



# COIT13235 *Enterprise Software Development*

## Term 2 - 2018

Profile information current as at 26/04/2024 03:32 pm

All details in this unit profile for COIT13235 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## 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 satisfaction

**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 survey and encourage them to participate in the survey. 2) It is to also recommend that teaching staff emphasise students to participate 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 occasions, 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



### Alignment of Assessment Tasks to Learning Outcomes

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

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
<b>1 - Communication</b>	•	•	•	•	•	•
<b>2 - Problem Solving</b>			•	•		

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](mailto: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
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Managing Persistent Objects	5 and 6	Work on tutorial exercise(s). No submissions required.
<b>Week 4 - 30 Jul 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Callbacks and Listeners	6	Work on tutorial exercise(s). No submissions required.
<b>Week 5 - 06 Aug 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Enterprise Java Beans	7	<b>Written Assessment</b> Due: Week 5 Monday (6 Aug 2018) 11:55 pm AEST
<b>Vacation Week - 13 Aug 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
		Work on tutorial exercise(s). No submissions required.
<b>Week 6 - 20 Aug 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Session Beans	7	Work on tutorial exercise(s). No submissions required.
<b>Week 7 - 27 Aug 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Callbacks, Timer Service and Authorization	8	<b>Practical and written assessment</b> Due: Week 7 Friday (31 Aug 2018) 11:55 pm AEST
<b>Week 8 - 03 Sep 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
JavaServer Faces	10	Work on tutorial exercise(s). No submissions required.
<b>Week 9 - 10 Sep 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Pages and Components	10	Work on tutorial exercise(s). No submissions required.
<b>Week 10 - 17 Sep 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Processing and Navigation	11	Work on tutorial exercise(s). No submissions required.
<b>Week 11 - 24 Sep 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Transactions	9	<b>Practical and written assessment</b> Due: Week 11 Friday (28 Sep 2018) 11:55 pm AEST
<b>Week 12 - 01 Oct 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Messaging	13	Deliver presentation. <b>Presentation</b> Due: Week 12 Friday (5 Oct 2018) 11:55 pm AEST
<b>Review/Exam Week - 08 Oct 2018</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
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 than 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