School of Science and Computing

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Teicneolaíochta
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South East
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Module Descriptor

Enterprise Systems Architecture (Computing and Mathematics)

Enterprise Systems Architecture (A14134)

Short Title: Enterprise Systems Arch.
Department: Computing and Mathematics
Credits: 5 **Level:** Advanced

Description of Module / Aims

This module aims to provide the student with an understanding of an architectural approach to development of information systems. The module introduces the constituent parts of architecture and their interrelationship. The student is introduced to the use of architectural frameworks and to the use of architecture approaches for different contexts within the organisation.

Programmes

	stage/semester/status
COMP-0610 BSc (Hons) in Software Systems Development (WD_KCSDV_B)	4 / 1 / M
COMP-0610 BSc (Hons) in Software Systems Development (WD_KDEVP_B)	4 / 7 / M
COMP-0610 BSc (Hons) in Software Systems Practice (WD_KSOFP_B)	1 / 1 / M

Indicative Content

- Architectural Structure, Components, and Interactions
- Architectural Frameworks
- Enterprise Architectures
- Data Architectures
- Information System Architectures
- Technology Architecture
- Enterprise Modelling
- Enterprise Application Architectures and Integration
- Process Management and Service Architectures
- Model Driven Architectures
- Architecture Development Methods and Capabilities

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Determine the role of architectures in the development of enterprise systems.
2. Construct architectures for business, data, technology, and enterprise applications.
3. Design a service architecture to support a set of business processes.
4. Evaluate the role of model driven architectures in enterprise application development.
5. Compare architecture development method.

Learning and Teaching Methods

- This module will be presented by a combination of lectures and computer based practicals.
- The lectures will be used to introduce new topics and their related concepts. Lectures will be supplemented by participative case studies and independent reading on the issues covered in the lecture material.
- The practical element is intended to provide the student with the skills needed to use and understand technologies available to assist in enterprise architecture design.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	36	
Practical	12	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	50%	1,3,4,5
Continuous Assessment	50%	
Assignment	50%	2,3

Assessment Criteria

<40%: Unable to interpret and describe key concepts of enterprise systems architecture.

40%–49%: Be able to interpret and describe key concepts of enterprise systems architecture.

50%–59%: Ability to discuss key concepts of enterprise systems architecture and ability to discover and integrate related knowledge in other knowledge domains.

60%–69%: Be able to solve problems within enterprise systems architecture by experimenting with the appropriate skills and tools.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of appropriate skills and tools.

Essential Material(s)

- Desfray, P. and G. Raymond. *Modelling Enterprise Architecture with TOGAF: A Practical Guide using UML and BPMN.* Waltham, MA, USA: Morgan Kaufmann/OMG Press, 2014.

Supplementary Material(s)

- Bass, L. and P. Clements. *Software Architecture in Practice.* 3rd.. Upper Saddle River, NJ, USA: Pearson, 2013.
- Bernard, S.A. *An Introduction to Enterprise Architecture.* Bloomington, IN, USA: AuthorHouse, 2012.
- Fowler, M. *Patterns of Enterprise Application Architecture.* Upper Saddle River, NJ, USA: Pearson, 2002.
- Newman, S. *Building Microservices: Designing Fine Grained Systems.* Sebastapol, CA, USA.: O'Reilly, 2015.
- Rosenfeld, L., P. Morville and J. Arango. *Information Architecture: For the Web and Beyond.* Sebastapol, CA, USA: O'Reilly, 2015.
- Russell-Rose, T. and T. Tate. *Designing the Search Experience: The Information Architecture of Discovery.* Waltham, MA, USA: Morgan-Kaufmann, 2013.

Requested Resources

- Room Type: Computer Lab
- Lecture Room: Loose Seated