Lecture 1 - Introduction
At the end of this lecture, students should be able to:

- understand where to obtain information about COMPSCI 101
- understand which parts of the COMPSCI 101 assessment contribute to the practical mark
- understand which parts of the COMPSCI 101 assessment contribute to the theory mark
- understand that to pass COMPSCI 101, both the practical part of the course and the theory part of the course need to be passed
- understand an algorithm
We are using Canvas

As well as using Canvas, COMPSCI 101 has a course website:

https://www.cs.auckland.ac.nz/courses/compsci101s1c/

We will be using the Canvas Learning Management system this semester. All the material on the COMPSCI 101 website can be accessed through Canvas:

https://canvas.auckland.ac.nz
The COMPSCI 101 website can be reached by logging onto the Canvas website:  https://canvas.auckland.ac.nz

OR by going directly to the COMPSCI 101 website:  
https://www.cs.auckland.ac.nz/courses/compsci101s1c/

• Here you will find all the information about our course set up.
• Get used to looking at this website for information about lecture slides, lab documents, assignment resources, assessment, people involved in the course and lots more.
The COMPSCI 101 website

Most of the resources you will need (e.g., lecture slides, lab material, assignments, course information) can be found on the COMPSCI 101 website:

https://www.cs.auckland.ac.nz/courses/compsci101s1c/
People in this course

Ann Cameron (Lab Supervisor)
Email: ann@cs.auckland.ac.nz
Phone: 9234947
Room: 303.413
People in this course

Damir Azhar (Coordinator)
Email: damir.azhar@auckland.ac.nz
Room: 303.411
People in this course

Adriana Ferraro

Email: adriana@cs.auckland.ac.nz
Phone: 9237113
Room: 303.415
People in this course

Jing Sun
Email: j.sun@cs.auckland.ac.nz
Room: 303.522
Open door policy – Visit any time
On the course information sheet there is a schedule of the lectures for COMPSCI 101.

https://www.cs.auckland.ac.nz/courses/compsci101s1c/info/CourseInformation.pdf
Lecture slides will be available on the web before each lecture.

https://www.cs.auckland.ac.nz/courses/compsci101s1c/lectures
There is **no textbook** but we do have an online reference book, *Think Python – How to think like a computer scientist*.

- Please be aware that we are teaching the COMPSCI 101 material in a different order to the ordering in this book. This book is a reference book, not a textbook for this course.

https://www.cs.auckland.ac.nz/courses/compsci101s1c/resources/
Labs start in the second week: March 5 – March 9

- You must attend **one** 2 hour tutorial lab sessions each week. You will have enrolled in your lab time through Student Services Online. You should attend the same lab time each week.
- Labs are held in room 279 (Building 303S) which is on the second floor of the Computer Science building.

https://www.cs.auckland.ac.nz/courses/compsci101s1c/labs/
More about labs

Labs start in the second week: March 5 – March 9
There are 9 labs and each lab is worth 1% of your final mark.

- At your lab time you will be given programming problems to solve within the 2 hours for your lab.

https://www.cs.auckland.ac.nz/courses/compsci101sc/labs/
Lab Reflection Exercises

Every lab has two lab reflection exercises:

• Pre-lab reflection exercise to be done the weekend before the lab.
• Post-reflection exercise to be done by the end of Friday the week of the lab.

You will be asked to reflect on your understanding of the key topics covered in lectures the week before the lab.

• These topics will be assessed during the labs themselves.

Lab reflection exercises are not graded.

• They are part of the lab assessment and need to be completed.

All reflection exercises will be held on Code Runner 2

https://www.coderunner2.auckland.ac.nz/moodle/
Lab Reflection Exercises:

- List key topics covered in lectures the week before the lab.

- Let you keep track of the topics you understand well, those you need to work on a bit more and those you need to get help with.

- Compare your pre and post-lab reflection exercises to assess how your understanding has changed.

If there is a topic you still do not understand after a lab – come and see us for help 😊.
Before the First Lab

Visit the lab on **Thursday** straight after the lecture.

- Before the first lab you need to complete the lab preparation sheet (I will hand this out).
- In order to fill the sheet you need to visit the COMPSCI 101 lab on Thursday. Immediately after the lecture on Thursday I will be taking people across to the COMPSCI 101 lab.
The assignments are worth 11% of your final mark. Assignments give you the experience of solving problems on your own.

Never share your code.

Solve the problem on your own – discuss the assignment with others but never share code.

https://www.cs.auckland.ac.nz/courses/compsci101s1c/assignments/
There are 5 assignments in total worth 11% of your final mark.

All assignments are due at 4:30pm on the due date.

For three of these five assignments (7% of your final mark), you are required to write and submit one or more programs.

