COIT12211 *Introduction to Blockchain Technologies*

Term 2 - 2023

Profile information current as at 12/10/2024 05:09 pm

All details in this unit profile for COIT12211 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

Blockchain is a decentralised digital ledger with a growing list of records called blocks, which contain timestamp data, cryptographic information and transaction details. Blockchain is considered a disruptive and emerging technology, with a wide range of potential applications despite being mainly associated with cryptocurrency. The use of blockchain technologies has grown exponentially over the years in many industries including retail, service and finance. While there is a huge potential for blockchain technologies in many industries, there currently exists a blockchain skills shortage. This unit will introduce you to the blockchain concepts, business applications and security concerns. In addition, the unit complements this knowledge with opportunities to design and develop your own blockchain applications.

Details

Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Pre-requisite COIT11238
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 - 2023

- Online

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. **Presentation**
Weighting: 25%
3. **Group Work**
Weighting: 50%

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

Video recordings explaining assessment requirements helped students and teaching staff across all campuses gain the same understanding.

Recommendation

Continue to provide video recordings detailing assessment requirements on the Moodle unit website.

Feedback from Self-reflection

Feedback

Lecture and tutorial contents need updating.

Recommendation

Review lecture slides and lab/tutorial activities, and update these with recent cases and technical content to provide students an opportunity to develop Blockchain-based applications.

Unit Learning Outcomes

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

1. Explain the fundamentals of blockchain technologies
2. Examine the application of blockchain technologies in various industries
3. Prepare a business case for blockchain technologies adoption
4. Design an enterprise blockchain application
5. Implement an enterprise blockchain application
6. Report relevant critical success factors and best practices in blockchain technologies adoption.

The Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA is adopted by organisations, governments and individuals in many 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.

This unit contributes to the following workplace skills as defined by SFIA 7 (the SFIA code is included):

Business Process Improvement (BPRE)

Innovation (INOV)

Information Security (SCTY)

IT Management (ITMG)

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 - Presentation - 25%	•	•	•	•	•	
3 - Group Work - 50%			•		•	•

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%	•	•	•	•		•				
2 - Presentation - 25%	•	•	•	•	•	•				
3 - Group Work - 50%	•	•	•	•	•	•				

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Access to a computer is recommended
- Geth (Go Ethereum)
- Ganache
- Node JS
- Truffle
- Visual Studio Code

Referencing Style

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

Teaching Contacts

Srimannarayana Grandhi Unit Coordinator
s.grandhi@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Blockchain Technology	Materials will be provided	

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Types of Blockchain	Materials will be provided	

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cryptography	Materials will be provided	

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Blockchain Network	Materials will be provided	

Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Blockchain Development	Materials will be provided	Part 1 portfolio: Due this Friday

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Term Break		

Week 6 - 21 Aug 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Smart Contracts	Materials will be provided	

Week 7 - 28 Aug 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Blockchain Applications	Materials will be provided	Assessment 2: Due this Friday **Group Presentation** Due: Week 7 Friday (1 Sept 2023) 10:59 pm AEST

Week 8 - 04 Sep 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Blockchain and Cloud Computing	Materials will be provided	

Week 9 - 11 Sep 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Blockchain and Other Emerging Technologies - I	Materials will be provided	

Week 10 - 18 Sep 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Blockchain and Other Emerging Technologies - II	Materials will be provided	Part 2 portfolio: Due this Friday

Week 11 - 25 Sep 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Blockchain Best Practices	Materials will be provided	Assessment 3: Due this Friday **Solution Development** Due: Week 11 Friday (29 Sept 2023) 11:59 pm AEST

Week 12 - 02 Oct 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Revision		Complete the unit evaluation survey

Review/Exam Week - 09 Oct 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Exam Week - 16 Oct 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
There is no final exam in this unit.		

Term Specific Information

Unit Coordinator:
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Assessment Tasks

1 ePortfolios

Assessment Type
Written Assessment

Task Description

This is an individual assessment that has two submission parts.

The purpose of this assessment task is for you to develop a portfolio reflecting your understanding of the subject materials. As part of this assessment, you are required to maintain an online reflective portfolio for the topics discussed in the lecture and tutorials. Specific instructions on these topics are available on the Moodle site for this unit. You need to read the relevant material(s) or readings and complete your portfolio entry following the instructions provided on the Moodle unit website. Answers can be maintained in an online journal/workbook e.g. a simple A4 - word document that you submit online or using an online Portfolio tool. CQUniversity provides students with access to https://portfolium.com/ if you wish to use that (access via Moodle's unit Website).

This assessment has 2 submission parts:

Part 1- Week 5: Due on Friday midnight of Week 5

Part 2- Week 10: Due on Friday midnight of Week 10

Please refer to the unit's Moodle site for a detailed description of the task.

