SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO


Sault College

COURSE OUTLINE

COURSE TITLE:	Java I – Introduction to Java		
CODE NO. :	CSD211	**SEMESTER:**	3
PROGRAM:	Computer Studies		
AUTHOR:	Fred Carella		
DATE:	Sep 2009	**PREVIOUS OUTLINE DATED:**	Sep 2008
APPROVED:	"B. Punch"		
	CHAIR		**DATE**
TOTAL CREDITS:	5		
PREREQUISITE(S):	CSD102		
HOURS/WEEK:	4		

I. COURSE DESCRIPTION:

This course provides an introduction to Java and continues the study of programming languages begun in a previous course.

The student will apply knowledge of program structure and programming constructs such as selection, looping and data structures, to the writing of programs.

In addition the concepts of objects and classes, inheritance and polymorphism will be introduced and applied in the writing of programs.

The course continues with an introduction to GUI programming with an emphasis on event driven programming and concludes with exception handling and binary I/O.

Programs will be written using the Netbeans IDE in the Windows Operating System environment.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. **Write structured code in the Java programming environment.**

   Potential Elements of the Performance:

   - Describe the history of the Java programming environment.
   - Compare and contrast Java and C++.
   - Describe the components of a Java program including attributes and methods.
   - Describe the Java programming environment and the process of Java program development/execution.
   - Describe primitive Java data types.
   - Describe and apply knowledge of data scope.
   - Describe and apply various collection constructs such as arrays and lists.
   - Write programs with multiple methods that illustrate parameter passing and return of data.
   - Write and debug simple Java applications in command line and IDE environments.
   - Perform I/O using keyboard, screen and files.
   - Apply all of the above in the writing of programs.

2. **Utilize the various control structures available with Java.**

Potential Elements of the Performance:

- Define algorithm.
- Describe the concepts of sequential execution and transfer of control using “if” and “switch” statements.
- List and describe the looping structures available with Java such as “for”, “for each”, “while” and “do while” constructs.
- Write programs utilizing the control structures available with Java.

3. **Write Java programs using objects.**

Potential Elements of the Performance:

- Describe objects and classes and the relationship between them.
- Describe and apply the use of constructors.
- Create objects and access them via object reference variables.
- Differentiate between object reference types and primitive data type variables.
- Describe and apply the public, private and protected visibility modifiers.

4. **Inheritance and polymorphism and other OOP constructs.**

Potential Elements of the Performance:

- Develop a subclass from a superclass through inheritance.
- Invoke super class methods and constructors using the “super” keyword.
- Distinguish and differentiate between the overloading and overriding of methods.
- Understand and apply the concept of polymorphism.
- Describe and apply casting.
- Describe and apply the ArrayList collection class.

5. **Abstract Classes and Interfaces.**

Potential Elements of the Performance:

- Describe and apply abstract classes.
- Describe and apply interfaces.

6. **GUI Interfaces and Event Driven Programming**

Potential Elements of the Performance:

- Create user interfaces using frames, panels, and Swing widgets.
- Understand and apply layouts.
- Understand event driven programs.
- Understand and apply events, event listeners and event methods.
- Write programs that deal with action events.
- Write programs that deal with mouse events.
- Understand and apply exceptions in the handling of errors.
- Discover how I/O works in the java environment and write programs that read and write data and read and write objects to files.

III. TOPICS:

1. Write structured code in the Java programming environment.
2. Utilize the various control structures available with Java.
3. Write Java programs using objects.
4. Inheritance and polymorphism and other OOP constructs.
5. Abstract Classes and Interfaces.
6. GUI Interfaces and Event Driven Programming

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Fundamentals First Introduction to Java Programming, Seventh Edition, by Y. Daniel Liang - Published by Prentice Hall ISBN: 0-13-223738-5

V. EVALUATION PROCESS/GRADING SYSTEM:

Theory Tests and Quizzes	60%
Laboratory Work and Tests	40%
Total	100%

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 tests and quizzes but is passing the assignment portion, (or vice versa).*

The following semester grades will be assigned to students:

Grade Point

Grade	Definition	*Equivalent*
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.

Attendance:

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.

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, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. 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.

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 *November* 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.