Aston University REG/03/53(2)

Quality and Standards Committee

Module Specification

School and Subject Group		School of Engineering and Applied Science, Electronic Engineering	
Module Code		EE4007	
Module Title		Distributed Software Systems	
Module Type		Taught	
Date of introduction of new module		2001	
Level		7	Credit Value 10
Programme(s) in which module is available		MSc in Data Communications Networks MSc in Data Communications Networks (Distance Learning)	
Involvement of Other Schools		None	
Resource Split			
Name of Module Co-ordinator		Marc Eberhard	
Name of Module Advisor		Keith J Blow	
Related Modules	Pre-requisites	None	
	Co-requisites	None	
	Prohibited Combinations	None	
Minimum and Maximum Intake Sizes		None – None	

Aims of the Module

To present an overview of the general architectural features needed to build, deploy, and manage large-scale distributed object and software systems, concentrating on the enterprise object model as used by CORBA.
To apply this knowledge to a real world example to be programmed in Java using the local CORBA installation.
Students taking this module are expected to be familiar with the Java programming language.

Summary of Content

The module introduces students to Object-Oriented Software Integration in connection with a distributed software system in the form of an Object Request Broker (ORB) as defined by the Common Object Request Broker Architecture (CORBA) specifications. Students will learn the concept of the Object Management Group's (OMG) Interface Description Language (IDL) together with Language Mappings, especially the mapping to the Java programming language.
In addition, the module presents a broad overview over Interoperability and Scalability issues and how they are addressed in the context of CORBA through directory, event, transaction, security and persistent state services.
These concepts are presented using the Unified Modeling Language (UML) to demonstrate the power of UML as a communication tool between technical and non-technical persons. UML is also explained in detail as part of this approach.
The module includes a practical hands-on coursework component of CORBA programming with Java supported by tutorials and lab sessions.

Summary of Methods and Frequency of Teaching	**Tutorials** 4 hours. **Lectures** 18 hours. **Practicals** 14 hours. CORBA Laboratory

Summary of Methods of Assessment

Assessment Type	*Status*	*%*	*Requirements*	*Due*
Formal Examination	Compulsory	50.0	Final Examination. 1.5hr formal examination	23 Mar 2010
Laboratory	Compulsory	50.0	Laboratory Practical.	08 Mar 2010

Module Outcomes - what the student should gain from successful completion of the module:	Learning and Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
	Learning and Teaching Methods	Assessment Methods
A. Knowledge and Understanding		
the general architectural features needed to build, deploy, and how to manage large-scale distributed object and software systems	Lectures, Practicals, Tutorials	Formal Examination, Laboratory
B. Intellectual Skills		
C. Professional Skills		
D. Transferable Skills		

Please provide either or both of:	
(i) Introductory Learning Resources	
(ii) Core Texts	1. **Core:** Wolfgang Emmerich, “Engineering Distributed Objects”, John Wiley & Sons, 2003 2. **Core:** Gerald Brose et al, “Java Programming with CORBA”, John Wiley & Sons, 2001 3. **Supplementary:** Jon Siegel et al, “CORBA 3, Fundamentals and Programming”, John Wiley & Sons, 2000 4. **Supplementary:** Hans-Erik Eriksson et al, “UML 2 Toolkit”, John Wiley & Sons, 2004 5. **Supplementary:** Pascal Roques, “UML in Practice”, John Wiley & Sons, 2004 6. **Introductory:** Jaime NiÃśo et al, “An Introduction to Programming and Object-Oriented Design Using Java”, John Wiley & Sons, 2004 7. **Introductory:** Ken Arnold et al, “The Java Programming Language, Third Edition”, Addison-Wesley, 2000 8. **Introductory:** Mary Campione et al, “The Java Tutorial, Third Edition”, Addison-Wesley, 2001 9. **Introductory:** Mary Campione et al, “The Java Tutorial Continued”, Addison-Wesley, 1999
Reading Lists	Attached
Specification completed by:	Dr. John A.R. Williams
Date	22-Apr-2009
Date module approved by Teaching Committee(s)	
Date module approved by School Board(s)	