



MONASH University

FIT3057
Enterprise programming

Unit guide

Semester 1, 2009

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FIT3057 Enterprise programming - Semester 1, 2009

Unit leader :

Chris Ling

Lecturer(s) :

Caulfield

- Chris Ling

Tutors(s) :

Caulfield

- Chris Ling
- Eric Pau

Introduction

Welcome to FIT3057 Enterprise Programming for Semester 1, 2009. This 6 point unit is tailored for undergraduate degree programs in the Faculty of IT. This unit is centered on the development of web-based enterprise applications using Java technologies. It focuses on the role of the System Architect in developing these systems. It explores enterprise system development aspects with emphasis on the relationship between theoretical knowledge and its practical application using cases and real examples of enterprise systems.

Unit synopsis

This unit focuses on the theory and application of object-oriented programming techniques as implemented in the Java programming language, and its ability to build server and enterprise applications for the World Wide Web. Students learn about the Java EE components such as JSPs, servlets, the Enterprise Beans and database connectivity. Students are also exposed to the underlying technologies such as Java RMI, Java Applets, security and session tracking.

This unit looks at the Open Source technologies available for enterprise computing specifically Sun's Java EE specification and implementation. Students will gain practical experience with the issues and technologies related to the development of large scale enterprise systems including: Transactions and distributed transaction processing, interoperability and persistence, scalability and the choices facing enterprise system architects and developers.

Learning outcomes

Knowledge and Understanding

At the completion of this unit, students will have knowledge of a commercially relevant programming language and its associated libraries, and understanding of:

the object oriented programming paradigm and how to apply it to distributed programming the technical issues underlying distributed enterprise computing, including concurrency and transactions, interoperability, scalability and manageability the role of a System Architect in developing these systems, including managing system workload and capacity, understanding and modelling required business processes, and managing the development and testing of enterprise systems Attitudes, Values and Beliefs

At the completion of this unit, the students will:

appreciate the need to develop distributed software for the enterprise on the World Wide Web. recognise the issues involved in enterprise application development to be different from non-distributed standalone software development. Practical Skills

At the completion of this unit, students will have skills in:

constructing applications with a portable graphical user interface designing, developing and testing a small to medium size distributed application written in Java for the enterprise

Workload

For on campus students, workload commitments are:

- two-hour lecture;
- two-hour laboratory;
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations; and
- Up to 5 hours per week in some weeks, for use of a computer, including time for newsgroups/discussion groups.

Unit relationships

Prerequisites

Before attempting this unit you must have satisfactorily completed FIT2024, CSE2201 or equivalent.

Relationships

FIT3057 is a third year core unit in the System Development major of the Bachelor of ITS (BITS). It may be taken as an elective in other programs where you have satisfied the prerequisites and course rules.

You may not study this unit and CSE3420/CSE3450/GCO3823 in your degree.

Continuous improvement

Monash is committed to 'Excellence in education' (Monash Directions 2025 - <http://www.monash.edu.au/about/monash-directions/directions.html>) and strives for the highest possible quality in teaching and learning.

To monitor how successful we are in providing quality teaching and learning Monash regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. The University's Unit Evaluation policy (<http://www.policy.monash.edu/policy-bank/academic/education/quality/unit-evaluation-policy.html>) requires that

every unit offered is evaluated each year. Students are strongly encouraged to complete the surveys as they are an important avenue for students to “have their say”. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

Faculties have the option of administering the Unit Evaluation survey online through the my.monash portal or in class. Lecturers will inform students of the method being used for this unit towards the end of the semester.

Student Evaluations

If you wish to view how previous students rated this unit, please go to <http://www.adm.monash.edu.au/cheq/evaluations/unit-evaluations/>

Unit staff - contact details

Unit leader

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Mr Eric Pau

Teaching and learning method

The approach to teaching and learning include a weekly two-hour lecture and a two-hour (laboratory). Additionally, each student should spend a minimum of 8 to 12 hours for personal study every week and should allocate up to 5 hours per week in some weeks for use of a computer, including time for newsgroup and discussion.

Tutorial allocation

On-campus students should register for tutorials/laboratories using Allocate+.

Communication, participation and feedback

Monash aims to provide a learning environment in which students receive a range of ongoing feedback throughout their studies. You will receive feedback on your work and progress in this unit. This may take the form of group feedback, individual feedback, peer feedback, self-comparison, verbal and written feedback, discussions (on line and in class) as well as more formal feedback related to assignment marks and grades. You are encouraged to draw on a variety of feedback to enhance your learning.

It is essential that you take action immediately if you realise that you have a problem that is affecting your study. Semesters are short, so we can help you best if you let us know as soon as problems arise. Regardless of whether the problem is related directly to your progress in the unit, if it is likely to interfere with your progress you should discuss it with your lecturer or a Community Service counsellor as soon as possible.

