

## Unit Outline

# COMP3003 Software Engineering Concepts Semester 2, 2021

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<b>Unit study package code:</b>	COMP3003										
<b>Mode of study:</b>	Internal										
<b>Tuition pattern summary:</b>	<p>Note: For any specific variations to this tuition pattern and for precise information refer to the Learning Activities section.</p> <p>Lecture: 1 x 2 Hours Weekly Practical: 1 x 1 Hours Weekly</p> <p>This unit does not have a fieldwork component.</p>										
<b>Credit Value:</b>	25.0										
<b>Pre-requisite units:</b>	<p>8934 (v.0) Software Engineering 200 or any previous version OR COMP2003 (v.0) Object Oriented Software Engineering or any previous version</p>										
<b>Co-requisite units:</b>	Nil										
<b>Anti-requisite units:</b>	Nil										
<b>Result type:</b>	Grade/Mark										
<b>Approved incidental fees:</b>	Information about approved incidental fees can be obtained from our website. Visit <a href="https://fees.curtin.edu.au/incidental_fees.cfm">fees.curtin.edu.au/incidental_fees.cfm</a> for details.										
<b>Unit coordinator:</b>	<table><tr><td><b>Title:</b></td><td>Dr</td></tr><tr><td><b>Name:</b></td><td>David Cooper</td></tr><tr><td><b>Phone:</b></td><td>08 9266 5212</td></tr><tr><td><b>Email:</b></td><td>David.Cooper@curtin.edu.au</td></tr><tr><td><b>Location:</b></td><td>Building: 314 - Room: 325</td></tr></table>	<b>Title:</b>	Dr	<b>Name:</b>	David Cooper	<b>Phone:</b>	08 9266 5212	<b>Email:</b>	David.Cooper@curtin.edu.au	<b>Location:</b>	Building: 314 - Room: 325
<b>Title:</b>	Dr										
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<b>Teaching Staff:</b>	<table><tr><td><b>Name:</b></td><td>David Cooper</td></tr><tr><td><b>Phone:</b></td><td>08 9266 5212</td></tr><tr><td><b>Email:</b></td><td>David.Cooper@curtin.edu.au</td></tr><tr><td><b>Location:</b></td><td>Building: 314 - Room: 325</td></tr></table>	<b>Name:</b>	David Cooper	<b>Phone:</b>	08 9266 5212	<b>Email:</b>	David.Cooper@curtin.edu.au	<b>Location:</b>	Building: 314 - Room: 325		
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<b>Administrative contact:</b>	<table><tr><td><b>Name:</b></td><td>Michelle Cutinha</td></tr><tr><td><b>Phone:</b></td><td>08 9266 7428</td></tr><tr><td><b>Email:</b></td><td>M.Cutinha@curtin.edu.au</td></tr><tr><td><b>Location:</b></td><td>Building: 314 - Room: 340</td></tr></table>	<b>Name:</b>	Michelle Cutinha	<b>Phone:</b>	08 9266 7428	<b>Email:</b>	M.Cutinha@curtin.edu.au	<b>Location:</b>	Building: 314 - Room: 340		
<b>Name:</b>	Michelle Cutinha										
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<b>Learning Management System:</b>	<a href="https://lms.curtin.edu.au">Blackboard</a> (lms.curtin.edu.au)										

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## Acknowledgement of Country

We respectfully acknowledge the Indigenous Elders, custodians, their descendants and kin of this land past and present. The [Centre for Aboriginal Studies](#) aspires to contribute to positive social change for Indigenous Australians through higher education and research.

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## Syllabus

This unit covers advanced software architectural and design concepts, including the development of multithreaded design structures, build engineering, the integration of multiple languages into a single application, and the design and implementation of domain specific languages. Emphasis is given both to the practical implementation of these concepts and to the rationales for their use in specific situations.








## Introduction

Welcome to Software Engineering Concepts (SEC).







## Unit Learning Outcomes

All graduates of Curtin University achieve a set of six Graduate Capabilities during their course of study. These inform an employer that, through your studies, you have acquired discipline knowledge and a range of other skills and capabilities which employers would value in a professional setting. Each unit in your course addresses the Graduate Capabilities through a clearly identified set of learning outcomes. They form a vital part in the process referred to as assurance of learning. The learning outcomes notify you of what you are expected to know, understand or be able to do in order to be successful in this unit. Each assessment for this unit is carefully designed to test your knowledge of one or more of the unit learning outcomes. On successfully completing all of the assessments you will have achieved all of these learning outcomes.

Your course has been designed so that on graduating you will have achieved all of Curtin's Graduate Capabilities through the assurance of learning processes in each unit.

