COIT13235 *Enterprise Software Development*
Term 2 - 2018

Profile information current as at 05/05/2024 07:57 pm

General Information

Overview

This unit introduces you to the practical issues involved in the design and implementation of robust enterprise software applications, enabling business-to-business and business-to-customer operations. You will be learning data persistence and managing persistent objects, which will extend your knowledge of object-oriented programming. You will learn to assemble several open source tools and use well-known design patterns to build portable, highly available and maintainable software applications. You will be applying your knowledge to develop 3-tiered practical enterprise systems with a data persistence tier, business logic layer and a web-based presentation tier.

Details

Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Prerequisite: COIT11134 and COIT11237 OR COIT11134 and COIT12167
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2018

- Brisbane
- Cairns
- Distance
- Melbourne
- Rockhampton
- Sydney
- Townsville

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 25%
2. **Practical and Written Assessment**
Weighting: 25%
3. **Practical and Written Assessment**
Weighting: 40%
4. **Presentation**
Weighting: 10%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student feedback response

Feedback
Overall statisfaction

Recommendation
The overall student satisfaction fell in comparison to past terms. This can be largely due to less participation of students in the survey; which in turn did not truly represent the entire student population. 1) It is to recommend that in-campus teaching staff orient students about the importance of survery and encourage them to participate in the survey. 2) It is to also recommend that teaching staff emphasise students to partcipate regularly in all lecturer and tutorials to understand and grasp technologies used in the course. Unless students take ample self-initiatives and drives, without a facilitator course like this can be difficult to understand and digest. [3] In future, the CC and teaching staff should encourage students to participate in online forum and discussions to harness engagement.

Feedback from Student feedback response

Feedback
Moodle navigation

Recommendation
[1] Besides the changes in assessment questions, all learning resources were similar to previous term. Whilst saying this, the course rating fell from 4.6 to 3.5. It is partly due to very limited number of students participated in the survey. [2] Likewise, in future, we need to look into ways and means to improve navigations using appropriate blocks, sections or hyperlinks in Moodle course site. [3] Subsequently, since navigation is a very broad term, specific questions in future surveys relating to navigation will help to rectify the problem.

Feedback from Student feedback response

Feedback
Learning resources

Recommendation
The course website provided all resources: lecturer slides, tutorial activities and instructions, instructional videos, and other supplementary technical documents for students to learn and apply all technologies covered in the course. While observing lab sessions in Sydney campus, students fully used those resources. In many occassions, students told that the instructional resources including videos helped them a lot to learn and apply the tools and technologies. Recommendation: In future, additional supplementary learning resources such as links to external reading materials and videos in Moodle site will help students to build more confidence on the technologies used in the course.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Explain the design rationale for n-tiered software architectures
2. Discuss underlying principles and constructs used to achieve data persistence
3. Use persistent objects and object-relational mapping in software application development
4. Implement a 3-tiered enterprise software system integrating data persistence, business logic, and web tiers
5. Analyse effectiveness of enterprise software systems for business operations and present the analysis results in an oral presentation
6. Work collaboratively in a team contributing to productive software development.

Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA is in use in over 100 countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles.
ACS members can use the tool MySFIA to build a skills profile at
https://www.acs.org.au/professionalrecognition/mysfia-b2c.html
This unit contributes to the following workplace skills as defined by SFIA. The SFIA code is included:

- Programming/Software Development (PROG)
- Database design (DBDS)
- Systems design (DESN)
- Testing (TEST)
- Systems integration (SINT)
- Release and deployment (RELM)

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level ◦ Introductory Level • Intermediate Level • Graduate Level ◦ Professional Level ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 25%	•	•				
2 - Practical and Written Assessment - 25%			•			•
3 - Practical and Written Assessment - 40%			•	•	•	•
4 - Presentation - 10%					•	

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Communication	•	•	•	•	•	•
2 - Problem Solving			•	•		

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
3 - Critical Thinking	•	•	•	•	•	
4 - Information Literacy	•	•	•	•	•	
5 - Team Work						•
6 - Information Technology Competence	•	•	•	•		
7 - Cross Cultural Competence					•	•
8 - Ethical practice				•		•
9 - Social Innovation						
10 - Aboriginal and Torres Strait Islander Cultures						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 25%	•		•	•		•				
2 - Practical and Written Assessment - 25%	•	•	•	•	•	•				
3 - Practical and Written Assessment - 40%	•		•	•	•	•		•		
4 - Presentation - 10%	•			•			•			

