

**Identifying information will be printed here.**

**University of Waterloo  
Midterm Examination  
CS 251**

Term: Spring    Year: 2023

Date: June 22, 2023  
Time: 4:30 pm - 6:20 pm  
Duration: 110 minutes  
Sections: 001–003  
Instructor: Zille Huma Kamal

**Student Signature:** \_\_\_\_\_

**UW Student ID Number:** \_\_\_\_\_

Number of Exam Pages  
(including this cover sheet)

23 pages

Exam Type

Closed Book

Additional Material Allowed

NO ADDITIONAL MATERIALS ALLOWED

**Instructions:**

- If you believe there is an error in the exam, notify a proctor. An announcement will be made if a significant error is found.
- It is your responsibility to properly interpret a question. **Do not ask questions regarding the interpretation of a question**; they will not be answered and you will only disrupt your neighbours. If there is a non-technical term you do not understand you may ask for a definition. If you are confused about a question, state your assumptions and proceed to the best of your abilities.
- If you require more space to answer a question, there are blank pages at the end you may use instead, but you must **clearly indicate** in the provided answer space that you have done so.
- **Do not detach any pages and do not write on the QR codes**