

Lib-help@unisa.ac.za (insert your student number in the subject line please)

General library enquiries can be directed to Library-enquiries@unisa.ac.za

6 STUDENT SUPPORT SERVICES

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

This website has all the tips and information you need to succeed at Unisa.

6.1 First-Year Experience Programme @ Unisa

For many students, the transition from school education to tertiary education is beset with anxiety. This is also true for first-time students to Unisa. Unisa is a dedicated open distance and e-learning institution. Unlike face-to-face/contact institutions, Unisa is somewhat different. It is a mega university and all our programmes are offered through a blended learning mode or fully online learning mode. It is for this reason that we thought it necessary to offer first-time students additional/extended support so that you can seamlessly navigate the Unisa teaching and learning journey with little difficulty and few barriers. In this regard we offer a specialised student support programme to students entering Unisa for the first time. We refer to this programme as Unisa's First-Year Experience (FYE) Programme. The FYE is designed to provide you with prompt and helpful information about services that the institution offers and how you can access information. The following FYE programmes are currently offered:

- FYE website: All the guides and resources you need to navigate through your first year at Unisa can be accessed using the following link: www.unisa.ac.za/FYE
- FYE e-mails: You will receive regular 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 (eg videos on how to submit assignments online).
- FYE mailbox: For assistance with queries related to your first year of study, send an e-mail to fye@unisa.ac.za

6.2 E-tutors

With effect from 2013, Unisa offers online tutorials (e-tutoring) to students registered for modules at NQF level 5, 6 and 7, this means qualifying undergraduate modules.

Once you have been registered for a qualifying module, you will be allocated to a group of students with whom you will be interacting during the tuition period as well as with an e-tutor who will be your tutorial facilitator. Thereafter you will receive an sms informing you about your group, the name of your e-tutor and instructions on how to log onto myUnisa in order to receive further information on the e-tutoring process.

Online tutorials are conducted by qualified e-tutors who are appointed by Unisa and are offered free of charge. All you need to be able to participate in e-tutoring is a computer with internet connection. If you live close to a Unisa regional center, please feel free to visit this center to access the internet. E-tutoring takes place on myUnisa where you are expected to connect with other students in your allocated group. It is the role of the e-tutor to guide you through your study material during this interaction process. To get the most out of online tutoring, you need to participate in the online discussions that the e-tutor will be facilitating. Please make use of this opportunity. The e-tutor is also available if you need any help with questions from old exam papers – post your questions on the discussion forum of your e-tutor group, and the e-tutor and your fellow students will comment and assist.

There are modules that students have been found to repeatedly fail, these modules are allocated face-to-face tutors and tutorials for these modules take place at the Unisa regional

centers. These tutorials are also offered free of charge, however, it is important for you to register at your nearest Unisa regional center to secure attendance of these classes.

6.3 Free computer and internet access

Unisa has entered into partnerships with establishments (referred to as Telecentres) in various locations across South Africa to enable you (as a Unisa student) free access to computers and the Internet. This access enables you to conduct the following academic related activities: registration; online submission of assignments; engaging in e-tutoring activities and signature courses; etc. Please note that any other activity outside of these is for your own costing e.g. printing, photocopying, etc. For more information on the Telecentre nearest to you, please visit **www.unisa.ac.za/telecentres.**

7. HOW TO STUDY ONLINE

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

7.2 myUnisa tools

The main tool that we will use is the **Lessons tool**. This tool will provide the content of and the assessments for your module. The lessons contain many videos that you may watch, should you battle to understand certain concepts in the textbook. **Please note that these videos are not compulsory to watch, and that you will not be examined on them**. However, they are quite helpful if you need to refresh your memory about specific topics in the textbook.

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.** You can also set your myLife e-mail account so that you receive the announcement e-mails on your cellphone.
- **Do the Discussion Forum activities.** When you do the activities for each lesson, 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. Your e-tutor will post the activities on the Discuusion Forum.

- **Do other online activities.** For some of the lesson activities you might need to complete a **Self-Assessment** exercise. Do not skip these activities because they will help you complete the assignments and the activities for the module.

We hope that by giving you extra ways to study the material and practise all the activities, this will help you 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.

8. ASSESSMENT

8.1 Assessment criteria

The assessment criteria are given for each specific outcome:

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

Assessment criteria*:*

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

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

Assessment criteria:

- Today's computers are described in context of some short historical background, different architectures and ethical scenarios/issues;
- Descriptions of software engineering and operating systems include the development of software in a historical context;
- The description of a basic computer includes the three basic hardware subsystems and their interconnecting functioning;
- The description of an operating system includes the functioning of its components;
- The descriptions of popular operating systems with references to different popular operating platforms;

- The definition of an algorithm includes its relation to problem solving;
- Definitions of the three algorithm constructs include descriptions of their use in algorithms;
- Descriptions of basic algorithms include their applications;
- Descriptions of the sorting and searching concepts of algorithms include an understanding of their mechanisms;
- Descriptions of subalgorithms include their relations to algorithms;
- Descriptions of the development process models in software engineering include the concepts of the software life-cycle phases and documentation.