Three of the five assignments are handed in using the Assignment Drop Box:

https://adb.auckland.ac.nz/Home/
Assignments - CodeRunner

There are 5 assignments in total worth 11% of your final mark.
All assignments are due at 4:30pm on the due date.

For **two** of these five assignments (a total of 4%), you are required to use **CodeRunner**.

The CodeRunner tool is designed to help you practise by presenting you with a set of coding and other exercises. Students can work with on-line exercises using the Moodle learning system.

https://www.coderunner2.auckland.ac.nz/moodle/

Information about using CodeRunner is available on COMPSCI 101 assignments web page:

https://www.cs.auckland.ac.nz/courses/compsci101s1c/assignments/
Plagiarism: Any work that you take credit for, but which is done by someone else. This is treated very seriously in an academic environment.

<table>
<thead>
<tr>
<th>Policy</th>
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<tbody>
<tr>
<td>• All assignments will be checked for copying</td>
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<tr>
<td>• Everyone involved is penalised</td>
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<tr>
<td>• Disciplinary action will be taken in all cases of plagiarism</td>
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<table>
<thead>
<tr>
<th>Advice</th>
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<tbody>
<tr>
<td>• Don’t ever copy an assignment (or part of an assignment) from anyone</td>
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<tr>
<td>• Don’t ever allow anyone to copy your assignment</td>
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https://www.academicintegrity.auckland.ac.nz
All students starting a new programme at the university are required to complete the Academic Integrity course. For more information, go to Academic Integrity - information for students.
The test is worth 15% of your final mark

The test date and time is:

Tuesday 24\textsuperscript{th} April 6:30pm - 7:45pm

Email Damir Azhar (dazh001@aucklanduni.ac.nz), the COMPSCI 101 course coordinator, if you are unable to attend the test.

The test is 75 minutes long plus 5 minutes of reading time. Arrive at 6:15 because your reading time starts at 6:25pm.

More about this closer to the time.
The exam is worth 65% of your final mark.

## Passing COMPSCI 101

### Assessment

<table>
<thead>
<tr>
<th>PRACTICAL</th>
<th>THEORY</th>
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<tbody>
<tr>
<td>Labs</td>
<td>Test</td>
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<tr>
<td>9%</td>
<td>15%</td>
</tr>
<tr>
<td>Assignments</td>
<td>Exam</td>
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<tr>
<td>11%</td>
<td>65%</td>
</tr>
</tbody>
</table>

### To pass the course

- you MUST pass the PRACTICAL (i.e., get 10 / 20 or more)
- you MUST pass the THEORY (i.e., get 40 / 80 or more)
On Canvas you will find:

- your marks
- class announcements
- lecture recordings
- links to the COMPSCI 101 website
- Piazza

https://canvas.auckland.ac.nz
Piazza is a Q&A web service integrated into Canvas.

You can use Piazza to ask questions that the lecturers and your classmates can discuss and answer.

Please never post your own code up on Piazza!
Undergraduate Labs:
There are demonstrators in these labs to help you

FCL (room 191) – First Floor Computer Lab
This is a quiet lab
Learning outcomes for COMPSCI 101

• determine the state of the program both during and after execution, given a code listing that may include functions and parameters, loops, conditionals and sequences,
• implement a given algorithm using Python,
• show that a program meets given specifications by writing appropriate tests,
• provide a useful level of documentation, in the form of program comments, for all programs developed,
• decompose a simple problem into several smaller tasks,
• compose functions that perform a specified task into a program that solves a given problem.
A finite set of steps that specify a sequence of operations to be carried out in order to solve a specific problem.

A better definition:

An algorithm is a well-defined, unambiguous sequence of steps.
Algorithms – what kind of steps?

An algorithm is a well-defined, unambiguous sequence of steps

Walk to the bus stop at the shops up the road

Get on bus number "101"

Pay the bus driver $4.50

Get off at the Symonds St bus stop

Walk 200m to the Computer Science building
Algorithms – what kind of steps?

An algorithm is a well-defined, unambiguous sequence of steps

Open the front door

**IF** it is raining **THEN**

take an umbrella

Walk down the driveway and turn left

Walk 50m down the street
Algorithms – what kind of steps?

An algorithm is a well-defined, *unambiguous* sequence of steps.

**HOW TO PAY THE BUS FARE**

- **Open wallet**
- **WHILE** you still haven't paid enough
  - give the driver another coin
- **Take a seat**
Basic programming steps

1. design

2. coding

3. testing
Programming - Step 2 - write the code

We will use the **Python programming language** to implement our algorithms.
Hangman algorithm

Enter a letter: d

+----+
|   |
| 0  |
/\  \
/   \\

=------=

Word: l a _ _ b o n e s

Letters Missed: r m k c u d
Letters Guessed: a e s n o l b
Letters Available: fghijpqtvwxyz

Sorry, you have lost in the game of Hangman...
The word was lazybones

Enter a letter: a