DURBAN UNIVERSITY OF TECHNOLOGY
INYUVESI YASETHEKWINI YEZOBUCHWEPHESHE

FACULTY OF ACCOUNTING AND INFORMATICS

DEPARTMENT OF INFORMATION TECHNOLOGY

Study Guide

2025

QUALIFICATION	:	Diploma In Information And Communication Technology-Application Development.
QUAL CODE	:	DIIAD1, DIIBA1, DIIAF1
MODULE	:	Applications Development 2A
MODULE CODE	:	APDA201
HEQF CREDITS	:	12

Module was revised: Jan 2025 Revised by: B.Ngxata

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Consultation times with Lecturer: _____

Head of Department	:	
Campus location	:	Ritson Campus
Room number	:	
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Departmental Secretary	:	Ms Thabile Ntuli
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Lectures and self-study	:	**3** weekly + 2 hours self-study
Practical/Tutorial	:	**1** practical period weekly (with tutor or own)
Lecture Venue	:	As indicated on the official timetable
Practical/Tut Venue	:	As indicated on the official timetable
Duration	:	12 weeks
Relevant Policies & rules:		Please refer to the Departmental and Faculty handbooks for all institutional policies, rules and procedures. Students are encouraged to familiarise themselves with these policies and to adhere to them strictly.

Contents

1. Welcome

Congratulations on successfully progressing through Applications Development 1 and a HEARTY welcome to Applications Development 2A.

The purpose of this learner guide is to provide you with knowledge as regards the logistics (both administrative and academic) of this module, so as to ensure that you are aware, in advance, of the subject's content and the manner in which it will be assessed.

The guide will provide information as regards the purpose of Applications Development 2A and how it fits into the rest of your diploma. It provides information about pre-requisites and recognition of prior learning. A description of the Outcomes (both Specific and Learning) and Assessment Criteria is tabulated. Information as regards the learning and teaching strategies to be employed, as well as the process of assessment and class mark calculation is outlined. Added to this, you will get a list of readings that will assist you, as well as a scheme of work that provides a guided planner regarding your curriculum for the module. Finally, some specific rules and policies are outlined.

Faculty and Departmental Policies

Please refer to the Departmental and Faculty handbooks for all institutional policies, rules and procedures. Students are encouraged to familiarise themselves with these policies and to adhere to them strictly.

Subject/Module Policies

Attendance of Lectures

Lectures are an essential part of the course. **Attendance at lectures is compulsory** since lecturers usually cover, at least in outline, the essential contents of each section and give guidance with regard to further readings, etc. Furthermore, announcements – for example, about test dates, are made in class from time to time.

Lectures also provide you with an opportunity to share your views and discuss problems with your lecturer and other students. The essence of a good lecture is good participation. A co-operative approach is encouraged. If you miss lectures, your lecturer will expect you to make up the work by yourself. It is, thus, very important for students to be on time and attend class regularly to be successful.

Any clash with other lectures has to be resolved by the student, it is not the lecturer's responsibility to cover material that a student has missed because of clashes (Clashes will only occur if a student has not passed a course from the previous level).

Punctuality

Students are expected to be punctual i.e. arrive on time for lectures. Late coming will not be tolerated, because this is a disturbance. Students that continuously arrive late will not be permitted to enter the lecture venue.

Eating and Drinking

Students are not permitted to eat or drink anything in any lecture venue.

Resources Required

It is important for students to buy a storage device to save their work. A recommended device is a memory stick or portable external hard drive. Other online storage facilities can also be used, such as SkyDrive, Dropbox and so on.

Assessments

The dates for assessments are indicated below in the Scheme of Work. If there are revisions concerning these assessments, announcements will be made during lectures

Tests

In addition to scheduled tests, "spot tests" **may be** given during any lecture and/or tutorial. It should be noted that a **VALID document** (i.e. Doctors, hospital, prison, etc.) is the only acceptable reason for not attending a test. This document must be handed to the lecturer within 3 days of the respective test date. The lecturer may deem it fit to call the authorising body of the document in order to authenticate its details. If a student has missed a test and has been granted permission to write a make-up test it is up to the student to enquire about the make-up test details.

Student/Lecturer Communication

Students are requested, as far as possible to use lecture time for queries with the lecturer. However, students are also encouraged to make full use of consultation times. Individual lecturers will announce their consultation times during lectures. If students feel that they require additional/other consultation times they can make an appointment (provided that they have attended all lectures and attempted all their work) to see their lecturer to discuss their work. Alternatively, students communicate with lecturers via email (refer to email addresses of lecturers under *General Information* above.

Other

Lecturers may deem it fit to introduce some other internal class/groups policies to allow for the smooth running of lectures.

Inappropriate Behaviour

Inappropriate behaviour may include arriving late, leaving early, continuously talking, or any of the above. Rude and inappropriate behaviour will not be tolerated. Since, it is the lecturer's responsibility to provide an environment that is conducive to learning for everyone in the class; the lecturer may ask any student who chooses to repeatedly distract others to leave the venue. In some cases, the lecturer may have the student permanently removed from class.

