

University of the West of Scotland

Module Descriptor

Session: 2023/24

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Status: Published

Title of Module: Enterprise Architecture

Code: COMP11112	SCQF Level: 11 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Graeme A McRobbie		

Summary of Module

This module focuses on system architectures with business, services, data, applications, and technologies. It in particular covers service-related technologies (SOA, MDA, WS, etc.) that enables the development of service-oriented enterprise software systems or computer systems. It explains the structure of system components, their inter-relationships, and the principles and guidelines governing their design and evolution over time with SOA. It shows a process of evolution from business architecture at the high level to software components at the low level throughout the development process. It addresses a set of enterprise viewpoints and covers different aspects of service-oriented systems in terms of a set of models with SOA including the business context model, the business process model, the business scenario model with events and services, the semantic information model with business entities and data, the service interface model with service communication and information transformation, SOA model with implementation components, and data security.

In practice, it demonstrates the use of industry architecture frameworks and development tools to build models and design the structure of a service-oriented system for an enterprise or other uses. It also discusses how to integrate existing applications into a new service-oriented system as demanded by changes in the business.

Undertaking this module will develop a range of graduate attributes. Service concepts and principles will be understood and used for service-oriented software development. Case studies will develop problem-solving skills with service-oriented methods and technology. Service-oriented architectures will be reviewed to develop critical evaluation abilities.

Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
				✓	

Face-To-Face

Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended

A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online

Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC

Online with mandatory face-to-face learning on Campus

HybridO

Online with optional face-to-face learning on Campus

Work-based Learning

Learning activities where the main location for the learning experience is in the workplace.

Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓				✓		

Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	✓	Term 2	✓	Term 3	✓
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Learning Outcomes: (maximum of 5 statements)

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

L1. Demonstrate an understanding of architectural principles, architecture evolution processes, development methods with SOA, strengths, and difficulties of service-oriented system development, and data security.

L2. Demonstrate an understanding of the development process of service-oriented systems, and service-related technologies used for the development

L3. Systematically model and design an effective service-oriented system using architectural principles, and development methods with SOA and service-related technologies

L4. Critically evaluate and apply development methods with SOA and service-related technologies in service-oriented system development

L5. Demonstrate ability to work as a member of a software development project team

Employability Skills and Personal Development Planning (PDP) Skills

SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	<p>SCQF Level 11.</p> <p>Systematically understand the principles, methods, processes, strategies, and data security in using new technologies in the development of systems for enterprises or other uses.</p> <p>Identifying and using suitable development methods and technologies in enterprise software systems, or computer systems, development.</p> <p>Understanding modern paradigms, architectures, and technologies for system development</p>
Practice: Applied Knowledge and Understanding	<p>SCQF Level 11.</p> <p>Developing an enterprise system, or a computer system, following a taught method with new technologies.</p> <p>Systematically modelling and designing an effective system using appropriate development methods and technologies.</p> <p>Showing originality and innovation in the application of knowledge and techniques.</p> <p>Critically evaluating the system developed and aspects of the domain such as architectural principles, business value, and services.</p>

Generic Cognitive skills	SCQF Level 11. Understanding the key issues in the effective analysis, design, implementation, and usability of enterprise software systems or computer systems. Being able to communicate effectively with the users and other members of a team about the system development technologies used
Communication, ICT and Numeracy Skills	SCQF Level 11. Being able to critically evaluate the methods and technologies used in the system development. Using problem-solving skills appropriate to the identified problem and creatively forming solutions to a complex enterprise software system or computer system. Critically reflecting on the relationship between theory and practice in developing solutions for enterprises' problems, or other problems
Autonomy, Accountability and Working with others	SCQF Level 11. Demonstrating an ability to work on a project with other members of a team

Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:
	Other:	
Co-requisites	Module Code:	Module Title:

* Indicates that module descriptor is not published.

Learning and Teaching	
The Learning & Teaching Strategy for this module uses a combination of lectures, tutorials and practical sessions.	
Classes are delivered weekly. Lectures will introduce and exemplify key theoretical and critical concepts as well as introduce case studies with business requirements in practice. Tutorial sessions will be given to further develop students' understanding.	
For Distance Learning students and hybrid deliveries, full use will be made of the VLE. That is, all teaching material will be made available online and students will be guided through the material. Email and video-conferencing will be used to support students	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	20
Tutorial/Synchronous Support Activity	20
Laboratory/Practical Demonstration/Workshop	8
Independent Study	152
	200 Hours Total

**Indicative Resources: (eg. Core text, journals, internet access)
The following materials form essential underpinning for the module content and ultimately for the learning outcomes:
Rosen, M., Lublinsky, B., Smith, K.T. and Balger, M.J. (2008), Applied SOA: Service-Oriented Architecture and Design Strategies, John Wiley & Sons, 2008.*
T. Erl et al., (2014), Next Generation SOA: A Concise Introduction to Service Technology & Service-Orientation, Prentice Hall*

Bell, M. (2008), *Service-Oriented Modelling: Service Analysis, Design, and Architecture*, John Wiley & Sons.*

Business Process Model and Notation (BPMN) 2.0, Object Management Group (OMG) (<http://www.bpmn.org>).*

Developing applications with a service-oriented architecture, Student Notebook (version 1.3), IBM, 2009.*

(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: [Academic engagement procedure](#)

Supplemental Information

Programme Board	Computing
Assessment Results (Pass/Fail)	No
Subject Panel	Applied and Business Computing
Moderator	tbc
External Examiner	tbc
Accreditation Details	pending
Changes/Version Number	1

Assessment: (also refer to Assessment Outcomes Grids below)

The assessment is coursework worth 100% which is undertaken and submitted at the end of the module

(N.B. (i) **Assessment Outcomes Grids** for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An **indicative schedule** listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (% of Assessment Element)	Timetabled Contact Hours
Portfolio of written work	✓	✓	✓	✓	✓	100	0
Combined Total For All Components						100%	0 hours

Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

Note(s):

1. More than one assessment method can be used to assess individual learning outcomes.

2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).
This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity

UWS Equality and Diversity Policy

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)