



# COMP161

## Course Outline S2 2024



### COMP 161 Computer Programming

S1, S2, N1

0.15 EFTS

OC, OL, DP

18 points

An introduction to computer programming suitable for beginners with little or no prior experience. Introduces the Java programming language, basic object oriented concepts, and simple graphical applications.

R COMP 160

SC Arts and Music, Commerce, Science

Based on the listing in the Guide to Enrolment, see the guide for an explanation of abbreviations.

This Course Outline is for the S2 version of COMP161. S1 is the recommended and by far the most popular version, as it provides the best pathway to COMP162 in S2. The S2 version is exactly the same course, and the N1 version (in Pre-christmas Summer School) covers exactly the same material in a shorter timeframe (these versions require departmental permission). Please make sure that you have the correct version of this Course Outline from Blackboard. Any questions email [adviser.cosc@otago.ac.nz](mailto:adviser.cosc@otago.ac.nz).

### Intended learning outcomes

On successfully completing this paper you should be able to:

- Understand fundamental concepts relating to computer programming.
- Analyse tasks and design Java programs to implement solutions.
- Read and write simple programs in the Java programming language.
- Demonstrate knowledge and skills relating to problem solving, program design, object oriented programming, and event-driven graphical programming.

### Workload expectations

This is an 18 point paper which represents 180 hours of work (as per [Otago guidelines](#)). There are 26 scheduled lecture hours and 50 scheduled lab hours, leaving 104 hours for your own study.

### Assessment requirements and submission dates

This course is 100% internally assessed. You sit a sequence of “mastery” tests. Each test is worth 6% of your final mark (1% for preparation work, and 5% when you pass the test), see the table on the next page. You must pass the tests in order, pass Test 1 before you can sit Test 2, and so on.

Mastery tests can be attempted more than once (in general there will be two opportunities to attempt a test every week). There is no set schedule or submission date for mastery tests, although ideally you should complete tests on topics at roughly the same rate that the lecture topics are progressing (see the Schedule on Page 3).

There are also two Practical Tests, which can be attempted only once, at the following times:

**Practical Test 1: Tuesday 27 August at 6 – 8pm**

**Practical Test 2: Tuesday 15 October at 6 – 8pm**

Please put these dates in your calendar now! Further details will be posted on Blackboard closer to the dates.

	Topics (see also the Schedule on Page 3)	Value %
<b>Mastery Test 1</b>	Variables and assignment	6%
<b>Mastery Test 2</b>	Methods	6%
<b>Mastery Test 3</b>	Objects and constructors	6%
<b>Mastery Test 4</b>	Booleans and selection	6%
<b>Mastery Test 5</b>	Strings	6%
<b>Mastery Test 6</b>	Repetition and iteration	6%
<b>Mastery Test 7</b>	Arrays	6%
<b>Mastery Test 8</b>	Files and exception handling, 2DArrays	6%
<b>Mastery Test 9</b>	ArrayLists/ JUnit	6%
<b>Mastery Test 10</b>	GUI and events	6%
<b>Practical Test 1</b>	Mastery 1 - 4 topics, date as on Page 1 above.	10%
<b>Practical Test 2</b>	Mastery 1 - 9 topics, date as on Page 1 above.	30%

Mastery tests and the practical tests are all held in the COMP161 laboratory under supervision, and must be completed individually. The best preparation for these tests is to work through the exercises in the *COMP161 Lab Book*.

## Lectures and laboratories

All lecture notes are available in the *COMP161 Lecture Book*, which is available on Blackboard. The Schedule of topics is included on Page 3 below. The lecture videos that are posted on Blackboard at the end of each scheduled lecture time are not recordings of the live lectures, they are pre-recorded videos that cover exactly the same content, but broken into sections (and including some extra exercises) – this format is more appropriate for online learning.

You will be timetabled into two lab sessions per week<sup>1</sup>, one in the first half of the week (to noon on Wednesday) and one in the second half (from noon on Wednesday). These are held in a laboratory in the Computer Science Department (Owheo Building), as specified in your eVision timetable. **Please attend your timetabled weekly sessions.** Lab exercises are specified in the *COMP161 Lab Book*, which is available on Blackboard.