2. Using your onlineThinkLearnZone (*Moodle*) classroom

All taught subjects/modules have their own online classroom on the ThinkLearnZone. You can access your classroom at https://thinklearnzone.dut.ac.za

To log in, ask your lecturer for guidance or check out "how to log in" on the DUT e-learning website http://elearning.dut.ac.za/faq/faq_students/

The e-learning website also has contact information for help and technical assistance.
http://elearning.dut.ac.za/contacts/
You can call the e-learning helpdesk on 031 373 6758 or email them on edtechadmin@dut.ac.za

3. Introduction to the Module

Congratulations on successfully progressing through Applications Development 1 and a HEARTY welcome to Applications Development 2A. The pre-requisite for Applications Development 2A is Applications Development 1B.

The purpose of this learner guide is to provide you with knowledge as regards the logistics (both administrative and academic) of this module, so as to ensure that you are aware, in advance, of the subject's content and the manner in which it will be assessed.

The guide will provide information as regards the purpose of Applications Development 2A and how it fits into the rest of your diploma. It provides information about pre-requisites and recognition of prior learning. A description of the Outcomes (both Specific and Learning) and Assessment Criteria is tabulated. Information as regards the learning and teaching strategies to be employed, as well as the process of assessment and class mark calculation is outlined. Added to this, you will get a list of readings that will assist you, as well as a scheme of work that provides a guided planner regarding your curriculum for the module. Finally, some specific rules and policies are outlined.

The purpose of this module is:
To design web applications using a current development methodology and tools.

Software applications development is the designing and producing of software products and systems to meet specified needs so that they work reliably and their production and maintenance is cost effective.

Applications Development 2A herein referred to as **APP_DEV 2A** is the subject that teaches you the practical component on how to develop web applications using MVC. More specifically, **APP_DEV 2A** will provide you with skills necessary to design web applications using a current development methodologies and tools.
C#.NET (pronounced as C-Sharp dot NET) is the programming language used as a means to produce these applications quickly and easily. Other programming languages and tools may be used.

It will provide a unified view of the broad field of fundamental and intermediate concepts, philosophies, and trends that provide the context of designing software. It focuses on the current methodologies and tools to interpret and logically develop computer programs, particularly web-based applications.

Although theory will be covered to a great extent, this course is conducted "hands on", on a practical basis. You will be working in the .NET platform using C#.NET with the latest MVC version. You will, however, be required to complete various exercises on your own. The open labs will be made available to you, so please check the open lab timetable.

4. Learning Outcomes {Graduate attributes}

1. Understand the foundational ideas of the chosen framework. {2}
2. Create an application using the chosen framework. {2}
3. Understand, design, implement and test design patterns. {1,2}
4. Implement advanced unit testing. {1,2}
5. Understand and customize the routing system on the web. {1,2}

6. Understand and implement URL best schema practices.{1,2}
7. Understand and implement controllers in an application.{1,2}

5. Learning, teaching and assessment strategies

Learning activities

The credit value for this module is 12 and the notional hours for this module is 120.
There will be two lecture periods per week in which the basic concepts and theory will be explained. One periods per week will be used for practicals.

Graduate attributes

1. **Critical and creative thinkers who work independently and collaboratively**
   During assessment, the learner will be required to think critically in order to come up with the creative solution. The assessments that will be given will require critical and effective thinking.
2. **Knowledgeable practitioners.**
   The learners must be knowledgeable of the content in order to come up with the required solution.
3. **Effective communicators.**
   The learner must be able to express him/herself when answering questions.
4. **Culturally, environmentally and socially aware within a local and a global context.**
   The learner must be aware of other ways or methods that can be used to accomplish similar task.
5. **Active and reflective learners**
   During assessment, the learner is expected to demonstrate a deep knowledge of the subject and the assessment will be set in such a way that the student should reflect those expertise.

- Assessment Strategies

The mark for this module will comprise of **40% of** Year **Mark (DP)** and **60% of Exam Mark**. During the course of the semester, the learning outcomes will be assessed by means of 3 tests/assessments and an exam at the end of the semester.

Year Mark comprises (see Proposed Scheme of Work for proposed dates and content):

Test 1: Theory	50%
Test 2: Theory / Practical	50%
TOTAL	**100%**

*****NOTE THAT THESE WEIGHTING ARE SUBJECT TO CHANGE*****

*The **Year Mark** MUST be **40% or more** to be granted permission to write the **Exam** at the end of the semester.*

***Supplementary Exams** are awarded to students who:*

1. *Obtain a **FINAL** mark of **between 45% and 49%***
2. *Obtain a **FINAL** mark of **50% or more,** but did **not** make a **sub minimum of 40%** in the **Exam***
3. *Obtain a **FINAL** mark of **less than 50%**, but have a **Year Mark of 60% or more**.*

*Both the **Final and Supplementary Exams** are 2 hours written theory sessions each comprising the entire syllabus.*

Feedback on assessment will be made available to learners at least 10 days after the assessment has be written**.** This will be in the form of assessment mark as well as the learner answer script.