On successful completion of this unit students can:		Graduate Capabilities addressed
1	Develop and analyse different software architectures	 
2	Develop multithreaded software designs for solving specific software engineering problems	 
3	Design and implement build logic for large-scale software systems	 
4	Develop and evaluate software designs incorporating multiple languages, including the design and implementation of domain-specific languages	

## Curtin's Graduate Capabilities

	Apply discipline knowledge, principles and concepts		Innovative, creative and entrepreneurial		Effective communicators with digital competency
	Globally engaged and responsive		Culturally competent to engage respectfully with local First Peoples and other diverse cultures		Industry connected and career capable

Find out more about Curtin's Graduate Capabilities at the Curtin Learning and Teaching website: [clt.curtin.edu.au](http://clt.curtin.edu.au)

## Learning Activities

This unit includes lectures and/or lecture recordings, online notes, practical worksheets, practical sessions where students can discuss the material and worksheet questions with teaching staff, and an online discussion forum.

## Learning Resources

### Library Reading List

The Reading List for this unit can be accessed through Blackboard.

## Assessment

### Assessment policy exemptions

- There are no exemptions to the assessment policy

### Assessment schedule

	Task	Value %	Date Due	Unit Learning Outcome(s) Assessed	Late Assessments Accepted?*	Assessment Extensions Considered?*
1	Practical Work	20%	<b>Week:</b> Various <b>Day:</b> TBA <b>Time:</b> TBA	1,2,3,4	Yes	Yes
2	Software Design Assignment 1	40%	<b>Week:</b> 8 <b>Day:</b> Thursday 16 September <b>Time:</b> 23:59	1,2	Yes	Yes
3	Software Design Assignment 2	40%	<b>Week:</b> Study week <b>Day:</b> Monday 25 October <b>Time:</b> 23:59	3,4	Yes	Yes

\*Please refer to the Late Assessment and the Assessment Extension sections below for specific details and conditions.

### Detailed information on assessment tasks

1. You must submit your answers to the practical worksheets, via Blackboard. Details of the deadlines, and the scope of the submission requirements, will be announced via Blackboard/email. You may be advised that, for a given worksheet, you only need to submit a subset of the work. However, unless so advised, you should submit answers for the whole worksheet.

You will receive a mark for each worksheet, and these marks will add up to your overall practical work mark.

Note: The unit coordinator may require you to provide an oral justification of, or to answer questions about, any piece of written work submitted in this unit. Your response(s) may be referred to as evidence in an Academic Misconduct inquiry. In addition, your assignment submission may be analysed by Turnitin and/or other systems to detect plagiarism and/or collusion.

2. The first assignment will involve the design and implementation of a multithreaded software application, and the use and investigation of software architecture concepts generally.
3. The second assignment will involve the design and implementation of APIs and/or plugin systems in a software application, and the sophisticated use of build logic.

### Pass requirements

To pass the unit, you must achieve a Final Mark of 50% or greater, AND an Assignment 2 mark of 40% or greater.

## Assessment Moderation

### Fair assessment through moderation

Moderation describes a quality assurance process to ensure that assessments are appropriate to the learning outcomes, and that students work is evaluated consistently by assessors. Minimum standards for the moderation of assessments are described in the Assessment and Student Progression Manual, available from [policies.curtin.edu.au/findapolicy/](https://policies.curtin.edu.au/findapolicy/)

### Pre-marking moderation

Pre-marking moderation will be conducted in accordance with University policy.

### Intra-marking / Post-marking moderation

Intra-marking / post-marking moderation will be conducted in accordance with University policy.

### Late assessment

Where the submission of a late assessment is permitted, late penalties will be consistently applied in this unit.

Where a late assessment **is** permitted for an assessment item or the entirety of the unit (refer to the Assessment Schedule table in this Unit Outline) and the student does not have an approved assessment extension:

1. For assessment items submitted within the first 24 hours after the due date/time, students will be penalised by a deduction of 5% of the total marks allocated for the assessment task;
2. For each additional 24 hour period commenced an additional penalty of 10% of the total marks allocated for the assessment item will be deducted; and
3. Assessment items submitted more than 168 hours late (7 calendar days) will receive a mark of zero.