## Attendance requirements

There are no formal attendance or terms requirements, but you should aim to progress through lab exercises and mastery tests at roughly the same rate that the lecture topics are progressing (see the Schedule on the next page).

As noted in the section on assessment above, there are a finite number of opportunities to attempt mastery tests. If you do not make steady progress (roughly one mastery test per week), you may run out of time, and be unable to complete enough tests to allow you to pass the course (achieve 50% or better). **We strongly recommend that you aim to make steady progress on the mastery tests, so that you achieve your desired mark for the course.** It is your responsibility to plan and monitor your own progress.

Students are responsible for keeping staff informed of absences due to illness. You should tell us as soon as possible so that we can sort alternative arrangements if possible.

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<sup>1</sup> With the exception of Week 1 – there are no labs scheduled in the first half of this week, labs start in the second half of Week 1.

## Schedule

Lectures and labs are held twice a week for the 13 teaching weeks of the semester (except that there is just one lab in the first week), as shown below.

This schedule shows the relationship between lectures, labs, and mastery levels (aim for Mastery Test 1 at the end of Level 1, and so on).

Week	Lec. No.	Lecture title / topics	Lab No.	Laboratory	Mastery Level
1	1	Introduction to Java			
	2	Data types, language basics	1	Introduction to Java	1
2	3	Program structure, methods	2	Data types and language basics	1
	4	Expressions, arithmetic	3	Methods	1
3	5	Objects 1: Classes, special methods	4	Return Methods, Expressions, Arithmetic	2
	6	Graphics1: Basics, drawing	5	Objects1	3
4	7	Selection 1: Boolean expressions, if	6	Graphics	3
	8	Selection 2: if..else, switch	7	Selection 1. Boolean Expressions	4
5	9	Objects 2: Methods, static, strings	8	Selection 2	4
	10	Structured programming, misc topics	9	Useful Tools and Concepts	5
6	11	Design and testing 1	10	Strings	5
	12	Repetition 1: While, do..while, for-each	11	Catch-up	
7	13	Repetition 2: For loops, nested structures	12	Repetition 1. Iterators. Iterable.	6
	14	Arrays 1: Basics of arrays	13	Repetition 2	6
8	15	Arrays 2: Arrays of references	14	Arrays 1	7
	16	Arrays 3: 2D arrays, files	15	Arrays of References	7
9	17	Objects 3: Classes, packages, visibility	16	Files, Exception handling	8
	18	Objects 4: References, this	17	2-dimensional (2D) Arrays	8
10	19	ArrayList, collections	18	Catch-up	
	20	Design & testing 2	19	ArrayList / Collections	9
11	21	Graphics 2: Components	20	Unit Testing	9
	22	Graphics 3: Events	21	Graphics 1: Components	10
12	23	Graphics 4: Examples	22	Graphics 2: Events	10
	24	OO topics	23	Graphics 3: Animation	10
13	25	Simulation, programming	24	Options	
	26	Topics in computer science	25	Catch-up	

## Reading requirements and learning materials

The main learning materials for the course are the *COMP161 Lecture Book* and the *COMP161 Lab Book* (as described in the section Lectures and laboratories above). Both are available on Blackboard (under the section Course Documents). Each lecture will have recommended readings, often drawn from two free online textbooks, as described in the lecture book. There is no required hardcopy textbook.

## Computing resources and other technologies

This course uses the [jGRASP](#) integrated development environment (IDE) to write programs (in the [Java programming language](#)). jGRASP is available on the machines in your timetabled laboratories, and may also be available on the Otago Student Desktop. It is free to install on your own machine (Mac, Windows or Linux), instructions on installing are included in the *COMP161 Lecture Book*. (The recommended version of jGRASP includes an installation of Java.)

This course uses Blackboard to distribute resources (including the Lecture Book and Lab Book) and for course announcements. Please check Blackboard for announcements regularly, and monitor your email (make sure that your student email forwards to your preferred email account if necessary). This course also uses Moodle (a learning management platform similar to Blackboard) to administer mastery tests in our labs.

## Teaching staff and contact details

Course coordinator and lecturer:

Prof. Anthony Robins <[anthony.robins@otago.ac.nz](mailto:anthony.robins@otago.ac.nz)>  
Room 253, Computer Science (Owheo Building)

Contact Anthony for  
general enquiries and  
anything relating to  
lectures.

