

## Hai Whakataki | Course Outline

### COMP642 Advanced Programming

### Semester 2, 2024

Haere ki Akoraka mō ētahi whakamahuki kia whai tautoko  
For information on Lincoln University support and services, please refer to the links on  
**My Akoraka | Learn.**

<b>Examiner / Lecturer</b>	<b>Patricia Anthony</b> <b>Building/Office Number:</b> SOLA 032 <b>Email:</b> <a href="mailto:patricia.anthony@lincoln.ac.nz">patricia.anthony@lincoln.ac.nz</a> <b>Contact:</b> The best way to contact me is via email or MS Teams. My usual response time is less than 24 hours during the working week. Book an appointment or come along to the support sessions shown below. You can meet me online (see the Akoraka   Learn course page for the link) or in person in my office.		
<b>Lecturer/s</b>	<b>Thilini Bhagya</b> <b>Building/Office Number:</b> SOLA 033 <b>Email:</b> <a href="mailto:thilini.bagya@lincoln.ac.nz">thilini.bagya@lincoln.ac.nz</a> <b>Contact:</b> The best way to contact me is via email or MS Teams. My usual response time is less than 24 hours during the working week. Book an appointment or come along to the support sessions shown below. You can meet me online (see the Akoraka   Learn course page for the link) or in person in my office.		
<b>Tutor/s</b>	Craig Melton ( <a href="mailto:computing@lincoln.ac.nz">computing@lincoln.ac.nz</a> )		
Activity	Day	Time	Room
Lectorial	Tuesday	1:00pm – 2:30pm	Studio 300
In Person Support	Monday	1:00pm – 2:30pm	Studio 100
Online Support	Monday, Thursday	4:30pm – 6:00pm	MS Teams

<b>Course Prescription</b>	Advanced programming focusing on object-oriented approach
<b>Prerequisites</b>	COMP636
<b>Recommended Preparation</b>	None
<b>Restrictions</b>	None

## Kia whai hua | Course Aims and Learning Outcomes

### Aims

The main aim of this course is:

Enhances programming skills using object-oriented approach through the creation of classes, instantiation of objects, operator overloading, message passing and abstraction.

### Learning outcomes

After successfully completing this course, you will be able to:

- LO1.** Develop object-oriented solutions for real world problems.
- LO2.** Apply object-oriented design in the construction of software.
- LO3.** Develop appropriate software testing strategies.
- LO4.** Refactor and refine code for object-oriented programs.

## Te whakahoki kōrero | Course Improvements

The following table outlines the summarised feedback received from previous students (via course evaluations, student rep feedback and other feedback opportunities) and other sources, and how this feedback has been incorporated into the course.

Summary Feedback		Course Changes
<i>Students:</i>	Need more examples.  Show examples on how OOP works with Flask web app.	More examples will be introduced during lectorials.  SQLAlchemy is added to the course content.
<i>Other:</i>		

## Whakatakotoraka | Course Content

The following table gives an indication of the timing of the content for this course. It may be necessary to make adjustments to the timetable.

Week – commencing	Modules / Topics
<b>1</b> 15 July	Introduction to OOP Classes and Objects Keeping Objects
<b>2</b> 22 July	Looping List References
<b>3</b> 29 July	Overloading Private Properties
<b>4</b> 5 August	Procedural vs OOP Model View Controller
<b>5</b> 12 August	Tkinter Putting it Together
<b>6</b> 19 August	Inheritance Polymorphism
<b>26 August</b> <b>2 September</b>	<b>Mid Semester Break</b>
<b>7</b> 9 September	Abstract Classes Implementing Interface
<b>8</b> 16 September	SQLAlchemy
<b>9</b> 23 September	Exception Defining Own Exceptions
<b>10</b> 30 September	Testing and Debugging Unit Testing Integration Testing
<b>11</b> 7 October	Code Refactoring Techniques
<b>12</b> 14 October	Work on Projects

## Whakariteka | Learning and Teaching Arrangements

### Te Whakatinanataka o te Ako | Learning and Teaching Approach

The learning and teaching approach is based on a combination of live learning sessions, online content, activities and on-line resources from the Akoraka | Learn course page with face-to-face and online tutorial and support options. Students are strongly advised to make full use of all available learning opportunities.

### Akoraka ā ipuraki | Online Learning Activities

Self-study material, review material, other relevant course material, and assessment activities will be made available on the course Akoraka | Learn page.

If you are attending online lectures and support sessions, you are expected to be able to use MS Teams and Lincoln's Akoraka | Learn system, and have the [basic skills and technology requirements](#) needed to study through the online medium.

All lectures will be recorded and these recordings will be available on the Akoraka | Learn course page. The quality of recordings cannot be guaranteed.

### Kōrerorero | Communication

Akoraka | Learn will be used as a means of communication with the class and you are advised to check the course page, the My Akoraka | Learn dashboard, and your "@lincolnuni.ac.nz" email regularly to ensure you receive all University communications. You should also use your "@lincolnuni.ac.nz" email address to communicate with examiners and lecturers.

### Kā kupu āwhina | Lecture Notes

Lecture notes will be posted on Akoraka | Learn. It is important to note that the images shown in lectures may not all be available in the pdf version of the notes, as copyright regulations may prevent this. All readings will be placed on the Akoraka | Learn course page.

### Poipoia te Ako | Learning Advice

A wide range of learning advice options are available for you to access on- and off-campus. The Learning Advisors in Learning, Teaching and Library (LTL) provide drop-ins, individual appointments, workshops, and resources to support you to further develop your academic writing, referencing, study, and mathematics and statistics skills. For more information and to book appointments and workshops, access the LTL website, Te Kete Wānaka, from the Akoraka | Learn dashboard.

