UNIVERSITY of GUELPH

School of Computer Science
CIS*2430 Object Oriented Programming
Fall 2018

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*2430 is a .5 credit course Prerequisites: CIS*2500
Instructor: Judi McCuaig Office: 2204 Reynolds Email: cis2430@socs.uoguelph.ca Office hours: appointments available at judimccuaig.youcanbook.me
Teaching Assistants: TBA Email: cis2430@socs.uoguelph.ca Office Hours: appointments made via course website

RESOURCES

Course Website

Course material, announcements, and grades will be posted to the CIS*2430 website at **moodle.socs.uoguelph.ca**. Lecture summaries will be available on the course website but lecture slides may not always be available. You are responsible for taking notes.

Textbooks

The required textbook will be used extensively. Readings will be assigned from the textbook as will homework exercises.

- **Required Text:** Objects First with Java: A practical Introduction Using BlueJ(6th ed) by David J Barnes and Michael Koling
- **Recommended Resource Book:** Java Pocket Guide: Instant help for Java Programmers by Robert Liguori and Patricia Liguori

Calendar Description

This course introduces the Object Oriented (OO) approach to programming and algorithm design. Topics will include the creation and use of objects from class libraries, user defined objects, inheritance, modularity, generic code, components, collections and containers, and an introduction to OO design methodologies.

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:

ASSESSMENT

	Assessments	***Weight***
Lab Exams (3 exams-drop lowest)	In lab weeks 4, 7, 10	30% (2*15%)
Assignments (2 in total)	A1: Monday October 22 A2: Monday November 26	40% (2*20%)
Final exam	TBA	30%

Missed Assignments and Labs: ***There are no makeup assignments or lab exams***. If you miss an assessment and have documentation to show that you are eligible for Academic Consideration the weight of the assessment will be moved to the final exam.
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:

Late Assignments: Assignments are due on Monday mornings at 8:30 A.M. Late assignments are penalized at 2% per hour (or portion of hour) late. Consult the section on participation points for exceptions to this rule. Submissions more than 36 hours late will not be graded and grade of zero will be assigned.

Regrades: Students may request a regrade of an assignment or lab exam 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 or lab grade.

Resubmissions: Assignment resubmission is not normally permitted. Consult the section on participation points for exceptions to this rule.

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:

TEACHING AND LEARNING ACTIVITIES

Learning Outcomes

- Identify the major characteristics of different programming paradigms
- (procedural, functional, logical, and object-oriented) and differentiate between procedural and object-oriented paradigms
- Design and implement classes for an object-oriented program demonstrating correct use of encapsulation, constructors, method overloading, class invariants, accessors, mutators, instance variables and class variables.
- Construct class hierarchies that maximize code reuse through inheritance while accommodating differences through method overriding.
- Describe polymorphism and identify situations in which it is used in an OO program.
- Use polymorphism, abstract methods/classes, and interfaces effectively to produce generic code
- Read and understand class diagrams written in UML (Unified Modeling Language)
- Compare event-driven programming with control-driven programming

Student Participation

Research consistently shows that students who actively participate in lectures and learning activities do better academically. To encourage participation, students in CIS*2430 have the opportunity to earn up to 70 participation points that can be traded for extra time to complete or fix assignments.

Participation points can be earned as follows*:

Lab Attendance and completion of activities	2 pts per lab
Classroom Response System (iClicker Cloud)	1 pt per lecture (75%+ participation)
Participation and submission of active learning activities	1 pt per activity
Weekly homework	2 pts per week

**Other activities may be added to this list. Consult course website for current list*

Participations points may be traded as follows:

Penalty free late submission of assignment (within the 36-hour late period)	25 points
Resubmission of assignment (within 48 hours of grade release)	35 points
Unweighting of incorrect answer for 1 point final exam question (max of 5)	10 points

Topics List

- Objects and Classes
- Object Interaction
- Event Driven Programming
- Collections & Iterators
- Classes and program structure
- Functional Processing
- Documentation and project organization
- Maps, sets, strings, wrappers, class variables, class methods
- Inheritance
- Streams
- Class Design
- Coupling, Cohesion and Refactoring
- Junit
- Testing
- Debugging
- Abstract classes
- Interfaces
- Multiple inheritance
- GUI
- Exceptions
- Defensive programming
- Database connectivity
- Files and persistent storage
- Threads and locking

Programming Language and Operating System requirements

Assignments and lab exams will be completed using the Java 8 programming language. Third party libraries and frameworks may be used only with explicit approval of the course instructor. All assignments and lab exams will be graded using Debian Linux. Keep reliable backup copies of all assignments as you may be asked to resubmit work at any time.

Important Dates

Friday, Sept 7: First day of class
Monday, October 8: No Classes (rescheduled to November 30)
Friday Nov 2: 40th Class Day- last day to drop classes without academic penalty
Friday, November 30: Last class for CIS*2430
Friday August 18: Last day of exams

POLICIES AND RESPONSIBILITIES

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.

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, labs 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:

ACCESSIBILTY

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