Textbooks and Resources

Textbooks

COIT13235

Prescribed

Beginning Java EE 7
Edition: 1 (2013)
Authors: Antonio Goncalves
Apress
New York , NY , USA
ISBN: 978-1-4302-4626-8
Binding: Paperback

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Apache Maven 3 or higher
- Derby database 10.6 or higher
- GlassFish application server 4.0 or higher
- Java Development Kit (JDK) 1.7 or higher
- NetBeans IDE 8 or higher
- Prescribed text: Beginning Java EE 7 (2013). Author and publisher information: Antonio Goncalves, Apress, New York, NY, USA. ISBN 978-1-4302-4626-8

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Mary Tom Unit Coordinator
m.tom@cqu.edu.au

Schedule

Week 1 - 09 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Enterprise Computing & Java EE	1 and 4	Work on tutorial exercise(s). No submissions required.

Week 2 - 16 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Object-Relational Mapping	5	Work on tutorial exercise(s). No submissions required.

Week 3 - 23 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic

Managing Persistent Objects	5 and 6	Work on tutorial exercise(s). No submissions required.

Week 4 - 30 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Callbacks and Listeners	6	Work on tutorial exercise(s). No submissions required.

Week 5 - 06 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Enterprise Java Beans	7	**Written Assessment** Due: Week 5 Monday (6 Aug 2018) 11:55 pm AEST

Vacation Week - 13 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
		Work on tutorial exercise(s). No submissions required.

Week 6 - 20 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Session Beans	7	Work on tutorial exercise(s). No submissions required.

Week 7 - 27 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Callbacks, Timer Service and Authorization	8	**Practical and written assessment** Due: Week 7 Friday (31 Aug 2018) 11:55 pm AEST

Week 8 - 03 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
JavaServer Faces	10	Work on tutorial exercise(s). No submissions required.

Week 9 - 10 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Pages and Components	10	Work on tutorial exercise(s). No submissions required.

Week 10 - 17 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Processing and Navigation	11	Work on tutorial exercise(s). No submissions required.

Week 11 - 24 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Transactions	9	**Practical and written assessment** Due: Week 11 Friday (28 Sept 2018) 11:55 pm AEST

Week 12 - 01 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
Messaging	13	Deliver presentation. **Presentation** Due: Week 12 Friday (5 Oct 2018) 11:55 pm AEST

Review/Exam Week - 08 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
This course does not have examination.		

Exam Week - 15 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
This course does not have examination.		

Term Specific Information

Mahesh Kayastha
Unit Coordinator
Email: m.kayastha@cqu.edu.au

Assessment Tasks

1 Written Assessment

Assessment Type
Written Assessment

Task Description
This is an individual assessment. It focuses on underlying and constructs used to achieve data persistence. Object Relational Mapping (ORM) is a programming technique used for data conversion. Specifically, the conversion occurs from various object-oriented languages into SQL-compatible relations. In this assessment you will write a technical report on ORM.

Assessment Due Date
Week 5 Monday (6 Aug 2018) 11:55 pm AEST
You must submit this assessment within the due date. Failing to do so may attract late submission penalty as set out in the grading policy of the university.

Return Date to Students
Week 7 Friday (31 Aug 2018)

Weighting
25%

Assessment Criteria
This assessment will assess your skills in conducting literature research (that also may include technology specific documents) and writing a technical document in the form of an academic report. In this assessment you are required to evaluate three (3) Object Relational Mapping (ORM) technologies highlighting their usefulness, strengths, and limitations.
The specification and marking criteria for this assessment will be provided in the unit website in Moodle.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You must submit your report in a Microsoft Word document format.

Learning Outcomes Assessed

- Explain the design rationale for n-tiered software architectures
- Discuss underlying principles and constructs used to achieve data persistence

Graduate Attributes

- Communication
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 Practical and written assessment

Assessment Type
Practical and Written Assessment

Task Description
This is an individual assessment.
This assessment focuses on using Java Persistence API (JPA), Object Relational Mapping (ORM) and Java Persistence Query Language (JPQL) technologies in software application development. In this assessment you will design and deliver a software solution that fulfills the requirements (storing and retrieving data in Derby database server using JPA, ORM, and JPQL) specified in the business case.
The business case, assessment specification and marking criteria can be found in the unit website in Moodle.