## Kā aromatawai | Assessments

The schedule of assessments and their contribution to the overall mark for the course is as follows:

Assessment	Weighting	Due date	Learning outcomes covered
Object Oriented Programming Assignment 1	15	9 August 2024 @5:00pm	1, 3
Object Oriented Programming Assignment 2	25	13 Sept 2024 @5:00pm	1, 2, 3
Software Design	20	27 Sept 2024 @5:00pm	2
Software Project	40	1 Nov 2024 @5:00pm	1, 3, 4

## Kā whakamahuki aromatawai | Assessment Details

**Note:** All electronically-submitted assessments will be either completed or uploaded via the Akoraka | Learn course page. As per the Assessment Policy, marked assessments, except for final exams, will normally be returned to you, with feedback, within three weeks of submission. You can view your internal assessment results via Grades on the Akoraka | Learn course page (also referred to as Gradebook and used on all Akoraka | Learn course pages).

All assessment is to be submitted via the Akoraka | Learn course page by the dates and times shown in the table above. All assessment is to be completed individually. Instructions will be made available on the Akoraka | Learn course page.

### Object-oriented Programming Assignments

You will be asked to design and implement applications in Python using object-oriented approach based on a specific problem.

### Software Project

You will be asked to develop a software solution based on a client's problem using object-oriented programming approach. The project will include interpreting project requirements, object-oriented analysis and design and implementing a solution using object-oriented programming approach. The project is divided into two parts: 1) Object-Oriented Design and Modelling (Software Design) and 2) Implementing the Object-Oriented Design using Object-Oriented Programming (Software Project).

## Kā whakapāha | Aegrotats

Aegrotat applications may be made when due to a *serious event*: (1) a student has missed an assessment; (2) a student has completed an assessment but believe they have been impaired by one of the above circumstances; or (3) a student is seeking an extension to the due date for an assessment, based on one of the above circumstances. *Serious events* means illness (including COVID-19) or injury; bereavement, trauma, critical circumstances, disasters; and misadventure. To apply for an Aegrotat, your assessment needs to be worth 10% or more of your final course grade. Apply through the online portal on Akoraka | Learn which can be accessed from the link within the Exams & Assessments section on the right of your Akoraka | Learn dashboard. If your Aegrotat application is deemed justified (i.e., approved) by the Examinations Office, the Examiner will decide what the outcome will be - this may include approving an extension, offering an alternative assessment or deriving a grade.

For more information on Aegrotats refer to the online portal. For assessments worth less than 10%, you should normally approach the Examiner or their nominee (such as a lecturer or tutor) directly, in person or in writing.

## Kā hapa tautuku | Academic Penalties

### Te whakaroaka i te tuku | Extensions and Late Submission of Assessment

For items of assessment worth less than 10%, you should approach the Examiner or their nominee (such as a lecturer or tutor) directly, in person or in writing. For items of assessment worth 10% or more of your final course grade, if there is a serious event that contributes to you seeking an extension or submitting a piece of assessment late, you should normally approach the Examiner (for extensions of 3 days or fewer) or apply for an Aegrotat (for extensions of more than three days). Also refer to the section on Aegrotats above. The Examiner will decide the outcome of your request - this may include approving an extension or removing any late penalties. If denied, items of assessment (other than tests) that are submitted after the due date and time will have a maximum late penalty applied as noted below. University regulations apply where a final examination is scheduled.

Items of assessment that are submitted after the due date and time will attract an immediate penalty of up to 25% of the marks available. Those received more than 48 hours after the due date and time will be awarded a mark of zero.

## Te Tū Whakahīhi | Academic Integrity and Behaviour

All forms of academic dishonesty are unacceptable to Lincoln University. This includes, but is not limited to cheating, collusion, double-dipping, fabrication of data, ghost writing, plagiarism, unauthorised use of Artificial Intelligence (AI) to generate content, and possession of unauthorised notes, cell phones or other devices during a test or examination, or access to unauthorised software during a test or examination. Incidents of academic dishonesty may be deemed to be a breach of discipline and may be reported to the Proctor. You will be subject to the terms of the Student Discipline Regulations.

Upon enrolment, you undertake to comply with Lincoln University regulations and policies. Please make yourself familiar with these - including the Lincoln University Student Code of Conduct and the Academic Integrity Policy and Procedure - which can be found on the right-hand side of your Akoraka | Learn page under University Policies and Procedures.

## Kā mahi o te tauira | Student Workload

At a minimum, 200 hours for 20-credit courses represents the amount of time that an average or B grade student might be expected to spend to receive a passing grade. The total student workload for a course is not spread evenly from week to week and you are expected to proactively manage their workload throughout the semester. Achievement in a course is based on your performance, not on the time committed to studying the course. No matter how many hours you put into this course, you are not guaranteed a pass. The following time-use guidelines are provided as an example of how the 200 hours may be allocated in this course.

### Indicative Student Workload

<b>Contact Hours (including recorded/online classes)</b>	<b>Total hours (over semester)</b>
Lectures	18
Workshops	
Tutorials	36
Laboratory sessions	
Field Trips	
Field Tours	
Test	
Student Presentations	
Final Exam	
<b>Non-contact Hours</b>	
Reading and Class Preparation	13
Online Activities	60
Assignment	75
Project	
Presentation	
Test Preparation	
Final Exam Preparation	
<b>Work Experience Hours</b>	
<b>Total Student Workload</b>	<b>200</b>

## Te whakahoki kōrero | Feedback Opportunities

There will be an opportunity to formally evaluate the course at the end of the semester, however feedback is welcomed and appreciated throughout the semester and may be provided in any format, e.g. in person, with a support person, through a student rep, via a note, or email. Constructive feedback is welcomed and appreciated throughout the semester to allow the Examiner to improve the course and their lecturing style.