Activities to promote learning

Online resources like websites, videos, forums (these will includes code project, code guru, YouTube and so on) will be made available to all learners.

Library Orientation

TBA

6. Scheme of Work

e-Book: Hands-on using ASP.NET MVC: Covering MVC6

WEEK	TOPIC
Week 1	**Getting Started** 1. Understanding ASP.NET MVC 2. The MVC Pattern 3. Brief History of MVC Pattern 4. MVC Life Cycle 5. Software Requirements 6. Application Glimpse 7. How MVC applications are structured 8. URL Routing System
Week 2, 3	**Understanding Controllers & Views** 9. Introduction to Controllers 10. Working with your 1st Controller. 11. Views and Syntax of Razor Views 12. Different View Types + HTML Helpers 13. ViewBag and View Data
Week 4	**Models** 19. Getting Started with at least 1 Model 20. Business Logic (Methods) 21. Annotations and Validations 22. Disadvantages and Advantages of Client-Side and Server Side Validation
Week 5	23. Scaffolding 24. Data Annotations
Week 6, 7	25. Using DropdownList and checkboxes
Week 8	26. Introduction to Unit testing
Week 9,10	27. Create and run unit test
Week 11	28. Revision
	Exam Study Period
	1st Semester Exam

Feedback on assessment will be made available to learners at least 10 days after the assessment has be written. This will be in the form of assessment mark as well as the learner answer script.

Online resources

1. http://www.dotnettricks.com/learn/mvc
2. http://www.dotnetodyssey.com/asp-net-mvc-5-free-course/

7. Copyright and Plagiarism

Using someone else's work without giving credit (via referencing) to that person/s is stealing. This form of theft is referred to as plagiarism. Plagiarism is not allowed. This is sometimes done unintentionally when you tend to paraphrase work from an existing source. Thus, you should avoid paraphrasing. If you choose to do so then the work must be appropriately referenced.

Most literature carries a copyright – meaning that it cannot be copied. It is illegal to breach this copyright law. If you need to copy work that has a copyright then you need to request permission to do so.

Cheating, plagiarism, copying and unauthorised collaboration are unacceptable, and are subject to disciplinary action. Penalties for cheating, plagiarism and copying, at a minimum, include receiving zero on the test, assignment or examination without any option of rewriting or resubmission. Please refer to the plagiarism policy of DUT in the general rulebook.

8. Student Support

1. If you require further support relating to the subject content, schedule a consultation with your lecturer within the allocated consultation times. Your lecturer may refer you to one of the support services available.
2. *[Lecturers may mention how they will follow up on students if referred to support services]*
3. You will be able to find a full list of services and comprehensive details for these services on the DUT website http://www.dut.ac.za/student_portal/
4. Below you will find a summarised list of the important support services available to you as students of DUT.

SUPPORT SERVICE	CONTACT DETAILS	WHAT THEY CAN HELP WITH
Faculty Office	East Wing, Hotel School Building, Ritson Campus **Mr L Chiya (Faculty Assistant)** Tel: (031) 373 5418 Email: lwandilec@dut.ac.za	Registration, remark/supplementary/special exam application, graduation
Student Counselling & Career Resource Centre Location	Lower Library Complex, Steve Biko Campus, next to financial Aid Reception Desk (031)373 2266 Career Resource Centre (031)373 2571	Individual counselling, career guidance, study skills support
HIV/AIDS Centre	Front Desk (031) 373 2260	Emotional support
Health Clinic	**Isolempilo**(Gate 5, opposite Sports Centre) 031 373 2223 **Ritson Campus**(Next to Hotel School Restaurant) 031 3736010	Primary health services, Family Planning, HIV Testing
Financial Aid Services And Scholarships	Lower Library Complex, Steve Biko Campus 031 373 2553 applications@nsfas.org.za NSFAS call centre on 0860 067 327	Application for financial support
Student Residence	Tel: 031 373 2494	Application for residence whilst studying at DUT

5. Critical and creative thinkers who work independently and collaboratively
6. Knowledgeable practitioners
7. Active and reflective learners

9. Work Integrated Learning (WIL)

Industry, community, and occupation-related information.
Professional Associations

- ☺ Computer Society of South Africa (CSSA)
- ☺ Woman In IT (WIIT)

The department has a board called Information Technology Advisory Board (ITAB), the function of this board is to advise the department of the latest trends in the IT industry as well as what is expected from a student as he / she leaves the university to join working environment.

10. Quality Assurance and Enhancement

There are two quality assessment evaluation forms that can be used: SEQ and LEQ. SEQ is a subject evaluation form. LEQ is a lecturer evaluation and covers the lecturers teaching and delivery methods. Students are urged to be truthful when filling out these questionnaires for a true reflection on the subject and lecturer. Feedback is important for the growth of the subject and lecturer. All feedback is analysed and appropriate measures implemented.
The student is required to fill out the SEQ for Applications Development 2A as a subject/module. However, the LEQ is based on the lecturer's discretion.

This Learner Guide is subject to minor changes as may be deemed necessary during the course of the semester.