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

Assessment criteria:

- Descriptions of physical structures of networks include references to network criteria, physical structures and categories of networks;
- The description of the Internet includes the TCP/IP protocol suite with reference to the characteristics of its layers and their relationships;
- Descriptions of Internet applications in the context of client-server communications.

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

Assessment criteria:

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

8.2 Assessment plan

- To complete this module, you will be required to submit 4 assignments.
- All information on when and where to submit your assignments will be made available to you via the myUnisa site for your module.
- Due dates for assignments, as well as the actual assignments are available on the myUnisa site for this module.
- To gain admission to the examination, you will be required to submit at least one assignment.
- Your assignments will all be MCQ assignments.
- The assignment weighting for the module is 20%.
- The examination will be a timed MCQ exam, and will be written online on myUnisa.

- The examination will count 80% towards the final module mark.
- In Section 8.3 below, an example is given of how to calculate your year mark.

Why do assignments? In the first place, we need to provide proof to the Department of National Education that you are an active student. To gain admission to the exam, it is **compulsory** to submit **at least one assignment** by **the due date of Assignment 1**, otherwise **you will not have exam admission.**

Why do assignments? In the first place, we need to provide proof to the Department of National Education that you are an active student. To gain admission to the exam, it is **compulsory** to submit **at least one assignment** by **the due date of assignment 1,** otherwise **you will not have exam admission.**

Important: Take note that the self-assessment assignments should not be submitted.

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

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

As the academic calendar for 2022 was not available when this letter was written, end of registration date, dates for the study programme below and dates for assignments could not be specified. The study program therefore indicate week numbers. We will put dates to week numbers as soon as possible.

Weeks	**Activity**	**Assignment type**
Week 1 Week 2 Week 3 Week 4	**Forouzan** chapters 1 and 2 plus Appendix A. Tutorial Letter 102, units 1 to 2 and Part II **Forouzan** chapter 3 Tutorial Letter 102, unit 3 **Forouzan** chapter 4, Tutorial Letter 102, unit 4 and Part II & Part III plus Appendix E. **Forouzan** chapters 1-4, Appendix A & E Tutorial Letter 102, units 1-4 and Part II & Part III Do Self-assessment (Sections A and B) **(Do not submit.)** Self-assessment exercises are NOT submitted. It is for you to practice and make sure that you understand the content **Assignment 1 is opened on myUnisa.** You can submit Assignment 1 until the due date. Two attempts are allowed. Highest marks will be taken.	
Week 5 Week 6 Week 7 Week 8 Week 9	Revise chapters 1 to 4, and Appendix A and E Start with assignment 1 **Submit assignment 1** **Forouzan** chapters 5 and 6 Tutorial Letter 102, units 5 and 6 **Forouzan** chapters 7 and 8 Tutorial Letter 102, units 7 and 8 **Forouzan** chapters 9 and 10 Tutorial Letter 102, units 9 and 10	**Assignment 1 (**multiple choice via the online platform on myUnisa)

	Revise chapters 5 to 7 for assignment 2 **Assignment 2 is opened on myUnisa.** You can submit Assignment 2 until due date. Two attempts are allowed. Highest marks will be taken.	
Week 10 Week 11 Week 12 Week 13	Revise **Forouzan** chapters 5 to 7 Tutorial Letter 102, units 5 to 7 Start assignment 2 **Submit assignment 2 by due date** Revise **Forouzan** chapters 8 – 10 **Forouzan** chapters 11, 13, 14 Tutorial Letter 102, units 11,13, 14 **Assignment 3 is opened on myUnisa.** You can submit Assignment 3 due date. Two attempts are allowed. Highest marks will be taken.	**Assignment 2 (**multiple choice via the online platform on myUnisa)
Week 14 Week 15 Week 16 Week 17 Week 18	Revise chapters 1–4, Appendix A & E Revise Tutorial Letter 102, units 1-4 and Part II & Part III Revise chapters 5-9 Revise Tutorial Letter 102, units 5-9 Revise chapters 10-11, 13-14 Revise Tutorial Letter 102, units 10-11, 13-14 Start with assignment 3 **Complete Assignment 3 and submit by due date** Revise study units 1 to 4 **Assignment 4 is opened on myUnisa.** You can submit Assignment 4. Two attempts are allowed. Highest marks will be taken. **Please note that Assignment 4 has the same structure as the final examination. It will therefore benefit you greatly to do this assignment.**	**Assignment 3 ((**multiple choice via the online platform on myUnisa)
Week 19 Week 20 Week 21 Week 22 Week 23	Revise study units 5 to 7 Revise study units 8 to 10 and start with Assignment 4 **Complete and submit Assignment 4** Work through Assignment solutions Work through old exam papers, and practice and example exam papers under Additional resources	**Assignment 4 (**multiple choice via Online assessment tab on myUnisa)
Week 23-26	**Do revision and prepare for online examination**	
Week 27-30	**Do revision and prepare for online examination**	
Week 31-35	Exam marks released	

