UNIVERSITY of GUELPH

School of Computer Science
CIS*4450/6130 Object Oriented Modeling, Design and Programming
Winter 2019

We acknowledge that the University of Guelph resides on the ancestral lands of the Attawandaron people and the treaty lands and territory of the Mississaugas of the Credit. We recognize the significance of the Dish with One Spoon Covenant to this land and offer our respect to our Anishinaabe, Haudenosaunee and Métis neighbours as we strive to strengthen our relationships with them. Today, this gathering place is home to many First Nations, Métis and Inuit peoples and acknowledging them reminds us of our important connection to this land where we learn and work.

CIS*4450 is a .5 credit course CIS*6130 is a .5 credit course Prerequisites: Instructor Permission
Instructor: Judi McCuaig Office: 2204 Reynolds Email: objects@socs.uoguelph.ca Office hours: appointments available at uofg_oo.youcanbook.me/
Teaching Assistants: Hillary Dawkins Email: objects@socs.uoguelph.ca Office Hours: appointments made via course website

Schedule of activities (subject to change)

Jan 7-11	Object Oriented Fundamentals
Jan 14-18	Core Concepts/Languages Survey
Jan 21-25	Core Topics
Jan 28-Feb 1	Portable data/Persistence
Feb 4-8	Core Topics /Persistence
Feb 11-15	Core Topics
Feb 25-Mar 1	Web Services/Mobile
Mar 4-8	Web Services/Mobile
Mar 11-15	Core Topics
Mar 18-22	Client/Server
Mar 25-29	Client/Server
Apr 1-5	Languages Analysis

Teaching and Learning Activities

Students are expected to become experts in **three of the core concepts**, **one language**, **and one type of application**. Much of the class time will be devoted to discussion groups and cooperative learning activities. Students should come to every class prepared with a portable computing device as well as paper and writing instruments for illustrating discussion points.

Learning Outcomes

- Communicate object-oriented concepts to peers through active discussion and creation of multi-media artifacts
- Demonstrate advanced object-oriented programming knowledge through software development.
- Evaluate object-oriented programming languages given a context for application.
- Identify a suitable toolset for design through deployment, given an application type and target platform.

Partial Core Topics List

- Prototype based vs Class based
- Error/Exception Handling
- Classes and Objects
- Composition (aggregation, association, composition)
- Memory Management/Garbage Collection
- Typing, Generics, Abstract Classes and Interfaces
- UML
- Frameworks and Contracts
- Deployment, Maintenance, and Testing
- Design Patterns

Partial Application Types List

- Portable Data/XML/JSON
- Persistence
- Web Services/Mobile
- Client/Server

Partial Languages List

- Swift
- Scala
- Python
- Kotlin
- Typescript

Assessment

	Due Date	Revision Date	Weight
A1: OO Fundamentals	Jan 21	Jan 24	25%
A2: Portable Data and Object Persistence	Feb 11	Feb 14	25%
A3: Objects in Web Services/Mobile	March 11	March 14	25%
A4: Objects in Client/Server	April 8	April 11	25%

- Graduate students will submit instructional materials with each assignment and will select one of the last three assignments to be a research/review paper instead of a programming assignment.
- Undergraduate students may elect to do a review paper in lieu of one assignment but are not required to do so.
- In the second or third week of the semester, individuals will be given the opportunity to identify one of the last three assignments to be weighted at 30%, and one to be weighted at 20%. This is done to permit a more intense focus on one type of application. Any requested reweighting is binding and will not be reverted to the even distribution.

Assignment Submission: Assignments must be submitted for peer assessment on the morning of the due date no later than 10:00 A.M. Peer assessment is worth 50% of the assignment grade. You will have the opportunity to revise your assignment, so it is in your interests to submit even if your assignment isn't complete. There can be no late submissions as the review allocations will be made automatically by the system.

Revisions: The results of peer assessment will be available approximately 36 hours after the due date. You make

make revisions to your assignment any time up to the revision date. Sometime after 10:00 am on the revision date, your assignment git repository will be copied by the marker and that copy will be graded.

Regrades: Students may request a regrade of an assignment if the marker has made an error in grading. The original submission will be entirely regraded and a new mark will be assigned. It is possible for a mark to go down, go up, or remain unchanged as a result of a regrade. Students must request a regrade via email within 5 calendar days of receiving the assignment grade.

Missed Assignments: There are no makeup assignments. If you miss an assessment and have documentation to show that you are eligible for Academic Consideration the weight of the assessment will be distributed between the other assignments
If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please make an appointment to discuss with your course instructor. Please see the calendar for specific details about regulations and procedures for Academic Consideration

Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course email address within two weeks of the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:

Course Website

Course material, announcements, and grades will be posted to the course website at moodle.socs.uoguelph.ca. You are responsible for taking notes. Often there will be no lecture slides.

Textbook

The Object-Oriented Thought Process by Matt Weisfeld
The text is not required but does provide a lovely theoretical foundation that is language-independent. The course will be roughly organized in a similar fashion to this text.

Description

This course is a special topics course that will exam OO methodology in the context of the skills and knowledge required of a software developer. Topics to be covered include OO fundamentals, Inheritance and Composition, Frameworks and reuse, Portable Objects, Persistent Objects, Objects in Web Services, Objects in Client/Server applications and Design Patterns.
The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs:

Communication & Email Policy

Major announcements will be posted to the course website and the discussion forums. It is your responsibility to check the course website regularly. As per university regulations, all students are required to check their <mail.uoguelph.ca> e- mail account regularly: e-mail is the official route of communication between the University and its students.

Redistribution of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, classmate or guest lecturer. Material recorded

with permission is restricted to use for that course and may not be posted on any public space unless further permission is granted.

Important Dates

Monday, Jan. 7: First day of class
Monday, Feb. 18: Winter Break begins
Monday, Feb 25: Classes resume after Winter Break
Friday March 8: 40th Class Day- last day to drop classes without academic penalty
Friday, April 5: Last class of classes
Monday, April 22: Last day of exams

Instructor's Role and Responsibility to Students

The instructor's role is to develop and deliver course material in ways that facilitate learning for a variety of students. Notes will be made available to students on the course website but are not intended to be stand-alone. The online discussions, assignments, labs, and the e-textbook are all important components of this course.

Students' Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures and help sessions. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed as early as possible. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. All students who take a SOCS course must pass the Academic Integrity Self Test.

For educational purposes, instructors impose conditions on assignments that may limit students' permission to collaborate with others or to utilize external sources (including, but not limited to, software, data, images, text, etc.). Any permitted utilization must be done with proper references. Aiding and abetting is a punishable offence; students must be careful not to help others commit offences by giving out solutions or providing to access computer accounts. Instructors may use automated tools to detect possible cases of academic misconduct. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member.
The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
The SOCS Academic Integrity Unit:

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the

student.
When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.
Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.
Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day. More information: www.uoguelph.ca/sas

Policy on Children in Class

All exclusively breastfeeding babies are welcome in class whenever necessary. I understand that childcare can sometimes be disrupted, and would rather you bring a quiet, occupied child to class than have you skip class. Bringing your child to class should not be a long-term childcare solution but is an acceptable emergency action. If you do bring your child to class, please sit near an exit so that you can step outside without disrupting your peers if your little one needs extra attention.