H7AIT: Advanced Internet Technologies

Long Title:	Advanced Internet Technologies
Language of Instruction:	English

Module Code:	H7AIT

Credits:	5

NFQ Level:	LEVEL 7

Field of Study:	Computer Science

Taxonomy:	Blooms

Module Delivered in	2 programme(s)

Module Coordinator:	MICHAEL BRADFORD

Module editor:	MICHAEL BRADFORD

Teaching and Learning Strategy:	A number of teaching and learning strategies are utilised in delivering this module. The strategy for teaching and learning involves the use of traditional lecture and practical sessions. Additionally, these methods are supplemented with the use of expert video based content that is used in a flip-classroom context. The practical sessions involve problem solving tasks focused on implementing internet application development solutions which adhere to recognised application architecture and design principles.

Learning Environment:	Learning will take place in a class room/lab environment with IT access. Module materials will be placed on Moodle, the college's virtual learning environment.

Module Description:	The aim of this module is to develop students' detailed understanding of the principles and design of distributed applications based on modern software frameworks and platforms.

Learning Outcomes	
On successful completion of this module the learner will be able to:	
LO1	Describe and use platforms and frameworks for distributed applications
LO2	Program and develop n-tier web applications with supporting framework technologies
LO3	Create and consume Web Services
LO4	Integrate databases into web applications

Pre-requisite learning
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.*
No requirements listed

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Module Content & Assessment

Indicative Content
Platforms and Frameworks • Modern frameworks and platforms for distributed and web computing. • Runtime environments. • Library support. • Compilation and build processes. • Bytecode and intermediary language. • Emergent technologies/languages
Programming Models • Core features and programming languages • OO programming language syntax and features • Generics • Reflection
Developing Web Applications • Framework support for web application development • Architectural approaches for web development • Application configuration • Caching • AJAX
Web services • Defining Web Services • Creating Web Services • Web Services Programming Language Support • Integrating data • Publishing Web Services • Using Web Services for Interoperability • OData & RESTful web services
Data storage • Component models for database integration • Implementing a Data Access Layer • The Object-Relational Impedance Mismatch • Using an Object-Relational Mapper
Mobile Development • Browser and device detection • Mobile specific pages
Deploying Web Applications • Target web servers • Packaging web application for deployment • Deploying to the Cloud
Teaching Methodology The learning strategy involves the use of lectures and assessments involving tutorials, mid-term exam and a project. Students will also have access to web based support.

Assessment Breakdown	%
Coursework	100.00%

Full Time

Coursework				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	n/a	2,3,4	60.00	n/a
Assignment	Quizzes	1	40.00	n/a

No End of Module Assessment

Reassessment Requirement
Coursework Only *This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.*
Reassessment Description Learners who fail this module will be required to sit a repeat module assessment where all learning outcomes will be examined.

NCIRL reserves the right to alter the nature and timings of assessment

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Module Workload

Workload: Full Time				
Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	No Description	2	Every Week	2.00
Lab	No Description	1	Every Week	1.00
Independent Learning	No Description	7.5	Every Week	7.50
			Total Hours	10.50
			Total Weekly Learner Workload	10.50
			Total Weekly Contact Hours	3.00

Workload: Part Time				
Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	No Description	2	Every Week	2.00
			Total Hours	2.00
			Total Weekly Learner Workload	2.00
			Total Weekly Contact Hours	2.00

Module Resources

Recommended Book Resources
Imar Spaanjaars 2014, *Beginning ASP.NET 4.5: In C# and VB*, Wiley **Andrew Troelsen 2012, *Pro C# and the .NET 4.5 Framework*, Apress [ISBN: 978-1430242338]**
Supplementary Book Resources
Bart De Smet 2013, *C# 5.0 Unleashed*, Sams Publishing **Martin Fowler 2003, *Patterns of enterprise application architecture*, Addison-Wesley Boston, MA [ISBN: 0321127420]** **Mueller J. P. 2013, *Microsoft ADO.NET Entity Framework Step by Step*, Microsoft Press [ISBN: 073566416]**
This module does not have any article/paper resources
This module does not have any other resources

Module Delivered in

Programme Code	Programme	Semester	Delivery
BSHC	BSc (Honours) in Computing	5	Core Subject
BSHBIS	BSc (Hons) in Business Information Systems	5	Optional