

Liverpool John Moores University

Title: DATABASE AND WEB APPLICATION DEVELOPMENT
Status: Definitive
Code: **6508CP** (103592)
Version Start Date: 01-08-2013

Owning School/Faculty: Arts, Professional and Social Studies
Teaching School/Faculty: Dublin Business School

Team	Leader
Alistair Beere	Y

Academic Level: FHEQ6
Credit Value: 24.00
Total Delivered Hours: 75.00
Total Learning Hours: 240
Private Study: 165

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	25.000
Practical	50.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Assignment	30.0	
Report	AS2	Project	70.0	

Aims

To give learners the knowledge to understand concepts and principles of web application and architectures.

To provide a platform for learners to gain the ability to examine web application planning, design, development environments as well as application deployment.

To give learners the knowledge to understand basics of server-side technologies and apply them to develop dynamic web applications.

To develop learners' skills in current development environments, frameworks, and

toolkits.

To give learners the ability to explore current issues and latest developments in web technologies and applications.

Learning Outcomes

After completing the module the student should be able to:

- 1 Apply the use of web applications in industry.
- 2 Evaluate document mark-up languages such as XML and in current frameworks.
- 3 Develop a web application that incorporates the latest technologies and complies with W3C web standards
- 4 Configure a connection to a database from a web application using SQL or ADO.NET.
- 5 Apply advanced innovative technologies to enhance the functionality of web application components

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

ASSIGNMENT	2	4			
PROJECT	1	2	3	4	5

Outline Syllabus

1. *Web Application Overview Internet, Browsers, TCP/IP, Domain Names, URL, HTTP, Static web page versus dynamic web applications, Architectures such as 3-tier and N-tier. Client-Server computing. Guidelines on planning, designing and developing an application.*
2. *Database Analysis and Design Determining requirements and specifications; Entity Relationship Diagrams. Planning and implementation of database. Database Models, DBMS, Constraints, Joins, Normalisation, CRUD, SQL Transaction processing, DDL, DML, Data Integrity.*
3. *Advanced Elements of Mark-up Languages and more XHTML, HTML5, CSS, JavaScript, ASP.NET, PHP, DTD, XML: Presentation, DOM, Namespaces, Validation, XSLT, C# Programming: Syntax, Variables, Arrays, Operators, Data Types, Loops, Exception Handling, Events, Methods.*
4. *Web Forms and Server Controls Page Processing, Automatic Postbacks, ViewState, Web Form Processing, Validation, Event Handling, Page Control Hierarchy, Types of Server controls, Login Controls, Web Controls, List Controls, Input Validation Controls, Rich Controls*
5. *Application and State Management Anatomy of Application: Application Lifetime, Application Updates, Application Directory Structure, Page Request, Configuration, State Management, Managing Sessions and State, View State, Session State, Hidden State, Cookies, Query String.*
6. *Data Access and Data Binding Access and Transportation of Data in Applications. Integration with Application Interface, Data Source Controls. Managing Data*

Connections, Command Class, Data Reader, Data Adapter, Data Table, SQL, ADO.NET. Binding Data to Controls,

7. Navigation, Master Pages, Themes and CSS Apply Structuring and Navigating the Site, Site layout using Master Pages, Stylesheets and Themes. Style Sheet Tools, Master Page Basics, Advanced Master Pages, CSS based layout, Navigation Systems: Sitemap, Controls, XML Site Map Provider.

8. Web Application Security Securing Online Applications, Validate Input, Forms Authentication, Configuring Membership, Managing Authorization,, Securely Managing Sensitive Business Logic and Data. Vulnerabilities: SQL Injection, Cross-Site Scripting (XSS), OWASP.

9. Implement Advanced Features AJAX: Server Controls, Control Toolkit, XmlHttpRequest, DOM Scripting, Interactive Effects, Update Panel, Dynamic Data, jQuery, Plugin, Search Engine Optimization, Social Media Integration, API's, Microsoft Silverlight, Web Services, Globalization.

10. Debugging and Deployment Testing, Debugging and Deployment of Completed Web Application. Tracing, Assemblies, Internet Information Services (IIS), XAMPP, WAMP, FTP, FTP Tools, SQL and Web Server, PHP my Admin, Web Hosting, Microsoft Azure.

11. Project Teamwork: developing interpersonal skills, assigning tasks, planning, meetings, documenting the process, challenges; system requirements and analysis, development, testing, implementation, evaluation and maintenance. Presenting the product.

Learning Activities

Lectures and practicals.

References

Course Material	Book
Author	Snell Mike & Powers Lars
Publishing Year	2010
Title	Microsoft Visual Studio 2010 Unleashed
Subtitle	
Edition	1st
Publisher	Sams Prentice Hall
ISBN	

Course Material	Book
Author	Kevin Yank
Publishing Year	2012
Title	PHP & MySQL
Subtitle	Novice to Ninja
Edition	5th
Publisher	SitePoint
ISBN	

Course Material	Book
Author	MOAC
Publishing Year	2011
Title	98-364 Database Administration Fundamentals
Subtitle	
Edition	1st
Publisher	Wiley
ISBN	

Course Material	Book
Author	Ryan C. Barnett
Publishing Year	2012
Title	Web Application Defender's Cookbook
Subtitle	
Edition	1st
Publisher	Wiley
ISBN	

Notes

The creation of Web applications requires different approaches than traditional applications and involves the integration of numerous technologies. This project-oriented module will introduce learners to the Web technologies and provide experience creating interactive Web applications that go beyond static web pages. In the process learners will develop proficiency in mark-up languages, scripting languages, web forms, event-driven programming, and databases, and see how they all work together to deliver applications.