

MODULE TITLE	Enterprise Computing	CREDIT VALUE	15
MODULE CODE	ECM3408	MODULE CONVENER	Dr David Wakeling (Coordinator)
DURATION: TERM	1	2	3
DURATION: WEEKS	0	11 weeks	0
Number of Students Taking Module (anticipated)	11		

DESCRIPTION - summary of the module content

The vast majority of businesses now rely upon well-designed, functional, efficient and secure IT systems to carry out their day-to-day operations and to guide their business strategy. This module introduces you to the techniques required to enable the development of systems that can operate across multiple sites, perhaps even multiple countries, in a secure and efficient manner. In addition, the module highlights the issues and opportunities that can arise from the creation and storage of large-scale datasets. This module will be appropriate for any student interested in the development of enterprise-level software who is studying a programme with significant programming content.

Prerequisite module: ECM2419 and ECM2434 or equivalent.

AIMS - intentions of the module

The aim of this module is to introduce you to the enterprise-level techniques used to implement large-scale distributed systems in heterogeneous environments and to consider issues such as interoperability, performance, security and persistence of information within those systems. The module also aims to provide you with an understanding of the latest internet technologies used to assist enterprises in their operation, such as service-oriented architectures, web services and cloud computing.

INTENDED LEARNING OUTCOMES (ILOs) (see assessment section below for how ILOs will be assessed)

On successful completion of this module, **you should be able to:**

Module Specific Skills and Knowledge:

- 1 demonstrate recognition of the problems that can arise in the development of large-scale distributed information systems;
- 2 construct concurrent and distributed computing systems using an enterprise-level model (e.g. EJB, .Net);
- 3 explain the importance of usability, security, availability, scalability and performance, and show how these can be achieved in concurrent and distributed computing systems;
- 4 show an appreciation of data warehousing and data mining to leverage information from stored data;
- 5 exhibit a grasp of the benefits that modern computing systems can bring to enterprises;
- 6 display knowledge of appropriate resources for keeping abreast of developments in the area.

Discipline Specific Skills and Knowledge:

- 7 understand and use protocol specifications;
- 8 design and implement heterogeneous systems.

Personal and Key Transferable/ Employment Skills and Knowledge:

- 9 argue for the use of computer technology in business-to-consumer and business-to-business settings;
- 10 implement systems in an enterprise-level language/model.

SYLLABUS PLAN - summary of the structure and academic content of the module

- Service composition and interoperability;
- JavaScript Object Notation (JSON);
- The Extensible Markup Language (XML);
- Service-Oriented Architectures (SOA);
- Representational State Transfer (RMI);
- Database integrity and scalability;
- Data warehousing;
- NoSQL databases;
- cloud computing
- Management and governance
- data mining and analytics.

LEARNING AND TEACHING

LEARNING ACTIVITIES AND TEACHING METHODS (given in hours of study time)

Scheduled Learning & Teaching Activities	22.00	Guided Independent Study	128.00	Placement / Study Abroad	0.00
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DETAILS OF LEARNING ACTIVITIES AND TEACHING METHODS

Category	Hours of study time	Description
Scheduled learning and teaching activities	18	Lectures
Scheduled learning and teaching activities	4	Workshops
Guided independent study	30	Individual assessed work
Guided independent study	98	Guided independent study

ASSESSMENT

FORMATIVE ASSESSMENT - for feedback and development purposes; does not count towards module grade

Form of Assessment	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Not applicable			

SUMMATIVE ASSESSMENT (% of credit)

Coursework	40	Written Exams	60	Practical Exams	0
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DETAILS OF SUMMATIVE ASSESSMENT

Form of Assessment	% of Credit	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Written exam – closed book	60	2 hours - Summer Exam Period	1, 3, 4, 5, 6, 7, 9	None
Coursework – assignment	40	30 hours	2,3,7,8,10	Written

DETAILS OF RE-ASSESSMENT (where required by referral or deferral)

Original Form of Assessment	Form of Re-assessment	ILOs Re-assessed	Time Scale for Re-reassessment
Written exam – closed book	Written exam (60%)	All	August Ref/Def period
Coursework - assignment	Coursework - assignment (40%)	2, 3, 7, 8, 10	August Ref/Def period

RE-ASSESSMENT NOTES

Reassessment will be by coursework and/or written exam in the failed or deferred element only. For referred candidates, the module mark will be capped at 40%. For deferred

RESOURCES

INDICATIVE LEARNING RESOURCES - The following list is offered as an indication of the type & level of information that you are expected to consult. Further guidance will be provided by the Module Convener

ELE – <http://vle.exeter.ac.uk>

Reading list for this module:

Type	Author	Title	Edition	Publisher	Year	ISBN	Search
Set	Monson-Haefel, R	Enterprise JavaBeans	4th	Oâ€™Reilly	2004	0-596-00530-X	[Library]
Set	Alonso, Gustavo; Casati, Fabio; Kuno, Harumi and Machiraju, Vijay	Web Services: Concepts, Architectures and Applications		Springer-Verlag	2004	3-540-44008-9	[Library]
Set	Flanagan. D. and Matsumoto, Y.	The Ruby Programming Language		O'Reilly	2008	978-0596516178	[Library]
Set	St. Laurent, S., Dumbill, E. and Gruber, E.J.	Learning Rails 3		O'Reilly	2012	978-1449309336	[Library]
Set	Chak, D.	Enterprise Rails		O'Reilly	2008	978-0596515201	[Library]

CREDIT VALUE	15	ECTS VALUE	7.5
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PRE-REQUISITE MODULES ECM2419, ECM2434

CO-REQUISITE MODULES

NQF LEVEL (FHEQ) 3 (NQF level 6) **AVAILABLE AS DISTANCE LEARNING** No

ORIGIN DATE Tuesday 10 July 2018 **LAST REVISION DATE** Wednesday 08 February 2023

KEY WORDS SEARCH Enterprise computing; enterprise JavaBeans; CORBA; RMI; data warehousing; data mining.