**COMPSC 2S03- PRINCIPLES OF PROGRAMMING**

**FALL 2018**

**DEPARTMENT OF COMPUTING AND SOFTWARE**

**MCMASTER UNIVERSITY**

**COURSE DETAILS**

**Instructor:** Afraz Syed, syeda59@mcmaster.ca

**Office Hours:** Thursday: 12:30-14:30 (ITB 244)

**Teaching Assistant:** Keivan Nalaie, nalaiek@mcmaster.ca

**Office hours:** (TBD)

**Online availability of course materials:** Avenue.mcmaster.ca

**Lectures:** Monday & Thursday: 12:30–13:20, Tuesday: 13:30–14:20 (HSC 1A6)

**Tutorials:** There are 3 tutorial sections: Monday: 14:30 – 15:30 (GS101), Tuesday: 8:30-9:30 (T13 107), Wednesday: 15:30 – 16:30 (ABB 271)

**PREREQUISITE**

COMPSCI 1MD3 or ENGINEER 1D04 or MATH 1MP3

**ANTIREQUISITE**

COMPENG 2SH4, 2SC3, SFWRENG 2S03

**CALENDAR DESCRIPTION**

Fundamental concepts of programming: expressions, statements, procedures, control structures, iteration, recursion, exceptions; basic data structures: records, arrays, dynamic structures; use of libraries.

**LEARNING OBJECTIVES**

**Precondition**

Understanding of computing and programing experience attained during prerequisite courses: COMPSCI 1MD3 or ENGINEER 1D04 or MATH 1MP3.

**Postcondition**

1. Examine and apply basic principles of programming using an imperative programming language; C.

2. Examine and practice with Linux commands and compilation features.

3. Examine and practice with program organization, compilation, execution and testing.

4. Differentiate between local vs. global variable, dynamics vs. static memory

5. Examine and implement dynamic data structures

6. Explore and use control structures, functions, pointers, characters, strings, input output

7. Implement program with of multiple files

8. Examine and implement recursion and iteration to solve problems

9. Explore program organization and design

10. Examine optimizations for high performance

**TEXTBOOKS:**

**Required:** C How to Program (8th Edition) by Paul J. Deitel, Harvey Deitel

**Reference:** C Programming: A Modern Approach by K N King

**TOPICS:**

1. Linux, Compilation features for C languages and basic Linux commands

2. Intro To C Programming & Structured Program Development In C. Chapter 2, 3

3. Program Control, Chapter 4

4. Functions, Chapter 5

5. Makefiles

6. Arrays, Chapter 6

7. Pointers, Chapter 7

8. Program organization

9. Characters and Strings, Chapter 8

10. Formatted Input/Output, Chapter 9

11. Structures, Unions, Bit Manipulations, and Enumerations, , Chapter 10

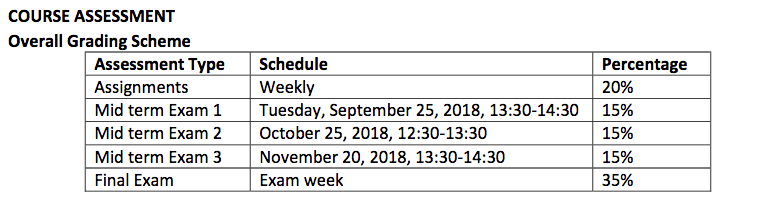
12. File Processing, Chapter 11

13. Data Structures, Chapter 12

14. Program design

15. Optimization for high-performance

16. Debugging, profiling, tuning for performance



**Assignments**

These are individual assignments and all students are required to complete their own work. You are permitted to discuss general aspects of the problem with peers, but your solutions must be your own effort. Submission deadline for weekly assignments is Sunday midnight, late assignments receive zero.

TAs will mark the assignments and graded assignments will be returned during tutorials. Any request for remarking must be first directed to the TAs. The TAs will discuss the solution for these problems during the tutorial next week. Other related issues will also be addressed during the tutorial.

**Midterm & Final exams**

There are 3 midterm exams on dates and times listed above. The locations of the midterm exam will be posted close to the date. Exams will assess your understanding of the material from the lectures, tutorials, assignments, and from the textbooks.

Final examination will be closed book and comprehensive, assessing

all materials from the lectures, tutorials, assignments, and of the textbooks. It will be scheduled by the Registrar’s office in the usual way. It will be 2.5 hours (150 minutes) in duration.

**Remarking and Missed assessments**

For missed assessments you will receive zero unless you submit a MSAF form. Requests for remarking of an assignment or a test must be made within one week after the marked assignment/test is returned. Requests that are later than a week will not be accommodated.

**COURSE INFORMATION ON AVENUE**

At avenue you can find the latest version of the course outline, materials and announcements. It is your responsibility to be aware of the information and announcement. “Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is

dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course

instructor.”

**ACADEMIC INTEGRITY**

You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behavior can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at www.mcmaster.ca/academicintegrity.

The following illustrates only three forms of academic dishonesty:

• Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.

• Improper collaboration in group work.

• Copying or using unauthorized aids in tests and examinations.

**COURSE ADAPTATION**

The instructor and university reserve the right to modify elements of the course during the term. The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labor disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email. It is the responsibility of the student to check their McMaster email and course websites frequently during the term and to note any changes.

**DISCRIMINATION**

The Faculty of Engineering is concerned with ensuring an environment that is free of all adverse discrimination. If there is a problem that cannot be resolved by discussion among the persons concerned, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or Human Rights Consultant, as the problem occurs.

**ACCOMMODATION OF STUDENTS WITH DISABILITIES**

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140, ext. 2865 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for Academic Accommodation of Students with Disabilities.

**REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK**

**McMaster Student Absence Form (MSAF)**

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”.

**ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)**

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.