# Computer Science (CS102-2)

## Joshua Maglione

### Semester 2 (2025)

**Module information:**

**Coordinates:**

| | | |
|---|---|---|
| Wednesdays | 2:00pm – 2:50pm | AC202 |
| Thursdays | 9:00am – 9:50am | Tyndall |

**Contact:**

joshua.maglione@universityofgalway.ie

**Website:** Canvas and https://joshmaglione.com/2025CS102-2.html

**Topics:** This is the "main lecture" of the second semester of CS102. This module is supplemented by CS102-4 Further Computing. We will cover the basics algorithms and data structures. We cover topics of

1. computational complexity (big O notation),
2. fundamental data structures,
3. sorting algorithms,
4. recursion.

We will be using Python throughout for examples.

**Labs:** This module also has two 3-hour labs each week. You should plan to attend at least one of these labs per week, but you are not required. Each week you can independently choose either lab. Labs begin during the third week—the week of 27 January. There will be no labs during the fourth week—the week of 3 February (St. Brigid's Day).

Labs will have a few demonstrators to help with the lab assignment.

**Coordinates:**

| | | |
|---|---|---|
| Mondays | 3:00pm – 6:00pm | Block E G-013 (BLE-G013) |
| Wednesdays | 3:00pm – 6:00pm | Block E G-013 (BLE-G013) |

**Assessment:** There will be 7 lab assignments due on Fridays at 5:00pm. The final mark consists of 40% assessment and 60% final exam.

**Reading:**

1. Bhargava, Aditya Y. *Grokking Algorithms*. Simon and Schuster, 2024.
   First ed. available online; second ed. available on publisher's website.

2. Cormen, Thomas H., et al. *Introduction to Algorithms*, third edition. MIT press, 2022.
   Available through the University Library and online.

3. Lehman, Eric, et al. *Mathematics for Computer Science*, version 6 June 2018.
   Available online.

4. Morin, Pat. *Open Data Structures (in Pseudocode)*, edition 0.1G$\beta$.
   Available online.