

WARNING: this syllabus is provided for informational use only. The specific content and assignments may change before the start of the course. Students of this course should not use this document but instead retrieve the official version that can be downloaded from the course management site.

GLIS 617-001: Information System Design (3 credits)

Course outline

General information

Instructor: Dr. Charles-Antoine Julien

TA: Banafsheh Asadi

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Office: 3661 Peel St, Room 308

Office hours: Contact TA, or make appointment with instructor.

Always use your McGill email address and be sure to include [617] in the subject line.

Class Meeting

Lecture: Thursdays, 11:35–1:25 in Room EDU 211

Labs: Thursdays, in Room LEA 212, at **one** of the following times:

1:35–2:25 (sec 002) **OR** 2:35–3:25 (sec 003)

Email & Discussion Group

All questions on content or class pragmatics should be posted to the discussion group to ensure that the whole class can benefit from the response. Questions on course matters sent via email will not receive a response. Email should only be used for correspondence of a personal nature. To ensure that your emails are properly filtered for prompt reading, include [617] in the subject line.

Note that we (instructor and TAs) do not read course-related email or the discussion group over the weekend. Please consider this when preparing for assignments and exams.

Course Description

The orientation of this course is to help prepare information professionals to participate in the design of information systems through hands-on experience with the foundational concepts of the field. Topics will include computer terminology and the syntax and semantics of programming languages. Our emphasis will be on the use of these techniques for text parsing, searching, and database design, which are fundamental to the field of information science.

Learning outcomes

By the end of the course, you should be able to:

- Understand and use ICT terminology, relevant to data representation and storage
- Implement a simple computer program for text parsing and searching
- Understand fundamental concepts of digital data representation
- Understand basic concepts of database models

Instructional method

The instructional methods used in this course are somewhat different from those used in

other courses in the MIST program. The first 110 minutes of each week will consist of interactive demonstration-based lectures and group activities to provide an overview of that week's content. For the remaining 50 minutes, the class will be divided into sections, to complete hands-on activities in the computer lab that apply the concepts learned in class.

Textbook

There is one textbook for this course:

- Meyers, M. (2014). *A Smarter Way to Learn JavaScript*. Createspace. (ISBN 978-1497408180)

This book is available in paperback and Kindle format. Both versions are available from Amazon.ca.

The textbook complements the material covered in class, reinforcing concepts and providing numerous exercises to help you master JavaScript syntax. As our emphasis in class is not on the syntax, this is an important resource, especially for students without prior experience with computer programming. You are not strictly required to read the book or complete the exercises, but it is expected that if you find yourself struggling in the course, your first line of action will be to make sure you are following this book and its exercises.

Class Materials

Although programming activities are ultimately done on a computer, planning, and working out solutions is best done on paper. You are responsible for ensuring that you bring paper and a writing instrument with you to ALL lectures and labs.

Tentative Course Outline

Please note that the exact ordering of topics may change.

	Class Topic	Assignment	Lab Readings
Week 1	Computational Thinking & Introduction to JavaScript Syntax		Ch 1,44
Week 2	Introduction to Algorithms: Indexing for Search		Ch 2-9,21
Week 3	Structured vs Unstructured Data		Ch 35-37
Week 4	Data Representation	Reflecting on IT	Ch 15-17
Week 5	Conditionals		Ch 10-14
Oct 9— 13	<i>Study Break – No Class</i>		
Week 6	Iteration	Indexing	Ch 18-20, 41-42
Week 7	Putting it All Together		
Week 8	Searching and Sorting	Parser	
Week 9	Human-Computer Interaction		
Week 10	Databases	Search Engine	
Week 11	Cloud Computing		
Week	Interactive Web Design		

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Dec 9 *Final Exam (Dec 8, 9am-12pm)*

Assignments and Evaluation

Your final course grade will be based on two individual assignments, weekly quizzes (completed online and auto-graded), a midterm, and a final exam.

Assignment	Weight
Reflecting on IT Assignment (due Sep 28)	10%
Indexing Assignment (due Oct 19)	15%
Parser Assignment (due Nov 2)	15%
Keyword Search Assignment (due Nov 16)	20%
Final Exam (Dec 8, 9am-12pm)	30%
Quizzes (10 in total)	10%
Total	100%

No extensions, delays, or late assignments will be accepted unless a physician's certificate is provided.

Lab Exercises & Quizzes (10% of final grade, distributed across 10 quizzes)

Each week you will be given a set of exercises to work on in the lab. The goal is for these exercises to be realizable within the lab period. These labs provide you with the opportunity to apply the material learned in class. You are encouraged to work on your lab exercises with a partner or in small groups. Working with a partner can help enrich the learning process; however, it is your responsibility to ensure you are effectively using your partner to help you learn and are not merely copying someone else's work.

Lab exercises are not handed in. However, each lab will be associated with a take-home quiz available on mycourses. The quizzes are auto-graded and you can attempt them as many times as you wish with your highest score counted. Only quizzes attempted before the final exam on December 8, 2016 will count towards your final grade.

Although there are no grades directly associated with the lab exercises, they have been designed to prepare you for the assignments and exams. It is extremely difficult to do well on the exam and assignments without completing the lab exercises. Solutions will be posted within a few weeks of each lab, but it is extremely important that you attempt each lab to the best of your ability before consulting the solution.

Readings and Exercises (not graded)

While technically optional, readings are encouraged, especially for those relatively new to computing. These readings (as well as their associated online exercises) should be completed before the lab (or even better, before the lecture!). Note, that while a number of chapters may be assigned each week, they are typically only a page or two. Also the exercises are quite straightforward. Unlike the lab exercises, which are designed to challenge you on core computational concepts (the focus of the course), the textbook exercises will help you to memorize the syntax and rules of JavaScript (which are not the focus of the course, but mastering them will make the rest of the course easier).

Individual Assignments (60% of the final grade, distributed across 4 assignments)

Individual assignments will enable you to bring together the topics of the course. These must be completed independently. Detailed descriptions and instructions will be posted on

mycourses once the concepts required for completing the assignment have been taught. **Assignments are due at 11:59pm (on the due date listed previously), and are to be submitted online via mycourses.**

Final Exam or Project (30% of the final grade)

A final exam will be given at the end of the semester to reinforce the concepts taught in class and presented in the laboratory exercises. The exam is closed book, but you may bring one 8½ x 11 sheet of handwritten notes (double-sided).

McGill Policy Statements

McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism, and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/students/srr/honest/ for more information).

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site www.mcgill.ca/students/srr/honest/).

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté.

If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 514-398-6009 before you do this.

Additional policies governing academic issues, which affect students, can be found in the McGill Charter of Students' Rights (The Handbook on Student Rights and Responsibilities is available at www.mcgill.ca/files/secretariat/Handbook-on-Student-Rights-and-Responsibilities-2010.pdf).

Acknowledgement and Copyright

In this course, we will be using materials (lectures and lab activities) developed and shared by a number of individuals and institutions, including Nick Parlante (Stanford), Computer Science Inside, and CS Unplugged.