

Module Title:	Web IV
Module Code:	04H
Level:	6
Credits:	15
Pre-Requisites:	Web III

Module Description:

The use of web frameworks in support of web application development is an important trend. The material covered in this course leads naturally to the employment of such frameworks. Students make use of a web framework to construct a website with a degree of complexity. Students gain a generic understanding of the framework-driven approach to web development, helping them to readily assimilate frameworks used in the workplace. Students are introduced to the concept of extending the functionality of an existing web-based software product or platform.

Model-View-Controller (MVC) is a design pattern that serves to solve problems commonly faced by developers and maintainers of web applications. For this reason it is the approach employed by both client- and server-side web frameworks. Developers benefit from an awareness of the key components of MVC.

Indicative Content:

- Software design patterns
 - Application of MVC principles in the design of a solution
 - Analysis of MVC versus non-MVC solution from the perspectives of: the designer and author of the code, the testers of code, the subsequent maintainers and extenders of code, the businesses employing coders, the end users of code
 - Make appropriate use of the features of an OO language in the implementation of a solution that reflects the design
 - Compare framework versus no framework from the perspectives of: the designer and author of the code, the testers of code, the subsequent maintainers and extenders of code, the businesses employing coders, the end users of code
 - Frameworks for creating server-side implementation of MVC
 - Frameworks for integrating with database, Object Relational Mapping (ORM)
 - Frameworks with integrated support for testing
 - Templating frameworks for client-side development
 - Testing strategies and compromises when testing web applications
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Module Specifications: Schools of Business & Management & Information Technology

Learning and Teaching Methods:

The module will be delivered through a combination of lectures and workshops (3 hours per week).

Specific Learning Resources:

Integrated Development Environment
Web server accessible in lab
Database server accessible in lab

Bibliography

Highly Recommended

Freeman, A. (2013) *Pro ASP.net MVC5*. New York, USA: Apress.

Galloway, J., (2014) *Professional ASP.net MVC 5*. New York, USA: John Wiley & Sons.

Recommended

Arlow, J. (2005) *UML 2 and the Unified Process (2nd edition)*. New York, USA: Addison Wesley.

Bevis, T. (2012) *C# Design Pattern Essentials*. Leigh-on-Sea, UK: Ability First Limited.

Sempf, B. (2014) *C# 5.0 All-in-one For Dummies*. New Jersey, USA: John Wiley and Sons, Inc.

Module Learning Outcomes

Subject Specific Learning Outcomes

On successful completion of this module you will be able to:

LO 1	Critically evaluate the MVC approach to designing web applications and the problems that it has evolved to solve
LO 2	Apply the MVC design pattern to the solution of a problem, and implement that solution using the features of an object-oriented language
LO 3	Demonstrate a generic understanding of the operation of web frameworks, and critically analyse their use in web application development

Assessment Title or element

Weighting (%)

Assignment: design, develop and test website using a web framework; report documenting this practical work, and analyzing the use of web frameworks (2000 words) [late semester]

80%

Presentation: explain design and implementation choices, and demonstrate website (5 mins per person) [end semester]

20%

Module Specifications: *Schools of Business & Management & Information Technology*

Information correct at point of publication.