Teaching fellow:

Ms Karen Gray <[karen.gray@otago.ac.nz](mailto:karen.gray@otago.ac.nz)>

Contact Karen for  
anything relating to  
labs.

## Class representatives

Otago has a system of [class representatives](#) run by OUSA (the Students Association). You can find the class reps for COMP161 [on this page](#).

## Disclaimer

Every effort is made to ensure that the information contained in this document is accurate, but it is subject to change / correction. Changes will be notified via Blackboard. You are encouraged to check Blackboard regularly. It is your responsibility to be informed.

## Academic integrity and acceptable academic practice

Any assessed work in COMP161 (all versions) must be your own. You are welcome to discuss tasks and program designs with other people, but **the code that you submit for assessment must be written by you** (and no other person or generative system). **You must not share your code with others or post it in any forum.** You may be asked to discuss assessed work or code with teaching staff, and the outcome of these discussions may affect your mark for that work or code. Please see further rules in the introduction to the *COMP161 Laboratory Book*.

In general the standard Otago policies apply. Please see the Otago page on [Academic Integrity and Academic Misconduct](#) (including [A Brief Guide for Students \(PDF\)](#)), the policy on [Academic Integrity](#), and the page on [Plagiarism](#). The text in the following box is taken from the Brief Guide linked above.

### Academic Integrity A brief guide for students

Academic integrity means being honest in your studying and assessments. It is the basis for ethical decision-making and behaviour in an academic context. Academic integrity is informed by the values of honesty, trust, responsibility, fairness, respect and courage.

Where can I get help?

If you are unsure about what academic integrity is, or if you need more information, you can

- Visit: [otago.ac.nz/study/academicintegrity](https://otago.ac.nz/study/academicintegrity)
- Ask Student Learning Development: <https://www.otago.ac.nz/hedc/students/index.html>
- Visit the Library website: <https://www.otago.ac.nz/library/index.html>
- Make use of the resources at the International Office.
- Talk to your lecturer or tutor.
- Read your course outline or guide-these almost always include information about academic integrity.

What is Academic Misconduct?

Acting in a way that is contrary to the values and practices of academic integrity is considered to be 'academic misconduct'.

Academic misconduct includes:

- Plagiarism (using someone else's words or ideas without properly acknowledging/referencing them).
- Copying from another student or allowing your work to be copied.
- Submitting the same or very similar assignment for more than one paper.
- Working on an assignment with other students where an individual answer is required.
- Assisting someone else's academic misconduct by writing their assignment, giving them answers in a test or examination, or by impersonating someone else in a test or examination.
- Taking unauthorised material in to a test or examination.
- Making up data or information.
- Getting someone else to do your assessment on your behalf (including purchasing an assignment).

The University takes academic misconduct very seriously. More information on academic misconduct, including processes when misconduct is alleged to have occurred and possible penalties when misconduct is proven, can be found in the University's Student Academic Misconduct Procedures: [otago.ac.nz/administration/policies/otago116850.html](https://otago.ac.nz/administration/policies/otago116850.html)

## Support available

The Computer Science Department provides support in [many cases](#). Please contact the course coordinator if you have any special requirements.

For general learning see the resources at [Student Learning Development](#). Various organisations can provide support for [Māori](#) and [Pacific](#) students. Students with disabilities or impairments should contact the [Otago Disabilities Information and Support Office](#). See also [Student Health](#), including [mental health and wellbeing](#).

OUSA (your Student Association) has its own [support page](#), or you can click through to this [Student and Academic Services](#) page to access these links:

Here to help. Discover a range of student services available to support you during your university experience.



Career Development  
Centre



Disability Information  
& Support



International Student  
Support



Locals Programme



Māori Centre



Pacific Islands Centre



Proctor and Campus  
Watch



Recreation Services



Social Impact Studio



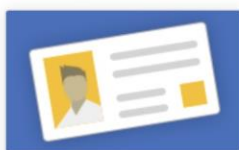
Student Health



Te Whare Tāwharau  
sexual violence  
support and  
prevention centre



Chaplain



ID cards



Justices of the Peace



Office of Student  
Success