SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	Java I – Introduction to Java		
CODE NO. :	CSD211	**SEMESTER:**	3
PROGRAM:	Computer Programmer		
AUTHOR:	Fred Carella		
DATE:	Fall 2016	**PREVIOUS OUTLINE DATED:**	Fall 2015
APPROVED:	Corey Meunier _____ **CHAIR**		**June/16** **DATE**
TOTAL CREDITS:	4		
PREREQUISITE(S):	CSD 102		
HOURS/WEEK:	4		

I. COURSE DESCRIPTION:

This course provides an introduction to software engineering using the Java programming language.

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:

Instructor supplied notes.

See

https://sites.google.com/site/saultcollegeit/courses/csd211-f15

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	**Definition**	*Grade Point 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.

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

VI. SPECIAL NOTES:

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.

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.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located in D2L and on the portal form part of this course outline.

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COURSE OUTLINE ADDENDUM

1. Course Outline Amendments:
The faculty member reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

2. 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.

3. 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 Key Dates Calendar 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. Student Services can provide information regarding the Prior Learning Assessment and Recognition policy or it can be viewed on the student portal.

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

4. 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 announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more is available. Go to https://my.saultcollege.ca.

5. Communication:
The College considers ***Desire2Learn (D2L)*** 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 this Learning Management System (LMS) communication tool.

6. Accessibility 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 the Accessibility Services office. Call Ext. 2703 or email studentsupport@saultcollege.ca so that support services can be arranged for you.

7. Audio and Video Recording 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. Students with disabilities who require audio or visual recording devices in the classroom as an accommodation will receive approval from their counsellor once the Audio and Video Recording Devices in the Classroom Policy has been reviewed by the student. Recorded classroom instruction will be used only for individual academic use and will not be used for any other purpose. Recordings may only be used for individual study of materials presented during class and may not be published or distributed. Intentional misuse of audio and video recordings or intentional misrepresentation when requesting the use of a device for recording shall constitute a violation of this policy and laws protecting intellectual property.

8. Academic Dishonesty:
Students should refer to the definition of "academic dishonesty" in the *Student Code of Conduct*. Students who engage in academic dishonesty will be issued a sanction under the Student Code of Conduct which could lead to and include expulsion from the course/program. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, students must use a documentation format for referencing source material.

9. Tuition Default:
Students who have defaulted on the payment of tuition) as of the first week of November (fall semester courses), first week of March (winter semester courses) or first week of June (summer semester courses) will be removed from placement and clinical activities due to liability issues. 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.