8.3 Year mark and final examination

Your year mark for this module is as follows:

Weighting of the course: **year mark 20% and examination 80%**

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

You will be awarded a **year mark** based on the percentages you achieve for Assignments 01 to 04. The year mark will contribute 20% towards your final mark for this module. **You have to submit at least one assignment by the due date of assignment to obtain exam admission.**

Contribution percentages are as follows:

Assignment 01: 20%
Assignment 02: 30%
Assignment 03: 30%
Assignment 04: 20%

We illustrate by an example. Assume that you marks for the assignments are as follows:

Assignment 01: 70%
Assignment 02: 80%
Assignment 03: 50%
Assignment 04: 60%

Your year mark will be calculated as follows:

$(70 \times 0.2) + (80 \times 0.3) + (50 \times 0.3) + (60 \times 0.2) = 65\%$,

Now suppose you achieve an **exam mark** of 70%. Your **final mark** will be calculated as follows:

$(65 \times 0.20) + (70 \times 0.80)\% = (13.0 + 56.0)\% = 69\%$.

Please note that your year mark will not be taken into consideration if you are writing a supplementary exam.

If myUnisa is down on the last submission date, the DSAA and lecturers will be notified. Try to resubmit the assignment as soon as myUnisa is up again. Please do not contact lecturers if a problem of this kind occurs, since system problems will be taken into consideration. If you have queries with regards to the submission of assignments, please contact the Assignments section of the DSAA. **Please note:** The system is busy if all students try and submit on the evening of the due date. Please try and submit your assignment before the due date or at least earlier in the day on the due date.

8.4 Assignment numbers

- There are no assignment due dates included in this tutorial letter.
- Assignment due dates for Assignments 1 to 4 will be made available to you on the landing page of myUnisa for this module, and on the calendar. We envisage that the due dates will be available to you upon registration. Note that the study programme that follows below also do not have any dates. As soon as you have registered, start at week 1 and follow the programme. We will provide you with dates as soon as possible after registration.
- Please start working on your assignments 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 assignments

8.5 Assignment due dates

- Modules offered by Unisa are either *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*). In all cases of online engagement, we use myUnisa as our virtual campus.
- As mentioned in the Introduction section, from 2022, the myUnisa virtual campus will be offered via a new learning management system. 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.
- The University undertakes to communicate as clearly and as frequently as is necessary to ensure optimum advantage in the use of the new learning management system.
- Additional information on the use of the myUnisa site for the module, as well as features to engage and communicate with your lecturer and other students will also be made available via the online site for the module.
- Therefore, log on to the myUnisa site for your module to gain more information on where to complete and/or upload your assignments and how to communicate with your lecturer.

8.6 Assignment submission

As indicated in section 8.2, you need to complete 4 assignments for this module. You will receive details on how and where the assignments should be submitted soon after registration

9. CONCLUSION

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!

Ms Drina du Plessis – lecturer for COS1521

SCHOOL OF COMPUTING

ADDENDUM A:

STEPS FOR DOWNLOADING THE CAI TUTORIAL FROM MYUNISA

The tutorial is available as a zip file under Additional Resources. The tutorial deals with logic circuits, Boolean algebra and Karnaugh diagrams. It is not compulsory to work through the tutorial, but it would benefit you greatly.

To download the tutorial:

Save cos1521.zip to your computer (Choose C drive *Documents* or wherever you want to save it) and then double-click on the saved cos1521.zip.

Choose ***extract*** from the top row of buttons on the opened page. Then click on ***extract*** **to the right** of the open window.

Double-click on the cos1521 folder that appears, and then double-click on the karnaugh.exe icon (it looks like a round ball with a red ribbon around it).

You can now navigate through the tutorial.

We have tested these steps without experiencing any problem. Depending on your browser and operating system, there may be a slight variation in these steps. If you need to, ask someone more experienced with computers to help you. Also note that you should have WINZIP installed on your computer. Find it free on the internet.

This CAI tutorial is optional. No examination questions will be asked on specific examples in this tutorial.