STRATHMORE UNIVERSITY

FACULTY OF INFORMATION TECHNOLOGY

Bachelor of Science in Informatics

Course Outline

Unit Code and Title: BIF 3102 - .Net Framework

Lecturer: *Daniel Machanje*   **Email**: *dmachanje@strathmore.edu*

Staff Room: *Tumaini Staffroom* **(***MSB basement)*

Office Hours: *Monday – Friday (0800hrs – 1700hrs)*

Class Representative:

Aim:
• To provide an alternative Object-Oriented Programming avenue through the .NET Framework for better code implementation and application deployment.
Course Learning Outcomes: After completing this module, students should be able to: ▪ Explain fundamental concepts of the .NET platform and C#. ▪ Demonstrate an in-depth understanding of object oriented programming using C#. ▪ Develop feature-rich windows based applications. ▪ Develop and maintain web applications developed using the .NET Framework. ▪ Formulate and implement solutions to a real world problem using .NET Framework applications.
Contact Hours: 45
Prerequisite: • BIF 1202 – Java Programming • BIF 2101 – Advanced C++ Programming; • BIF 2201 – Database Systems • BIF 2203 – Operating Systems Concepts

Content

Week/Dates	Topic	Sub-topics	Activities
Week 1	• **Introduction** • **Overview of the Microsoft .NET Framework**	• Class administration • General Overview of the Microsoft .NET Framework • .NET Framework Languages • .NET Framework Services	▪ Lecture ▪ Lab tasks ▪ Discussions
Week 2	• **An Introduction to C#**	• The Visual Studio Environment • C# History • C# Structure • The CLR • The CTS	▪ Lecture ▪ Lab tasks ▪ Presentation ▪ Discussions

		• Primitive Types • Name-spaces • Statements and Expressions • "Hello World!"	
Week 3	• **Classes and Objects**	• Classes • Objects • Variables • Methods • Naming convention • Interface • Constructors • User input • Static classes • Partial Classes • Access modifiers	▪ Lecture ▪ Lab tasks ▪ Discussions
Week 4	• **Object Oriented Programming in C#**	• Inheritance • Encapsulation • Polymorphism • Abstraction	▪ Lecture ▪ Lab tasks ▪ Presentation ▪ Discussions
Week 5	• **Delegates**	• Delegate declaration • Delegate application • Multicast delegates • Application of multicast delegates	▪ Lecture ▪ Lab tasks ▪ Presentation ▪ Discussions
Week 6	• **Control Flow Statements**	• Decision-making statements • Looping statements • Branching statements	• Lecture • Lab tasks • Presentation • Discussions
Week 7	• **Events**	• Raising events • Consuming events • Event properties • Events in Web Forms	▪ Lecture ▪ Lab tasks ▪ Presentation ▪ Discussions CAT I Project Initiation
Week 8	• **Windows Form**	• Overview of Windows Form • Creating Windows Forms • Windows form UI • Event handlers • Windows forms controls • Dialog boxes	• Lecture • Lab tasks • Presentation • Discussions

		• Data binding • Graphics • Windows form Security • Deploying Windows forms Application	
Week 9	• **ADO.NET**	• Connected Architecture • Disconnected Architecture • Working with Transaction	• Lecture • Lab tasks • Presentation • Discussions
Week 11	• **ASP.NET**	• Web Application using ASP.NET • ASP.NET Architecture • Control-based Programming • User Interface Elements • Deployment • Web Sites, Applications, and Virtual Directories in IIS • ASP.NET Diagnostics and Health Monitoring	• Lecture • Lab tasks • Presentation • Discussions CAT II
Week 12	• **Windows Presentation Foundation(WPF)**	• Windows Application using WPF • Data Binding • Data Template • Styles • Commands	• Lecture • Lab tasks • Presentation • Discussions
Week 13	• **Project Presentations**	• Project Presentations	PROJECT PRESENTATION
Week 14	• Revision/Semester Review	• Revision/Semester Review	• Revision/Semester Review

Course Delivery Methodology

- Lectures will be used to introduce material on the formal aspects of the unit
- Notes will be uploaded on E-learning
- Discussions and working out problems
- Practical sessions done in labs

Academic Assessment

- CAT 1: 10%
- CAT 2: 10%
- Lab Tasks: 5%
- Project: 15%
- Examination: **60%**
- Total: **100%**

Core Reading Materials

1. Framework Conventions, Idioms, and Patterns for Reusable .NET Libraries, Krzysztof C and Abrams B., Pearson Education (2008), ISBN: 0321545613

2. Concurrent Programming in Windows, Joe Duffy and Herb Sutter, Pearson Education (2008), ISBN: 9780321434821

3. Essential Windows Communication Foundation for .NET Framework, Steve Resnick, Richard Crane and Chris Bowen, Pearson Education, ISBN: 0321440064, 978 032144006

Recommended Reference Materials

• Visual Studio 2013/2015

Classes

- Punctuality is fundamental.
- Active participation in class discussions is encouraged

Assignments and/or Course Work

- Plagiarism is a serious offense. If detected in any form in course work and assignments, the following will apply:
  - o In partial or non-serious cases (such as not citing whole word-for-word quotes), half the total possible marks of the assignment are duly struck off.
  - o In serious cases (such as whole duplication of a paper), a zero policy will apply i.e., all offending assignments will be awarded a mark of zero.
  - o *Note:* The level of seriousness referred to above is at the discretion of the lecturer. Appeals are certainly possible through the relevant channels
- Notwithstanding the above, collaboration in course work is certainly encouraged as this promotes team spirit and group synergy as long provided originality is preserved.
- APA style is the recommended referencing style.

Communication Channels

- E-mail: To make appointments or to inform the lecturer of any absenteeism from class prior to the class. However you may later be required to meet the lecturer to explain the absence
- E-Learning Forums
- Module Leader