

**Queen's University
School of Computing**

**CISC121 – Introduction to Computer Science I
Fall 2020**

Instructor: Dr. Ting Hu
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Course Objectives

Introduction to design, analysis, and implementation of algorithms. Recursion, backtracking, and exits. Sequences. Elementary searching and sorting. Order-of-magnitude complexity. Documentation, iterative program development, translating natural language to code, testing and debugging.

Expected Learning Outcomes

- Design and construct simple software in a conventional procedural programming language.
- Use an interactive development environment to write programs in a conventional procedural programming language.
- Implement the basic searching and sorting algorithms: linear and binary search; bubble, insertion and/or selection sort, merge sort, and quicksort.
- Write and analyze programs using recursion.
- Analyse the worst-case computational complexity of small iterative and recursive programs.
- Build a foundation for further learning by exposure to multiple computer languages, development tools, and methodologies.

Evaluation

The final grade in the course will be determined as follows:

Assignments (× 4)	20%
Weekly Quizzes (× 10)	20%
Mid-term Exam (× 1)	25%
Final Exam (× 1)	35%

	100%

Topic Schedule

Week	Dates	Topic(s)
1	September 8 - 11	1. Intro to computer science
2	September 14 - 18	2. Python review
3	September 21 - 25	2. Python review
4	September 28 – October 2	3. Modular design
5	October 5 - 9	4. Testing and debugging
6	October 12 - 16	5. Computational complexity
7	October 19 - 23	Review and Mid-term exam
	October 26 - 30	Mid-term break
8	November 2 - 6	6. Search algorithms
9	November 9 - 13	7. Sorting algorithms
10	November 16 - 20	8. Recursion
11	November 23 - 27	9. Recursive sorting
12	November 30 – December 4	Review

Assignment Schedule

Assignments	Due Dates	Topic
A1	September 30	Python
A2	October 14	Testing and debugging
A3	November 18	Search and sorting
A4	December 2	Recursion and recursive sorting

Notes

Queen's University is situated on traditional Anishinaabe and Haudenosaunee Territory.

Please see <https://www.cs.queensu.ca/students/undergraduate/syllabus/term2020Fall.php> for Common Syllabus Information (Fall 2020)

1. Late Policy

All assignments are given an automatic extension of 72 hours with a 20% deduction penalty as specified in the rubric for each assignment. Late assignments are not accepted beyond 72 hours except in the case of documented extenuating circumstances. Assignments are posted in advance and always have at least 2 weeks allocated for completion. Assignments should NOT be left until the last minute. They require planning and will take time to debug and revise. **You will not be granted extra time beyond the 72-hour extension.**

2. Copyright of Course Materials

Course materials created by the course instructor, including all slides, presentations, handouts, tests, exams, and other similar course materials, are the intellectual property of the instructor. It is a departure from academic integrity to distribute, publicly post, sell or otherwise disseminate an instructor's course materials or to provide an instructor's course materials to anyone else for distribution, posting, sale or other means of dissemination, without the instructor's **express consent**. A student who engages in such conduct may be subject to penalty for a departure from academic integrity and may also face adverse legal consequences for infringement of intellectual property rights.

3. Grading Item Remarks

You may request a remark of your assignments and exams. All remark requests should be emailed to the instructor within **5 calendar days** after the grades are posted. **Late requests will not be considered.**