

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Introduction to Object Oriented Programming
CODE NO. : CSD221 **SEMESTER:** 4
PROGRAM: IT Studies
AUTHOR: Fred Carella
DATE: Winter 2010 **PREVIOUS OUTLINE DATED:** Winter 2009
APPROVED:
"B. Punch"

CHAIR **DATE**
TOTAL CREDITS: 5
PREREQUISITE(S): CSD211s
HOURS/WEEK: 4

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I. COURSE DESCRIPTION:

This course introduces students to the concepts of Object-Oriented Programming and applies them in practical problem-solving exercises. The course presently uses the Java programming language and the Netbeans IDE as the development environment. Previous courses, CSD100 and CSD101, have developed basic skills in C++ programming.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Define, describe and implement the various foundational elements of an object oriented system. (Chapter 1- 3)

Potential Elements of the Performance:

- Define and describe “classes”.
- Define and describe “objects”.
- Define and describe the various components of a class including attributes, accessors and mutators.
- Define the relationship between classes and objects.
- Create objects based on classes.
- Define variables of various data types.
- Define and implement programs that demonstrate variable scopes including static, local and class scope.
- Define and call methods, with and without parameters.
- Write and debug programs that demonstrate all of the above.

*This learning outcome constitutes approximately **25%** of the course*

2. Demonstrate an understanding of the components of an object oriented program. (Chapters 4-6)

Potential Elements of the Performance:

- Write programs comprised of various objects and have those objects interact.
- Demonstrate knowledge of and implement data using the various collection classes including lists and sets.
- Demonstrate knowledge of and implement programs using various libraries.
- Read class documentation.
- Write class documentation.
- Demonstrate an understanding of the package system and the structure of a project.
- Test and debug programs using various methodologies such as unit testing and regression testing.

*This learning outcome constitutes approximately **25%** of the course*

3. Demonstrate an understanding of and implement the concepts of class design . (Chapter 7)

Potential Elements of the Performance:

- Define and be able to demonstrate
 - Responsibility driven design.
 - Coupling
 - Cohesion
 - Refactoring

*This learning outcome constitutes approximately **20%** of the course*

4. Define and write programs that demonstrate inheritance and polymorphism.

Potential Elements of the Performance:

- Define the benefits of inheritance and polymorphism and write programs that demonstrate each.
- Use inheritance.
- Use polymorphism.
- Understand and implement class hierarchies.
- Override methods.

*This learning outcome constitutes approximately **30%** of the course*

III. TOPICS:

1. Foundational elements
2. Components of an object oriented program
3. Class design.
4. Inheritance and polymorphism.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Objects First with Java, 4th Ed.
Barnes and Kolling
Prentice Hall
ISBN: 978-0-13-606086-4

V. EVALUATION PROCESS/GRADING SYSTEM:

The mark for this course will be arrived at as follows:

Outcome	Assignments	Quizzes	Total
outcome #1:	10%	10%	20%
outcome #2:	5%		
	10%	25%	40%
outcome #3:	10%		25%
outcome #4:	<u>5%</u>	<u>25%</u>	<u>15%</u>
	40%	60%	100%

Tests

Outcomes 1-2: 30%
 Outcomes 2-4: 30%

Assignments:

Outcomes 1-2: 20%
 Outcomes 2-4: 20%

(The percentages shown above may vary if circumstances warrant.)

NOTE: *It is required to pass both the theory and the assignment part of this course. It is not possible to pass the course if a student has a failing average in the four written quizzes but is passing the assignment portion, (or vice versa).*

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade “C”, (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the instructor. Students are required to be in class on time and attendance will be taken within the first five minutes of class. A missed class will result in a penalty in your marks unless you have discussed your absence with the professor as described above. The penalty depends on course hours and will be applied as follows:

Course Hours	Deduction
5 hrs/week (75 hrs)	1% / hr
4 hrs/week (60 hrs)	1.5% /hr
3 hrs/week (45 hrs)	2% /hr
2 hrs/week (30 hrs)	3%/hr

Absentee reports will be discussed with each student during regular meetings with Faculty Advisors. Final penalties will be reviewed by the professor and will be at the discretion of the professor.

Tuition Default:

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of March will be removed from placement and clinical activities. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.