Software Engineering 2AA4 -- Software Design I: Introduction to Software Development

ADMINISTRATIVE DETAILS

Instructor: Vincent Maccio

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Office hours: Wednesday after class

TA Contact:

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Plus one more:TBD	TBD

TOPICS AND LEARNING OBJECTIVES

Calendar Description: Software life cycle, quality attributes, requirements documentation, specifying behavior, implementation in code; classes and objects, interface specification; creational, structural, and behavioral software design patterns; reviews, testing and verification.

Learning Objectives: This course will focus on object-oriented programming, software design and engineering principles, formal specification, testing, and design patterns.

By the end of this course students will be able to:

- Write programs in Java under the OO paradigm
- Choose and justify certain designs over others
- Understand software engineering principles
- Create a module from a formal specification
- Write a formal specification for a particular module
- Understand different methods of testing and their importance
- Identify appropriate design patterns which apply to a specific problem

MATERIALS & FEES

There is no required text for this course.

Optional Texts:

- Fundamentals of Software Engineering, Ghezzi et al.
- Head First Design Patterns: A Brain-Friendly Guide, Freeman

Other Texts to consider if you are interested in further readings.

- Design Patterns: Elements of Reusable Object-Oriented Software, Gamma et al. (Gang of four)
- Introduction to Programming Using Java, *Eck D.*
- Think Java: How to Think like a Computer Scientist, *Downey A., Mayfield C.*

COURSE OVERVIEW AND ASSESSMENT

Overview:

The following is subject to change – potentially drastically. Please realize everything this term has an increased level of uncertainty. We may have to adapt to new parameters! For now… until told otherwise…

- I will conduct the lectures live via Teams. All lectures will be recorded.
- All course materials (assignments, source code, etc.) will be posted on Avenue.
- All assignments will be submitted via Avenue.
- Tutorials will be a online.
- All live lectures and online tutorials will be recorded and made available to the students.

Assessments:

Item	Weight	Comments
Assignment 1 (week 5)	15%	Focuses on Java implementation of a formal specification
Assignment 2 (week 9)	15%	Focuses on writing/designing a formal specification
Midterm (March 2nd)	25%	Week after reading week. Planning for in-person during lecture. This week's lectures will be treated as review sessions.
Assignment 3 (week 12)	15%	Design pattern applications
Exam (Exam week)	30%	Planning on in-person.

The due dates above are rough estimations**. I will always give you <u>at least</u> two weeks to complete an assignment from the date I post it.**

The material covered on each assignment is also a rough estimation, if we progress quickly/slowly through the material the coverage may change.

If you have an inquiry regarding your assessment grades, you must contact the TA which graded it within 2 weeks of when the grades are posted. I will make announcements on Avenue informing you which Tas graded which assessments. Please contact the TA before contacting me.

TUTORIALS

They will be online, at least for now. The tutorials are two hours long, the first hour will be a traditional tutorial, the second will be used as TA office hours. During office hours, TAs will not be teaching a lesson, but instead answering your questions regarding assignments, midterms, material, etc.

MSAFs

This is stated below as well. All MSAF'ed assessments will have their weight shifted to the final exam. If you send me a confirmation email regarding an MSAF, it may take several days for me to get back to you – I let them accumulate then do them in batches.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

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 behaviour 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. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at https://secretariat.mcmaster.ca/university-policies-proceduresguidelines

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.

AUTHENTICITY / PLAGIARISM DETECTION

Some courses *may* use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses *may* use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, 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 a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

ONLINE PROCTORING

Some courses *may* use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

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".

All missed work will have their weight shifted to the final exam.

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 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.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.