Where late assessment **is NOT** permitted for an assessment item or the entirety of the unit (refer to the Assessment Schedule table in this Unit Outline) and the student does not have an approved assessment extension:

1. All assessment items submitted after the due date/time will receive a mark of zero.

### **Assessment extension**

Where an application for an assessment extension **is** permitted for an assessment item(s) within this unit (refer to the Assessment Schedule table in this Unit Outline):

1. A student who is unable to complete an assessment item by/on the due date/time as a result of exceptional circumstances beyond the student's control, may apply for an assessment extension on the Assessment Extension Application Form as prescribed by the Academic Registrar. The form is available on the Forms page at <https://students.curtin.edu.au/essentials/forms-documents/forms/> and also within the student's OASIS (My Studies tab – Quick Forms) account.
2. The student will be expected to submit their application for an Assessment Extension with supporting documentation:
  - a. Australian Campuses: via the online form
  - b. Offshore campuses: to the School representative nominated below
3. Timely submission of this information supports the assessment process. For applications that are declined, delayed submission may have significant ramifications on the possible marks awarded.
4. An application may be accepted up to five working days after the due date/time of the assessment item where the student is able to provide a verifiable explanation as to why they were not able to submit the application prior to the assessment due date/time

Where an application for an assessment extension **is NOT** permitted for an assessment item(s) within this unit (refer to the Assessment Schedule table in this Unit Outline):

1. All assessment items submitted after the due date/time will be subject to late penalties or receive a mark of zero depending on the unit permitting late assessment submissions.

### **Deferred assessments**

If your results show that you have been granted a deferred assessment you should immediately check OASIS for details.

### **Further assessment**

Further assessments, if granted by the Board of Examiners, will be held between 06/12/2021 and 17/12/2021 . Notification to students will be made after the Board of Examiners meeting via the Official Communications Channel in OASIS.

It is the responsibility of the student to be available to complete the requirements of a further assessment. If your results show that you have been granted a further assessment you should immediately check OASIS for details.

### **Reasonable adjustments for students with disabilities/health circumstances likely to impact on studies**

A [Curtin Access Plan](#) (CAP) is a document that outlines the type and level of support required by a student with a disability or health condition to have equitable access to their studies at Curtin. Carers for people with disability may also be eligible for support. This support can include alternative exam or test arrangements, study materials in accessible formats, access to Curtin's facilities and services or other support as discussed with an advisor from [AccessAbility Services](#).

Documentation is required from your treating Health Professional to confirm your health circumstances or carer responsibilities.

If you think you may be eligible for a CAP, please contact AccessAbility Services. If you already have a CAP please provide it to the Unit Coordinator in week 1 of each study period.

## Referencing style

The referencing style for this unit is Chicago 17th B.

More information can be found on this style from the Library web site:

<https://libguides.library.curtin.edu.au/uniskills/referencing/chicago17>.

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## Privacy

As part of a learning or assessment activity, or class participation, your image or voice may be recorded or transmitted by equipment and systems operated by Curtin University. Transmission may be to other venues on campus or to others both in Australia and overseas.

Your image or voice may also be recorded by students on personal equipment for individual or group study or assessment purposes. Such recordings may not be reproduced or uploaded to a publicly accessible web environment. If you wish to make such recordings for study purposes as a courtesy you should always seek the permission of those who are impacted by the recording.

Recording of classes or course materials may not be exchanged or distributed for commercial purposes, for compensation, or for any other purpose other than personal study for the enrolled students in the unit. Breach of this may subject a student to disciplinary action under Statute No 10 – Student Disciplinary Statute.

If you wish to discuss this please talk to your Unit Coordinator.

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## Copyright

The course material for this unit is provided to you for your own research and study only. It is subject to copyright. It is a copyright infringement to make this material available on third party websites.

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## Academic Integrity (including plagiarism and cheating)

### Academic Integrity

Curtin's [Student Charter](#), [Academic Integrity Program \(AIP\)](#), and core [Values](#) guide expectations regarding student behaviour and responsibilities. Information on these topics can be found on the [Student Essentials Website](#) or the Academic Integrity tab in Blackboard.

### Academic Integrity Warnings

An Academic Integrity Warning may be issued to a New-to-Curtin student if they have inadequately acknowledged sources or collaborated inappropriately. [The Management of Academic Integrity Warnings for New to Curtin Students Procedures](#) provide further information and explain who is considered to be New-to-Curtin.

### Academic Misconduct

Students with an academic breach that do not meet the New-to-Curtin criteria will be managed through the misconduct process. [Academic Misconduct](#) means conduct by a student that is dishonest or unfair in connection with any academic work. This includes all types of plagiarism, cheating, collusion, falsification or fabrication of data or other content, and Academic Misconduct Other, such as falsifying medical certificates for extension. More details can be found on the [Student Essentials Website](#) or on the [Academic Integrity Website](#).

Staff members are required to report suspected misconduct and an inquiry may take place. If misconduct is determined it will result in penalties, which may include a warning, a reduced or nil grade, a requirement to repeat the assessment, an annulled grade (ANN) or termination from the course. Some penalties may impact on future enrolment.

