Course Outline
COMP636 Software Development
Full Summer School, Nov 2022 to Feb 2023

For information on Student Support and Wellbeing, exams and assessment, academic integrity, policies and procedures, Codes of Conduct, Covid-19 alert levels and Safe LU, please refer to the appropriate links on your My Akoraka | Learn dashboard page.

Examiner	**Stuart Charters** **Building/Office Number**: SoLA 129 **Email:** stuart.charters@lincoln.ac.nz **Office hours: By Appointment**
Tutor	**Sharon Long** **Craig Melton** computing@lincoln.ac.nz

Activity	Day	Time	Room
Lectorial	Tuesday	9:30-11:30am	Studio 200
In Person support	Monday	9:30-11:00 am	Studio 200
	Thursday	9:30-11:00 am	Studio 200
On-line Support	Monday	4:30-6:00 pm	Zoom
	Thursday	4:30-6:00 pm	Zoom

Course prescription	A practical approach to software development focusing on industry standard skills and practices.
Prerequisites	None
Recommended Preparation	None
Restrictions	None

Course Aims and Learning Outcomes

Aims

The course builds software development skills including programming, database design including development practices such as version control, and testing. It also introduces software engineering methodologies such as Waterfall and Agile.

Learning outcomes

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

LO1. Construct procedural and object-oriented programs

LO2. Design implementable database schemas.

LO3. Apply appropriate industry standard software engineering methodologies

LO4. Validate programs, including testing and debugging, using a range of software engineering methods and tools.

LO5. Critically discuss the ethical issues in software development

Course Content

The following table outlines the topics covered in this course. A live learning activity each week (also live streamed & recorded) supports material provided on the course Learn page to be studied at your own pace to achieve the understanding required for the assessment activities. The Akoraka | Learn page is structured to guide you through the learning material.

Module	Description
Python I	This module covers getting started with Python and the tools required for developing software. It introduces key concepts in programming and provides exercises and activities to develop understanding
Python II	This module extends programming concepts in Python and looks at more advanced concepts. It focuses on good programming practices and debugging of code.
Databases	This module introduces databases, interpreting database schemas and the Structured Query Language. It looks at writing queries to extract data from existing databases.
Integrating Databases and Python programs	This module extends the use of SQL from the previous module and integrates the use of databases into Python programs. It looks at handling more complex data types like dates and times.
HTML & CSS	This module provides an introduction to web technologies, especially the HTML and CSS languages so that web pages can be developed and formatting applied.
Jinja	This module looks at the use of Jinja to structure dynamic web pages and make decisions based on data passed in.
Web Apps	This module looks at bringing together much of the previous modules to start building full stack web apps using the Flask framework

Complex Web Apps	Extending the previous module to develop more complex web apps that connect to a database and provide features such as user login
Web App Hosting & Debugging	Continuing the Web App develop topic this module looks at the online hosting of web apps and strategies and techniques for debugging and resolving issues and errors. This module also explores data modelling to change database schemas.
Ethical Considerations	This module looks at the ethical framework of an IT Professional and application of that in a professional career.

Learning and Teaching Arrangements

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.

Online Learning Activities

Relevant course material and assessment activities will be made available on the course Akoraka | Learn page. Akoraka | Learn will also be used as a means of communication with the class and students are advised to check their course page, the My Akoraka | Learn dashboard, and their "@lincolnuni.ac.nz" email regularly.

Material and activities available will include, but not be limited to, recorded content including lectures and demonstrations, assessment resources and feedback, and practice assignments. When we need to contact you individually, we will do this by emailing to your Lincoln email address. If you don't primarily use your Lincoln email, then ensure that it is auto-forwarded to your personal email account and that you check it regularly for ongoing updates.

Assessment

Note: all assessments will be either completed or submitted electronically.

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

Assessment	Weighting	Due date	Learning outcomes covered
Python and database Project	30%	5pm, Monday 12th December 2022	1 & 2
Jinja & CSS Project	15%	5pm, Wednesday 18th January 2023	3
Ethics	10%	5pm, Monday 30th January 2023	5
Web App Project	45%	5pm, Friday 10th February 2023	1,2,3 & 4

Assessment details

Projects
The project will include interpreting project requirements, modelling database design and implementing database design, business logic and web-based presentation layer. Project assessment includes competence in technical skills and clarity of writing.

You will use the COMP 636 Learn page to submit your project work.

Academic Penalties

Late Submission of Assessment
Unless alternative arrangements have been made with the Examiner, items of assessment that are submitted after the due date and time will attract an immediate penalty of 25% of the marks available. Those received more than 48 hours after the due date and time will be awarded a mark of zero.

Student Workload
At a minimum, 150 hours for 15-credit courses, 200 hours for 20-credit courses or 400 hour for 40-credit courses represents the amount of time that an average or B grade student might be expected to spend to receive a passing grade. As the total student workload for a course is not spread evenly from week to week and students are expected to proactively manage their workload throughout the semester. Achievement in a course is based on student performances, not on the time committed to studying the course. No matter how many hours a student puts into this course, they are not guaranteed a pass. The following time-use guidelines are provided as an example of how the hours may be allocated in this course.

Contact Hours	**Total hours (over semester)**
Face to face contact, e.g., lectures, tutorials, field trips, exams. This includes recorded / online lectures or other classes.	140
Non-contact Hours	
Self-directed learning, e.g., study, projects, assessments, tests and exam prep.	260
Work experience Hours	
Total Student Workload	**400**

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.