



# COIT13235 *Enterprise Software Development*

## Term 2 - 2019

Profile information current as at 26/04/2024 06:32 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 - 2019

- Brisbane
- Cairns
- Melbourne
- Online
- 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 Self-reflection

**Feedback**

Students experienced difficulty in installing Database Server, Application server, and development tools used in this unit.

**Recommendation**

Detailed software installation instructions and set up guidelines will be provided for Term 2, 2019 delivery of this unit.

#### Feedback from Self-reflection

**Feedback**

The one week time window between assignment 3 and assignment 4 is too short.

**Recommendation**

Assignment 4 specification will be changed to reflect students' understanding of enterprise computing as they have learnt from Assignment 3. The one week time window will be enough for this task.

#### Feedback from Student feedback

**Feedback**

Students had trouble forming groups for Assignment 3 which is a team based development of a software application.

**Recommendation**

A detailed membership agreement will be added to the assignment specification to guide the forming of teams; the unit coordinator will facilitate team forming for Distance mode students.

#### Feedback from Student feedback

**Feedback**

Some of the unit resources, such as videos and lecture slides, were not of a high quality.

**Recommendation**

All the lecture slides, lab projects, and tutorial materials will be fully re-developed for Term 2, 2019.

## 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
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			•	•		
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%	•		•	•		•				

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
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

(2013)

Authors: Antonio Goncalves

Apress

New York , NY , USA

ISBN: 978-1-4302-4626-8

Binding: Other

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- JDK 1.8 or a higher version, NetBeans IDE (Java EE version) 8.1 or a higher version, Derby Database 10 or a higher version, GlassFish 4.1 Application Server

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Wei Li** Unit Coordinator

[w.li@cqu.edu.au](mailto:w.li@cqu.edu.au)

## Schedule

### Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Enterprise Computing & Java EE	1 & 4	

### Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic

Object-Relational Mapping	5	
<b>Week 3 - 29 Jul 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Managing Persistent Objects	5 & 6	
<b>Week 4 - 05 Aug 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Callbacks and Listeners	6	
<b>Week 5 - 12 Aug 2019</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 Friday (16 Aug 2019) 11:55 pm AEST
<b>Vacation Week - 19 Aug 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
<b>Week 6 - 26 Aug 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Session Beans	7 & 8	
<b>Week 7 - 02 Sep 2019</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 (6 Sept 2019) 11:55 pm AEST
<b>Week 8 - 09 Sep 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
JavaServer Faces	10	
<b>Week 9 - 16 Sep 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Pages and Components	10	
<b>Week 10 - 23 Sep 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Processing and Navigation	11	
<b>Week 11 - 30 Sep 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
SOAP Web Service	14	<b>Practical and written assessment</b> Due: Week 11 Friday (4 Oct 2019) 11:55 pm AEST
<b>Week 12 - 07 Oct 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Messaging	13	<b>Presentation</b> Due: Week 12 Friday (11 Oct 2019) 11:55 pm AEST
<b>Review/Exam Week - 14 Oct 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
<b>Exam Week - 21 Oct 2019</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>

## Term Specific Information

The unit coordinator of this term is:  
Dr. Wei Li  
School of Engineering & Technology  
Central Queensland University  
Rockhampton QLD 4702, Australia  
Phone: +61 7 4930 9686  
Email: w.li@cqu.edu.au

## Assessment Tasks

### 1 Written Assessment

**Assessment Type**

Written Assessment

**Task Description**

Your task for this assignment is to write a technical report on the topic of Review of Cloud Computing, which is a service-oriented architecture for enterprise computing. The purpose of this assignment is to assess your competency in review, critique and clarification of a technical issue and writing a formal academic report.

The assignment specification and marking criteria can be found from the unit Moodle site.

**Assessment Due Date**

Week 5 Friday (16 Aug 2019) 11:55 pm AEST  
Assignment-1 Due

**Return Date to Students**

Week 6 Friday (30 Aug 2019)  
Assignment-1 Results Release

**Weighting**

25%

**Assessment Criteria**

The assignment will be assessed by the format, technical contents and referencing of the report. The detailed marking criteria can be found from the unit Moodle site.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

You must submit your assignment via the online submission system from the unit Moodle site.

**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

The application scenario of this assignment is a 3-tier enterprise software system. Your task of this assignment is to design, implement and test the persistence tier only. The purpose of this assignment is to assess your competence of applying Java Persistence API (JPA) to design and manipulate persistence entities.

The assignment specification and marking criteria can be accessed from the unit Moodle site.

### Assessment Due Date

Week 7 Friday (6 Sept 2019) 11:55 pm AEST

Assignment 2 Due

### Return Date to Students

Week 9 Friday (20 Sept 2019)

Assignment 2 Results Release

### Weighting

25%

### Assessment Criteria

The students are assessed mainly against their documentation (design and test) quality, software implementation correctness. The detailed marking criteria can be accessed from the unit Moodle site.

### Referencing Style

- [Harvard \(author-date\)](#)

### Submission

Online

### Submission Instructions

You must submit your assignment via the online submission system from the unit Moodle site.

### 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

The application scenario of this assignment is the same as Assignment 2. You will be tasked with a team-based software development project. You will be part of a small team to design, implement, test and document a complete three-tier enterprise application system. The purpose of this assignment is to assess your competence in enterprise computing paradigms, such as Java ServerFaces (JSF), Enterprise Java Beans (EJB) and Java Persistence API (JPA) programming, and the interoperations between tiers of an enterprise application. Your ability to work collaboratively in a small team will also be assessed by this assignment.

The assignment specification and marking criteria can be accessed from the unit Moodle site.

### Assessment Due Date

Week 11 Friday (4 Oct 2019) 11:55 pm AEST

Assignment 3 Due

### **Return Date to Students**

Certification of Grade

### **Weighting**

40%

### **Assessment Criteria**

The students are assessed mainly against their documentation (design and test) quality, software implementation correctness and team work report. The detailed marking criteria can be accessed from the unit Moodle site.

### **Referencing Style**

- [Harvard \(author-date\)](#)

### **Submission**

Online

### **Submission Instructions**

You must submit your assignment via the online submission system from the unit Moodle site.

### **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 assignment is an oral presentation of enterprise application development based on what you have learnt from this unit lectures, practised from this unit tutorials, labs & other assignments and personal study from other resources.

The assignment specification and marking criteria can be accessed from the unit Moodle site.

### **Assessment Due Date**

Week 12 Friday (11 Oct 2019) 11:55 pm AEST

Assignment 4 Due

### **Return Date to Students**

Certification of Grade

### **Weighting**

10%

### **Assessment Criteria**

This assignment will be marked for both the PowerPoint document and the oral presentation.

### **Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

You must submit your assignment via the online submission system from the unit Moodle site.

**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