Unit Schedule

Week	Topic	Key dates
1	Introduction, Java Revision	
2	Network Programming	
3	Client-Side Java	Week 2 Exercise due
4	Database programming - JDBC	Week 3 Exercise due
5	Enterprise Computing, Introduction to Java EE	Week 4 Exercise due
6	Persistence	
Mid semester break		
7	Web Tier 1	Unit Test (during tutorial)
8	Web Tier 2	Week 7 Exercise due
9	Session Beans	Week 8 Exercise due
10	Message Driven Beans	Week 9 Exercise due
11	JMS	
12	Extra topic	Java EE assignment due on Friday 29 May
13	Revision	

Unit Resources

Prescribed text(s) and readings

None

Recommended text(s) and readings

- Wigglesworth, J. and P. McMillan (2004). Java Programming: Advanced Topics. 3rd Edition. Cambridge, Mass, ISBN 0619159685
- Horstmann, C.S. and G. Cornell (2005). Core Java 2 Volume 2 - Advanced Features, Sun Microsystems. ISBN 0131118269
- Horstmann, C.S. (2008). Big Java. 3rd Edition.
- The Java EE Tutorial (2007). Sun Microsystems. Available from Sun Java EE website.
- Burke, B. and Monson-Haefel, R. (2006). Enterprise JavaBeans 3.0, 5th Edition, O'Reilly. ISBN 059600978X
- Mukhar, K. and Zelenak, C. (2006). Beginning Java EE 5 From Novice to Professional, Apress. ISBN 1590594703 (pbk)

Others:

- Matena, V., S. Krishnan, L. DeMichiel and B. Stearns (2003). Applying Enterprise JavaBeans Second Edition, Sun Microsystems.
- Boone, K (2003). Applied Enterprise JavaBeans Technology, Prentice Hall.
- Ahmed, K and C. Umrysh (2002) Developing Enterprise Java Applications with J2EE and UML, Addison Wesley.

Required software and/or hardware

You will need access to:

- Java SE 6
- Sun Java System Application Server 9.1
- NetBeans IDE

Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to **n** hours per week for use of a computer, including time for newsgroups/discussion groups.

Study resources

Study resources we will provide for your study are:

- Weekly detailed lecture notes outlining the learning objectives and discussion of the content.
- Weekly laboratory tasks and exercises with sample solutions provided one to two weeks later;
- Assignment specifications and sample solution;
- A sample examination and suggested solution
- Discussion groups;
- This Unit Guide outlining the administrative information for the unit;
- The unit web site on MUSO, where resources outlined above will be made available.

Library access

The Monash University Library site contains details about borrowing rights and catalogue searching. To learn more about the library and the various resources available, please go to <http://www.lib.monash.edu.au>.

The Educational Library and Media Resources (LMR) is also a very resourceful place to visit at <http://www.education.monash.edu.au/library/>

Monash University Studies Online (MUSO)

All unit and lecture materials are available through MUSO (Monash University Studies Online). Blackboard is the primary application used to deliver your unit resources. Some units will be piloted in Moodle. If your unit is piloted in Moodle, you will see a link from your Blackboard unit to Moodle (<http://moodle.monash.edu.au>) and can bookmark this link to access directly. In Moodle, from the Faculty of Information Technology category, click on the link for your unit.

You can access MUSO and Blackboard via the portal: <http://my.monash.edu.au>

Click on the Study and enrolment tab, then Blackboard under the MUSO learning systems.

In order for your Blackboard unit(s) to function correctly, your computer needs to be correctly configured.

For example:

- Blackboard supported browser
- Supported Java runtime environment

For more information, please visit: <http://www.monash.edu.au/muso/support/students/downloadables-student.html>

You can contact the MUSO Support by phone : (+61 3) 9903 1268

For further contact information including operational hours, please visit:

<http://www.monash.edu.au/muso/support/students/contact.html>

Further information can be obtained from the MUSO support site:

<http://www.monash.edu.au/muso/support/index.html>

Assessment

Unit assessment policy

The unit assessment consists of:

- unsupervised assessment (weekly tutorial exercises and one assignment); and
- supervised assessment (one unit test and a three-hour closed book examination).

To pass the unit you must:

- achieve no less than 40% of the marks for supervised assessment (the unit test and the exam combined); and
- achieve no less than 40% of the marks for unsupervised assessment (the tutorial exercises and the assignment combined); and
- obtain at least 50% of the possible marks for the unit after the assessment formula is applied to the supervised and unsupervised components.

If a student does not achieve 40% or more in the unit examination or the unit non-examination assessment then a mark of no greater than 44-N will be recorded for the unit

Assignment tasks

- **Assignment Task**

Title : Lab Exercises

Description :

Programming tasks in the lab.

Weighting : 20%

Criteria for assessment :

The weekly specification and marking criteria will be distributed in that week.

Due date : Each weekly exercise will be due for assessment in the following week's class.

• **Assignment Task**

Title : Enterprise System Development

Description :

To develop a non-trivial web-based enterprise system.

Weighting : 30%

Criteria for assessment :

The specification and the marking criteria will be released in Week 4.