Assessment Due Date
Week 7 Friday (31 Aug 2018) 11:55 pm AEST

Return Date to Students
Week 9 Friday (14 Sept 2018)

Weighting
25%

Assessment Criteria
In this assessment you are required to design, implement, test and document the persistence tier of a Java Enterprise Application using Derby database server and Apache Maven. This assignment will assess your competency in enterprise software paradigm and Java Persistence API (JPA) programming. Since this assignment will lay the foundation for Assessment-3, it is important that you spend ample time to understand and implement it.
The assessment specification and marking criteria can be found in the unit website in Moodle.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You need to submit a zipped file (.zip) containing (1) your project implementation, and (2) system documentation as a Microsoft Word document.

Learning Outcomes Assessed

- Use persistent objects and object-relational mapping in software application development
- Work collaboratively in a team contributing to productive software development.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence

3 Practical and written assessment

Assessment Type
Practical and Written Assessment

Task Description
This is a group assessment. The group cannot exceed more than 2 team members.
This assessment focuses on implementing a 3-tiered software system integrating data persistence, business logic, and web component tiers. Likewise, it also focuses on working in a team environment and work collaboratively to build software.
In this assessment you are required to design, implement, test and document a fully functional 3-tier (presentation, business, and persistence tiers) web based enterprise application system. Since this is an extension of your Assessment-2, you will reuse the Entity Classes, Object Relational Mapping (ORM), and Java Persistence Query Language (JPQL) that you developed in Assessment-2 as Persistence Tier for this assessment. The purpose of this assessment is to assess your competency in enterprise software paradigm, Java Server Faces (JSF), Enterprise Java Beans (EJB) programming, and the inter-operations between these 3-tiers of an enterprise application.
The assessment specification and marking criteria can be found in the unit website in Moodle.

Assessment Due Date
Week 11 Friday (28 Sept 2018) 11:55 pm AEST

Return Date to Students
Exam Week Friday (19 Oct 2018)

Weighting
40%

Assessment Criteria
This assessment will assess your knowledge and competence in designing, developing, testing, and documenting a 3-tier enterprise application that uses Java enterprise and associated technologies such as Object Relational Mapping (ORM), Java Persistence API (JPA), Java Persistence Query Language (JPQL), Java Server Faces (JSF), Enterprise Java Beans (EJB), Derby Database Server, Glassfish Application Server, and Maven.
The assessment specification and marking criteria can be found in the unit website in Moodle.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Each member of your group must submit a zipped file (.zip) containing (1) your project implementation, and (2) system documentation as a Microsoft Word document.

Learning Outcomes Assessed

- Use persistent objects and object-relational mapping in software application development
- Implement a 3-tiered enterprise software system integrating data persistence, business logic, and web tiers
- Analyse effectiveness of enterprise software systems for business operations and present the analysis results in an oral presentation
- Work collaboratively in a team contributing to productive software development.

Graduate Attributes

- Communication
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Ethical practice

4 Presentation

Assessment Type
Presentation

Task Description
This is an individual assessment and involves in-class oral presentation (for all in-campus students). The Unit Coordinator will set appropriate provisions for all distance or flexible students.
This assessment focuses on your ability to analyse the effectiveness of enterprise systems for business operations and present the analysis results in the oral presentation. Your presentation will contain two parts:
1. Review and analyse 2 peer-reviewed journal articles or conferences papers on the use of enterprise computing for organisational or business productivity. Your journals or articles must not be older that 5 years.
2. Relate how your works in Assessment-2 and Assessment-3 relate to that paradigm (your analyses in above 1)

Assessment Due Date
Week 12 Friday (5 Oct 2018) 11:55 pm AEST

Return Date to Students
Exam Week Friday (19 Oct 2018)

Weighting
10%

Assessment Criteria
This is an individual assessment.
This assessment will evaluate your critical skills in reviewing and analyzing relevant academic literature and relate that with the software that you have developed in Assessment-3. Although you may have worked in a group in Assessment-3,

you still need to prepare and give this oral presentation individually.
The assessment specification and marking criteria can be found in the unit website in Moodle.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You must submit your presentation slides prepared in a single Microsoft PowerPoint.

Learning Outcomes Assessed

- Analyse effectiveness of enterprise software systems for business operations and present the analysis results in an oral presentation

Graduate Attributes

- Communication
- Information Literacy
- Cross Cultural Competence

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem