Unit Outline

ISYS2001 (V.2) Introduction to Business Programming
Semester 2, 2025

Unit study package number:	ISYS2001
Mode of study:	Internal
Tuition pattern summary:	Note: For any specific variations to this tuition pattern and for precise information refer to the Learning Activities section. Computer Laboratory: 1 x 24 Hours Semester Online Lecture: 1 x 12 Hours Semester This unit does not have a fieldwork component.
Credit value:	25
Pre-requisite units:	Nil
Co-requisite units:	Nil
Anti-requisite units:	COMP1005 (v.0) Fundamentals of Programming or any previous version
Result type:	Grade/Mark
Approved incidental fees:	Information about approved incidental fees can be obtained from our website. Visit https://www.curtin.edu.au/students/essentials/fees/understanding-your-fees for details.
Unit coordinator:	**Name:** Dr Michael Borck **Phone:** +61 8 9266 3976 **Email:** Michael.Borck@curtin.edu.au **Location** Building: 402 - Room: 720 **Consult:**
Teaching Staff:	
Administrative contact:	**Name:** FBL Teaching Support **Phone:** Please email **Email or Website:** FBL-TSUnitAdmin@curtin.edu.au **Location** Building: N/A - Room: N/A
Learning Management System:	Blackboard

Acknowledgement of Country

Curtin University acknowledges Aboriginal and Torres Strait Islander people, the First Peoples of this place we call Australia, and recognise them for caring for Country for more than 60,000 years. We are honoured and grateful for the privilege to maintain campuses operating in Boorloo (Perth) and Karlkurla (Kalgoorlie) in Australia. We pay our respects to Elders past and present as Custodians and Owners of these lands. We recognise their deep knowledge and their cultural, spiritual and educational practices, and aspire to learn and teach in partnership with them. Curtin also acknowledges First Nations peoples connected with our global campuses. We are committed to working in partnership with all Custodians and Owners to strengthen and embed First Nations' voices and perspectives in our decision-making, now and into the future.

Syllabus

This unit is designed to provide students with a solid foundation in basic programming and computational concepts, regardless of their previous coding experience. Through a variety of interactive learning activities, students will gain the knowledge and skills necessary to confidently apply programming tools and techniques to solve problems in a range of fields, such as business, science, and engineering. By the end of the unit, students will be able to develop and implement effective programs using appropriate programming languages and apply best practices in program design and development.

Introduction

Welcome to the future of programming. This unit introduces you to Python through a modern, AI-assisted, and project-based approach. Instead of traditional lectures, you will learn by doing, using Generative AI as a digital collaborator to build a functional "Personal Finance Assistant."

This course is designed for business students and focuses on the practical application of programming to solve real-world problems. You will learn not only the core concepts of Python but also the critical 21st-century skill of how to effectively prompt, critique, and refine AI-generated code.

Our learning environment is "zero-install." All work will be conducted using browser-based tools like Google Colab for coding, GitHub for version control, and NotebookLM for personal knowledge management and reflection.

By the end of this course, you will be able to:

- Understand and apply core Python programming concepts.
- Use AI tools to generate, refine, and debug Python code ethically and effectively.
- Develop business-oriented Python projects from concept to completion.
- Apply structured prompting techniques to guide AI collaborators.
- Analyse, test, and simplify AI-generated code to meet project requirements.

Unit Learning Outcomes

Curtin University's six Graduate Capabilities indicate to employers that graduates possess discipline knowledge and valuable skills. Each course unit addresses these capabilities through specific learning outcomes, which outline what students need to know and do to succeed. Assessments are designed to test these outcomes, ensuring that upon completion, students have met all learning objectives.

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

	On successful completion of this unit student can:	Graduate Capabilities addressed
1	Configure and navigate an Integrated Development Environment (IDE) to develop, debug, and execute programs efficiently. Use IDE features to optimise program performance and functionality	
2	Recognise, describe, and effectively use different data types and algorithmic constructs to design and develop innovative and responsible programs that are both effective and efficient	
3	Plan and execute effective testing strategies for programs using standard techniques and notations. Refine and optimise programs using testing results and collaborate with team members to ensure comprehensive testing	
4	Develop problem-solving strategies and apply programming methodologies to create efficient algorithms and programs that solve real-world problems and approach programming challenges from an innovative and responsible perspective, taking into account the social, ethical, and global implications of your programs	

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 people and other diverse cultures**		**Industry connected and career capable**

Find out more about Curtin's Graduate Capabilities.

Learning Activities

This unit uses a "flipped classroom" and project-based learning model. There are no traditional lectures. Your learning will be centered around hands-on lab sessions where you will build your "Personal Finance Assistant" project week by week.

- AI-Integrated Learning: You will use AI tools like Gemini (in Colab), GitHub Copilot, and ChatGPT as your programming partners. You will learn to prompt them for code, critique their suggestions, and debug their mistakes.
- Interactive Labs & "Stealth Blueprinting": Each week's lab builds upon the last. You will complete a short "Lab Exit Ticket" at the end of each session. These tasks are designed to reinforce the weekly topic while secretly helping you build a blueprint for your final project.
- Zero-Install Environment: All tools are browser-based. We will use Google Colab for coding, GitHub for version control and portfolio management, and you are encouraged to use NotebookLM for personal research and reflection.

Learning Resources

The text(s) for this unit are:

Borck, Michael. Python Jumpstart: Coding Fundamentals for the AI Era.

Electronic: Yes **Essential:** No **Resource Type:** eBook
Url: https://michael-borck.github.io/python-jumpstart/

Borck, Michael. Intentional Prompting: Mastering the Human-AI Development Process.

Electronic: Yes **Essential:** No **Resource Type:** eBook
Url: https://michael-borck.github.io/intentional-prompting/

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	Lab Exit Tickets	20 %	**Week:** 2-9 **Day:** In Lab **Time:** Begining of Lab	1,2	No	No
2	Programming Project	40 %	**Week:** 13 **Day:** Friday 17th October 2025 **Time:** 23:59	3,4	Yes	Yes
3	Applied Programming Portfolio	40 %	**Week:** Examination Period **Day:** TBA **Time:** TBA	2,4	No	No

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

Detailed Information on assessment tasks

Lab Exit Tickets

This is a secure and authentic one-on-one, 15-minute viva conducted via Microsoft Teams during the examination period. It replaces a traditional timed exam.

- **Format:**
  - **Part 1: The Structured Defense (5 mins):** The assessor asks questions specific to your submitted project and "Developer's Diary" to verify authorship and understanding.
  - **Part 2: The Randomized Live Challenge (10 mins):** You will be given a new, unseen problem from a secret question bank and must solve it live, sharing your screen. You are encouraged to use AI assistants but must narrate your process.
- **Preparation:** An official document will be published with **example** problems from the three challenge categories: **Refactoring, Debugging, and Feature Extension**. The actual assessment questions will remain secret.

Programming Project

This is your chance to build a real-world Python application. Your submission is a portfolio of work demonstrating your entire development process.

- **Deliverables:**
    1. **The Python Application Code:** Stored in a GitHub repository with a clear and consistent commit history.
    2. **The "Developer's Diary":** A markdown file in your repository containing several "Annotated AI Interactions." Each interaction must be documented as an **Evidence Package**:
        - **The Artifact:** A short screen recording or GIF showing the interaction (e.g., accepting a Copilot suggestion, or a prompt/response from a chatbot).
        - **The Context:** A one-sentence description of your goal.
        - **The Reflection:** A short analysis of what happened, what you did in response, and what you learned. This is required to ensure authenticity.

Applied Programming Portfolio

This is a secure and authentic one-on-one, 15-minute viva conducted via Microsoft Teams during the examination period. It replaces a traditional timed exam.

- **Format:**
    - **Part 1: The Structured Defense (5 mins):** The assessor asks questions specific to your submitted project and "Developer's Diary" to verify authorship and understanding.
    - **Part 2: The Randomized Live Challenge (10 mins):** You will be given a new, unseen problem from a secret question bank and must solve it live, sharing your screen. You are encouraged to use AI assistants but must narrate your process.
- **Preparation:** An official document will be published with **example** problems from the three challenge categories: **Refactoring, Debugging, and Feature Extension**. The actual assessment questions will remain secret.

Pass requirements

To Pass This Unit, Students Must:

1. Achieve a Final Mark of 50 or greater.
2. Achieve at least 40% in the Final Exam (Structured Defense & Live Refactoring) to demonstrate applied competency.
3. Have at least 6 out of 8 Lab Exit Tickets successfully marked.
4. Submit meaningful work for all assessment components.

Assessment Moderation

Fair assessment through moderation

Moderation describes a quality assurance process to ensure that assessments are appropriate to the learning outcomes, and that student work is evaluated consistently by assessors. Minimum standards for the moderation of assessments are described in the Assessment and Student Progression Manual.

Pre-marking moderation

To ensure quality assessment practices and experiences in this unit, pre-marking moderation strategies include the following:

- Peer review of the assessment design: Colleagues will review and provide feedback on the assessment tasks before they are finalised to ensure they are appropriate and aligned with the unit's learning outcomes.
- Clear assessment criteria: We will provide clear and specific assessment criteria for each task to ensure that students understand what is expected of them and can meet the learning outcomes of the unit.
- Sampling of student work: We will sample student work across multiple assessors to ensure that the quality of assessment is maintained and that grading is consistent across the marking team.

Intra-marking / Post-marking moderation

To ensure quality assessment practices and experiences in this unit, post-marking moderation strategies include: These strategies include:

- Double marking: A second assessor independently marks the same piece of work to ensure consistency and fairness in grading. This process helps to validate the initial assessment and reduces the potential for bias.
- Moderation of grades: Multiple assessors review the grades assigned to a particular assessment task. This collaborative approach helps to ensure that grades are consistent and fair across all students, promoting equity in assessment outcomes.
- Feedback to assessors: Assessors receive constructive feedback on their grading practices, including areas for improvement and opportunities for further development. This ongoing process helps to ensure that grading remains consistent, fair, and aligned with the assessment criteria throughout the unit.
- Review of assessment tasks: After grading is complete, the assessment tasks and rubrics are reviewed to identify any areas for improvement. This reflective practice ensures that future assessments are appropriately aligned with the learning outcomes of the unit and remain relevant and effective.
- Appeals process: Students are provided with a clear and fair process to challenge their grades and seek further clarification on the grading process.This transparent approach ensures that grades are fair, consistent, and aligned with the learning outcomes of the unit, while also providing students with an opportunity to understand their performance better.

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 Form and within the student OASIS (My Studies tab – Quick Forms) account.
2. Submit the application for an Assessment Extension with supporting documentation via the online form.
3. 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.

Deferred examinations/tests will be held from 08/12/2025 to 13/12/2025. Notification to students will be made after the Board of Examiners' meeting via the Official Communications Channel (OCC) in OASIS.

Further Assessments

Further assessments, if granted by the Board of Examiners, will be held between 08/12/2025 to 13/12/2025. Notification to eligible students granted a further assessment 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 of this unit is Chicago 18th Author-Date.

More information can be found on this style from the library web site
https://uniskills.library.curtin.edu.au/referencing/chicago18/introduction/

Privacy

Curtin's privacy statement describes how personal information is handled. Curtin may record or transmit your image or voice during learning activities or class participation, both on campus and internationally. Students may also record for study purposes but must not share these recordings publicly and must seek permission from those recorded. Recordings cannot be used for commercial purposes or shared beyond personal study. Breaching

the privacy policy or procedures may lead to disciplinary action under Statute No 10. For privacy concerns, please contact your Unit Coordinator.

Copyright

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 Academic Integrity Website.

Appropriate Use of Generative Artificial Intelligence (Gen-AI) technologies

Curtin supports the philosophy of teaching students to appropriately use Gen-AI technologies in an ethical and responsible way. Gen-AI technology is rapidly evolving and being incorporated into software programs, so it is important to understand how it can and cannot be used within your studies.

Check your assessment instructions carefully before using any Gen-AI software (e.g. Chat GPT, Midjourney, GitHub Copilot, etc.). You are not permitted to use Gen-AI software in any assessment task unless written permission is explicitly granted by the Unit Coordinator (e.g. within Blackboard or the assignment specifications). Where use of Gen-AI is approved, you must use it in accordance with those instructions. Unapproved, inappropriate, or undisclosed use may be dishonest or unfair behaviour, and thus considered misconduct.

Visit the appropriate use of Gen-AI technologies website and library website on Gen-AI for more information.

Academic Integrity Warnings

An Academic Integrity Warning may be issued to a student in limited circumstances and only where misconduct is not involved.

Academic Misconduct

Staff members are required to report suspected misconduct. 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 content, and behaviours like falsifying medical certificates for extension. Contract cheating, the use of file sharing, translation services/apps, paraphrasing tools (text-spinners), article generators, unapproved and inappropriate use of Gen-AI tools, and assignment help websites also may be considered academic misconduct. The longer term personal, social, and financial consequences of misconduct can be severe, so please ask your tutors or unit coordinator if you need clarification or are unsure what to do.

Information and Communications Technology (ICT) Expectations

Curtin students should ensure they have reliable internet access to connect to OASIS email, Blackboard or other Learning Management Systems, and Library Services. A computer or mobile device may be necessary for preparing and submitting assignments.

You may be required to use remote invigilation software like IRIS or Respondus Monitor with Lockdown Browser to verify your identity and monitor your behavior during online assessments. This requires a computer, webcam, microphone, and reliable internet access. If you don't have access to the necessary equipment, you can use the resources available at the Curtin University Library.

For general ICT assistance, please visit the IT tools and guides website. For study resources and assistance, check out the UniSkills website.

Additional information

Generative AI (Gen-AI) Usage Policy

You are **encouraged** to use Generative AI tools in this unit. Learning to collaborate with AI is a core learning outcome. All usage must be done ethically and transparently.

- **Be clear about your AI use:** All significant AI contributions must be documented in your "Developer's Diary" as an "Evidence Package."
- **Think critically:** AI is a powerful assistant, but it is not infallible. You are responsible for testing, debugging, and refining all code, regardless of its origin.
- **Undeclared use is misconduct:** Using AI without documenting it in the required manner will be considered academic misconduct.

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.

Student Rights and Responsibilities

Students must be aware of all relevant legislation, policies, and procedures concerning their rights and responsibilities. This information is available on the student rights and responsibilities website.

Student Equity

Several factors might hinder students from performing their best in studies or assessments, such as disabilities, medical conditions, significant caring responsibilities, pregnancy, religious practices, remote living, or other reasons. If you believe you are unfairly disadvantaged, contact the appropriate service. University staff can only assist if they are aware of your circumstances, so please reach out for help.

To discuss your needs in relation to:

1. Disability or medical conditions, contact AccessAbility Services
2. Elite athletes, contact Elite Athlete Coordinator
3. All other grounds, contact the Student Wellbeing Advisory Service

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Recent Unit Changes & Response to Student Feedback

Students are encouraged to provide feedback through student surveys (such as Insight and the annual Student Experience Survey) and interactions with teaching staff.

Listed below are some recent changes to the unit as a result of student feedback.

This unit has been significantly redesigned to better align with modern industry practices and the evolving landscape of software development. Based on student feedback and a commitment to providing a more engaging and practical learning experience, the following key changes have been implemented:

- **New Project Theme:** The central project has been changed to the "Personal Finance Assistant." This new theme provides a practical and relevant context for learning and ensures academic integrity by preventing the reuse of work from previous semesters.
- **Deep Integration of AI:** Generative AI is no longer just a topic; it is a core part of the workflow. You will learn to use AI as a digital collaborator, a key skill for any modern developer.
- **Focus on Authentic Assessment:** The traditional final exam has been replaced with a live, one-on-one "Structured Defense & Live Refactoring" viva. This secure assessment measures your true ability to apply your skills in a realistic setting.
- **Scaffolded Learning:** The new "Lab Exit Ticket" structure is designed to incrementally build a blueprint for your final project, rewarding consistent effort and reducing end-of-semester pressure.
- **Zero-Install Environment:** To maximise accessibility and minimise technical issues, the unit now exclusively uses browser-based tools, including Google Colab, GitHub, and NotebookLM.

Program Calendar

Program Calendar – Semester 2 2025

Week	Begin Date	Lecture/ Seminar	Pre-readings	Tutorial/ Other	Assessment Due
Orientation	14 July	Orientation Week			
1	21 July	Intro to Python & "Vibe" Programming	Jumpstart: Ch 2, 3, 23, 26 Prompting: Ch 1, 2	"Prompt a Simple Budget Tracker"	
2	28 July	Variables & Data Types	Jumpstart: Ch 5, 6, 8, 9	"Categorise Your Spending"	Lab Exit Ticket 1
3	4 August	Conditionals & Decision Making (TDD Focus)	Jumpstart: Ch 12 Prompting: Ch 3, 4, 5, 6	"Budget Alerts" (Write tests first)	Lab Exit Ticket 2
4	11 August	Functions	Jumpstart: Ch 10, 11 Prompting: Ch 7, 8, 9	"Refactor with Functions"	Lab Exit Ticket 3
5	18 August	Lists & Loops	Jumpstart: Ch 13, 14, 15	"Transaction History"	Lab Exit Ticket 4
6	25 August	Dictionaries & Data Structures	Jumpstart: Ch 16	"Spending Analysis"	Lab Exit Ticket 5
7	1 September	Tuition Free Week			

8	8 September	Business Data Processing	Review relevant chapters	"Import/Export Transactions (CSV)"	Lab Exit Ticket 6
9	15 September	APIs & External Data	Jumpstart: Ch 27	"Stock Portfolio Tracker"	Lab Exit Ticket 7
10	22 September	Object-Oriented Programming (OOP)	Jumpstart: Ch 22	"The Transaction and Budget Classes"	Lab Exit Ticket 8
11	29 September	Files & Exception Handling	Jumpstart: Ch 17, 18	"Save and Load Your Budget"	
12	6 October	Testing & Debugging (TDD Focus)	Jumpstart: Ch 19, 20 Prompting: Ch 11	"Unit Testing Your Finance App"	
13	13 October	Final Project Implementation & Review	Review relevant chapters	"Finalising Your Personal Finance Assistant"	Programming Project Due
14	20 October	Study Week			
15	27 October	Examinations			Final Exam Viva
16	3 November	Examinations			Final Exam Viva