Due date : Friday 23 May (Week 12)

• **Assignment Task**

Title : Unit Test

Description :

The one-hour closed book unit test to be conducted during Week 7 lab classes.

Weighting : 10%

Criteria for assessment :

Due date : Week 7 lab classes

Examinations

• **Examination 1**

Weighting : 40%

Length : 3 hours

Type (open/closed book) : Closed book

Remarks (optional - leave blank for none) :

This will be conducted during the university exam period.

Assignment submission

The Enterprise System Development assignment should be submitted electronically using MUSO. The due date is the date by which the the submission is to be posted.

Every lab exercises will be marked in the following week's tutorial classes.

Assignment coversheets

The work submitted must be your own work. Just as a written assignment requires you to sign a statement that the work is your own work, electronically submitted assignments must also contain a similar declaration. The cover sheet for the Faculty of Information Technology, can be found at

<http://www.infotech.monash.edu.au/resources/student/assignments/> . The text of the section titled "Student's Statement" should be typed into a file named **declaration.txt**, to be submitted with your other files.

University and Faculty policy on assessment

Due dates and extensions

The due dates for the submission of assignments are given in the previous section. Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are seldom regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Requests for extensions must be made to the unit lecturer at your campus at least two days before the due date. You will be asked to forward original medical certificates in cases of illness, and may be asked to provide other forms of documentation where necessary. A copy of the email or other written communication of an extension must be attached to the assignment submission.

It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Late assignment

Assignments received after the due date will be subject to a penalty of a drop in grade for each 5 day period. Assignments received later than one week after the due date will not normally be accepted.

Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Assessment for the unit as a whole is in accordance with the provisions of the Monash University Education Policy at <http://www.policy.monash.edu/policy-bank/academic/education/assessment/>

We will aim to have assignment results made available to you within two weeks after assignment receipt.

Plagiarism, cheating and collusion

Plagiarism and cheating are regarded as very serious offences. In cases where cheating has been confirmed, students have been severely penalised, from losing all marks for an assignment, to facing disciplinary action at the Faculty level. While we would wish that all our students adhere to sound ethical conduct and honesty, I will ask you to acquaint yourself with Student Rights and Responsibilities (<http://www.infotech.monash.edu.au/about/committees-groups/facboard/policies/studrights.html>) and the Faculty regulations that apply to students detected cheating as these will be applied in all detected cases.

In this University, cheating means seeking to obtain an unfair advantage in any examination or any other written or

practical work to be submitted or completed by a student for assessment. It includes the use, or attempted use, of any means to gain an unfair advantage for any assessable work in the unit, where the means is contrary to the instructions for such work.

When you submit an individual assessment item, such as a program, a report, an essay, assignment or other piece of work, under your name you are understood to be stating that this is your own work. If a submission is identical with, or similar to, someone else's work, an assumption of cheating may arise. If you are planning on working with another student, it is acceptable to undertake research together, and discuss problems, but it is not acceptable to jointly develop or share solutions unless this is specified by your lecturer.

Intentionally providing students with your solutions to assignments is classified as "assisting to cheat" and students who do this may be subject to disciplinary action. You should take reasonable care that your solution is not accidentally or deliberately obtained by other students. For example, do not leave copies of your work in progress on the hard drives of shared computers, and do not show your work to other students. If you believe this may have happened, please be sure to contact your lecturer as soon as possible.

Cheating also includes taking into an examination any material contrary to the regulations, including any bilingual dictionary, whether or not with the intention of using it to obtain an advantage.

Plagiarism involves the false representation of another person's ideas, or findings, as your own by either copying material or paraphrasing without citing sources. It is both professional and ethical to reference clearly the ideas and information that you have used from another writer. If the source is not identified, then you have plagiarised work of the other author. Plagiarism is a form of dishonesty that is insulting to the reader and grossly unfair to your student colleagues.

Register of counselling about plagiarism

The university requires faculties to keep a simple and confidential register to record counselling to students about plagiarism (e.g. warnings). The register is accessible to Associate Deans Teaching (or nominees) and, where requested, students concerned have access to their own details in the register. The register is to serve as a record of counselling about the nature of plagiarism, not as a record of allegations; and no provision of appeals in relation to the register is necessary or applicable.

Non-discriminatory language

The Faculty of Information Technology is committed to the use of non-discriminatory language in all forms of communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however, the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your communications and written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are, therefore, requested to check for this and to ensure your work and communications are non-discriminatory in all respects.

Students with disabilities

Students with disabilities that may disadvantage them in assessment should seek advice from one of the following before completing assessment tasks and examinations:

- Faculty of Information Technology Student Service staff, and / or
- your Unit Coordinator, or
- Disabilities Liaison Unit

Deferred assessment and special consideration

Deferred assessment (not to be confused with an extension for submission of an assignment) may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Information and forms for Special Consideration and deferred assessment applications are available at <http://www.monash.edu.au/exams/special-consideration.html>. Contact the Faculty's Student Services staff at your campus for further information and advice.