All marked portfolios will contribute equally to the final 25% mark. Standard University assessment guidelines and policies apply i.e. (late penalty, assessment extension, and plagiarism).

You can complete your portfolios before the due dates but feedback will not be released until 2 weeks after the due date of each portfolio. Marks and feedback on your work will be returned to you via the Moodle unit website. No comment on your work will be posted on your portfolio for viewing by the general public.

Assessment Due Date

Return Date to Students

Within two weeks from the date of submission

Weighting
25%

Assessment Criteria

The marking criteria are based on:

· Relevance, Knowledge & understanding of the topic as depicted by collection in the view

· Communication, Technical literacy skills, and information literacy as demonstrated by the discussion

· Presentation and quality of References/citations included

Please refer to the unit's Moodle site for a detailed description of the task.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Both parts are to be submitted online via the Moodle unit website

assessmentOutcome

- Explain the fundamentals of blockchain technologies

- Examine the application of blockchain technologies in various industries
- Design an enterprise blockchain application
- Report relevant critical success factors and best practices in blockchain technologies adoption.

assessmentGradAttribute

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

2 Group Presentation

Assessment Type
Presentation

Task Description

This is a group-based assessment worth 25% of the total available marks for this unit. This assessment aims to improve your industry-based practical research and presentation skills. It also aims to develop your team working skills and your knowledge about the recent developments in the Blockchain area and its applications in the real world. In this assessment task, as future ICT professionals, you are required to research recent developments in the Blockchain area and prepare a presentation as a group of up to four members.

As students are given the opportunity to select their group members, separate groups are not created for this assessment task. Hence, all group members are required to submit the same assessment through the Moodle submission link. Please refer to the unit's Moodle site for a detailed description of the task.

Please refer to the unit's Moodle site for a detailed description of the task.

Assessment Due Date
Week 7 Friday (1 Sept 2023) 10:59 pm AEST

All group members are required to submit the same assignment file(s) through the Moodle submission link.

Return Date to Students
Week 9 Friday (15 Sept 2023)

Within two weeks from the date of submission

Weighting
25%

Assessment Criteria

The assessment criteria include aspects such as:

1. Insightful analysis of blockchain technologies in the context of the chosen industry.
2. Your presentation has a strong and engaging introduction, and relevant content; the body of the presentation flows from the thesis; your conclusion effectively wraps up the work; structure includes a title slide, conclusion or summary slide, and a reference list.
3. Meticulous presentation framing e.g., ideas in point form; not in sentence form; slide numbers; footers; fast and efficient transitions; few words per slide; large font sizes; only relevant animation and images; consistent colour, fonts and layouts; the contrast between text and background.
4. Mechanics, e.g., Stage presence, spelling, grammar, and referencing.

Please refer to the unit's Moodle site for a detailed description of the task.

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
Include the names of your group members when you submit your assessment. All group members are required to submit the same presentation and handout files. All group members will receive the same mark.

assessmentOutcome

- Explain the fundamentals of blockchain technologies
- Examine the application of blockchain technologies in various industries
- Prepare a business case for blockchain technologies adoption
- Design an enterprise blockchain application
- Implement an enterprise blockchain application

assessmentGradAttribute

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

3 Solution Development

Assessment Type
Group Work

Task Description

This assessment is worth 50% of the total available marks for this unit. The aim of this assessment item is for you to prepare a report relating to the strategies/approaches required to ensure a smooth implementation of a blockchain technology solution for a chosen industry. More information relating to the description of the task and the requirements will be made available on the unit website. If you have any queries regarding this assessment, you should consult your local lecturer/tutor.

Submission: Online - Group submission (maximum of four students in each group).

Students who are interested in developing a Blockchain application for the chosen industry will be given the opportunity. Please refer to the unit's Moodle site for a detailed description of the task.

Assessment Due Date
Week 11 Friday (29 Sept 2023) 11:59 pm AEST

Include the names of your group members when you submit your assessment. All group members are required to submit the same presentation and handout files. All group members will receive the same mark.

Return Date to Students

On Grades Certification date

Weighting
50%

Assessment Criteria

Your assessment solution will be assessed mainly on your ability to:

- Analyse the challenges faced by the chosen industry
- Present benefits and limitations of blockchain technologies in the context of the chosen industry
- Argue for blockchain technology, e.g., convincing, well-structured argument with due consideration of the industry environment
- Design and develop a plan to adopt blockchain technology
- Organise your document, e.g., a well-structured document

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
Include the names of your group members when you submit your assessment. All group members will receive the same mark.

assessmentOutcome

- Prepare a business case for blockchain technologies adoption
- Implement an enterprise blockchain application
- Report relevant critical success factors and best practices in blockchain technologies adoption.

assessmentGradAttribute

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