

INSTRUCTOR: Tom Naps

OFFICE: Halsey 214, phone 424-1388

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OFFICE HOURS: MW 12:30 - 1:30, TTh 11:30 - 1:00

REFERENCES:

- Class notes available on D2L
- Required textbook: *A Balanced Introduction to Computer Science*, Third Edition, David Reed

Topic Coverage (Chapter References to Reed)

1. HTML and Web Pages – Chapters 1, 2, 3
2. JavaScript and Dynamic Web Pages – Chapter 4
3. JavaScript and User Interaction – Chapters 5 and 6
4. Functions, Randomness, and Introduction to JavaScript graphics using the P5 library – Chapter 7
5. Algorithms, Programming Languages, Abstraction, Libraries as illustrated by more P5 graphics – Chapters 8 and 9
6. Computer Science as a Discipline – Chapter 10
7. Conditional Execution – Chapter 11
8. Data Representation – Chapter 12
9. Conditional Repetition – Chapter 13
10. JavaScript Strings – Chapter 15
11. JavaScript Arrays & using them in your data-driven course project – Chapter 17
12. Inside the Computer – the von Neumann Architecture – Chapter 14
13. Inside the Computer – Transistors and Integrated Circuits – Chapter 16
14. Computers & Society – Chapter 18

Learning Outcomes

Given the coverage topics in this course, you will be expected to ...

1. Identify the core areas and big ideas in computer science.
2. Describe the difference between an algorithm and a computer program.
3. Identify the main components of the von Neumann architecture.
4. Describe the architecture and major components of a web application in a client server environment.
5. Given a description of a problem, apply the problem-solving steps used in computer programming to create a solution design.
6. Working from a solution design, implement a solution to a problem as a JavaScript program that runs in a web browser such as Firefox or Chrome.
7. Select the appropriate data types when implementing a solution to a problem using JavaScript.
8. Identify and implement selection control structures using if, if-else, and if-else-if statements in JavaScript.
9. Identify and implement repetition control structures using loops in JavaScript.
10. Identify and implement functions in JavaScript.
11. Design an HTML form for collecting user input with validation in JavaScript.
12. Process an array or collection of items in JavaScript.

Course Grading Policies

Your final grade for this course will be based on five factors, namely exams, lab exercises, unannounced in-class quizzes, individual component of a web development project, and team component of a web development project

Factor	Weight
Exams (3)	30%
Lab Exercises	30%
Quizzes	20%
Team Data-driven Development Project	20%

At the end of the term, your work in all of these areas will contribute to a numerical grade for the course based on a 100-point scale. Grade cutoff levels on this final scale are:

A \geq 92	B \geq 82	C \geq 72	D \geq 62
A- \geq 90	B- \geq 80	C- \geq 70	D- \geq 60
B+ \geq 88	C+ \geq 78	D+ \geq 68	F < 60

FAQ

Do I have to come to class? You are expected to arrive prepared to ALL the course sessions. Furthermore you are expected to participate in the classroom discussions and activities to the best of your abilities. This includes being ready to defend your answer to review problems that are occasionally assigned and take those nasty unannounced quizzes that comprise 10% of your grade. It is difficult to envision a student missing and/or arriving unprepared to a number of the class sessions and still succeeding in the course.

What if I'm late in submitting a lab or other assigned work for evaluation? Each lab and assignment will carry with it a due date. If you are late in submitting it for evaluation, it will be accepted but will be penalized at the rate of 10% of point value the first day late, *an additional* 20% the second, *an additional* 30% the third ...

Can I get an extension on work that is due on a specified date? Only if you're ill enough to provide a signed note from the attending physician or have other reasons serious enough that the Dean of Students Office is willing to provide a written note justifying the extension.

If I miss an exam, can I make it up? If you are unable to take a scheduled exam, it may be possible to take a make-up exam provided that you do BOTH of the following, which are then subject to my approval:

- Make arrangements prior to the scheduled exam (for last minute emergencies, telephone me at 424-1388 or leave a message at the computer science office, 424-2068). No after-the-fact notifications will be accepted ... *AND*
- Have a written medical excuse signed by the attending physician OR have a note of justification from the Dean of Students Office.

Only one make-up exam will be given. It will be a rigorous comprehensive exam given at an arranged time during the last week of the semester.

If I miss a quiz, can I make it up? No.

Can I work with others on the labs or on other individually assigned work? No, not in the sense of two people working together on the same problem. You may not "borrow" any piece of code or design of any length from someone else, unless you can live with a zero and the other potential academic sanctions of cheating (see UWO Student Discipline Code 2007, Chapter UWS 14). However, it is acceptable to consult another student for help in debugging code that you have authored yourself and that is not producing the result you expected.