

10 LABS x 2 hours 15 minutes

- Lab 1: OOP Reviews & Arrays
- Lab 2: Simple sorting
- Lab 3: Stacks & Queues
- Lab 4: Linked List
- Lab 5: Recursion
- Lab 6: Trees
- Lab 7: Hash Tables
- Lab 8: Graph
- Lab 9: Exam
- Lab 10: Project Presentation

There are 8 practical labs (30%):

- Select 3 random submissions to mark
- If you miss a lab or a submission: that lab will be selected to mark

Lab 9 will be a practical exam (35%)

- You can use your laptop to code
- You are only allow to use the following IDE:
 - NetBeans
 - VS Code
 - BlueJ
 - IntelliJ
- You must DISCONNECT your laptop from the Internet

Lab 10 is the project presentation (35%)

Deadline to submit your work on Blackboard: 3 days from the lab day

- i.e., Lab day is Monday => deadline is Wednesday (mid-night)

Assignments submission guide

- Create the folder with a name like: **StudentID_Name_Lab#**, (e.g. **01245_VCThanh_Lab1**) to contain your assignment with subfolders:
 - Problem_01 (sometimes Problem_i or Problem_Array)
 - Problem_02 (sometimes Problem_ii or Problem_Queue)
 - etc.
- Compress (.zip) and Submit the whole folder with the same name (i.e., **01245_VCThanh_Lab1.zip**) to Blackboard
- Students **not** following this rule **will get their marks deducted**

8. Lab 7: Hash Tables

8.1. Objectives

- Understand and implement Hash table

8.2. Problem

HashDoubleApp

- Display the key sequence for the initial filling of the table
- Display the hash value, the step, and the probe sequence for insert and find.
- Display the probe length for each find and insert
- Display the average probe length for the initial filling of the table
- Investigate how the load factor affects the average probe length
- Demonstrate the importance of using a prime number for the table size

HashChainApp

- Display the key sequence for the initial filling of the table
- Display the probe length for each find and insert
- Display the average probe length for the initial filling of the table
- Investigate how the load factor affects the average probe length