Academic work under inquiry will not be graded until the process has concluded. If your work is the subject of an inquiry you will be notified by email and Official Communication with an opportunity to respond. Appropriate support will be provided. For more information refer to [Statute No.10 Student Discipline and Academic Misconduct Rules](#).

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## Information and Communications Technology (ICT) Expectations

Curtin students are expected to have reliable internet access in order to connect to OASIS email and learning systems such as Blackboard and Library Services.

You may also require a computer or mobile device for preparing and submitting your work.

For general ICT assistance, in the first instance please contact OASIS Student Support:

[oasisapps.curtin.edu.au/help/general/support.cfm](https://oasisapps.curtin.edu.au/help/general/support.cfm)

For specific assistance with any of the items listed below, please contact The Learning Centre:

[life.curtin.edu.au/learning-support/learning\\_centre.htm](https://life.curtin.edu.au/learning-support/learning_centre.htm)

- Using Blackboard, the I Drive and Back-Up files
- Introduction to PowerPoint, Word and Excel

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## Additional information

### Enrolment

It is your responsibility to ensure that your enrolment is correct - you can check your enrolment through the eStudent option on OASIS, where you can also print an Enrolment Advice.

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## Student Rights and Responsibilities

It is the responsibility of every student to be aware of all relevant legislation, policies and procedures relating to their rights and responsibilities as a student. These include:

- the Student Charter
- Values and Signature Behaviours
- the University's policy and statements on plagiarism and academic integrity
- copyright principles and responsibilities
- the University's policies on appropriate use of software and computer facilities

Information on all of the above is available through the University's "Student Rights and Responsibilities" website at: [students.curtin.edu.au/rights](https://students.curtin.edu.au/rights).

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## Student Equity

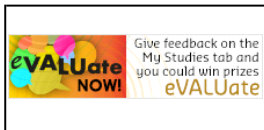
There are a number of factors that might disadvantage some students from participating in their studies or assessments to the best of their ability, under standard conditions. These factors may include a disability or medical condition (e.g. mental illness, chronic illness, physical or sensory disability, learning disability), significant caring responsibilities, pregnancy, religious practices, living in a remote location, or another reason. If you believe you may be unfairly disadvantaged on these or other grounds please contact the appropriate service below. It is important to note that the staff of the University may not be able to meet your needs if they are not informed of your individual circumstances, so please get in touch with the appropriate service if you require assistance.

To discuss your needs in relation to:

- Disability or medical conditions, contact AccessAbility Services: <https://students.curtin.edu.au/personal-support/disability/>
- Elite athletes, contact Elite Athlete Coordinator: <https://stadium.curtin.edu.au/sport/academy/elite-athlete-program/>
- All other grounds, contact the Student Wellbeing Advisory Service: <https://students.curtin.edu.au/personal-support/counselling-guidance/wellbeing/>

## Recent unit changes

Students are encouraged to provide unit feedback through **eVALUate**, Curtin's online student feedback system. For more information about **eVALUate**, please refer to [evaluate.curtin.edu.au/info/](https://evaluate.curtin.edu.au/info/).

	To view previous student feedback about this unit, search for the Unit Summary Report at <a href="https://evaluate.curtin.edu.au/student/unit_search.cfm">https://evaluate.curtin.edu.au/student/unit_search.cfm</a> . See <a href="https://evaluate.curtin.edu.au/info/dates.cfm">https://evaluate.curtin.edu.au/info/dates.cfm</a> to find out when you can <b>eVALUate</b> this unit.
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Recent changes to this unit include:

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### Program calendar

Calendar Week	Teaching Week	Begin Date	Lecture	Practical	Assessment*
1	1	26 Jul	1. Architecture		
2	2	2 Aug	2. OO Multithreading	1. Architecture	
3	3	9 Aug	3. Multithreading Design Structures	2. OO Multithreading	
4	4	16 Aug	4. Build Engineering	3. Multithreading Design Structures	
5	5	23 Aug	Catch-Up	4. Build Engineering	
6	6	30 Aug	5. Language Integration	Catch-Up	
7	—	6 Sep	Tuition Free Week		
8	7	13 Sep	6. APIs, Plugins and Scripting	5. Language Integration	<b>Assignment 1 Due</b>
9	8	20 Sep	7. Domain Specific Languages	6. APIs, Plugins and Scripting	
10	9	27 Sep	8. Internationalisation	7. Domain Specific Languages	
11	10	4 Oct	Catch-Up	8. Internationalisation	
12	11	11 Oct	Catch-Up	Catch-Up	
13	12	18 Oct	Catch-Up	Catch-Up	
15	—	25 Oct	Study Week		
16	—	1 Nov	Examinations		
17	—	8 Nov	Examinations		

\* Note: practical work submission dates will be announced via Blackboard/email.