SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

CICE COURSE OUTLINE

COURSE TITLE: Java I – Introduction to Java

CODE NO. :   CSD211   **SEMESTER:**   Fall
MODIFIED CODE: CSD0211

PROGRAM: Computer Programmer

AUTHOR: Fred Carella
MODIFIED BY: Anthea Fazi, Learning Specialist CICE Program

DATE: Sept/2016   **PREVIOUS OUTLINE DATED:**   2015

APPROVED: "Angelique Lemay"   Oct/16

                    DEAN   **DATE**

TOTAL CREDITS: Four

PREREQUISITE(S):   CSD102

HOURS/WEEK: Four

I.   COURSE DESCRIPTION:
This course provides an introduction to software engineering using the Java programming language. The CICE student, with assistance from a learning specialist will apply an acquired basic 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 the CICE student will be assisted to apply these concepts to 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 CICE student, with the help of a Learning Specialist, will demonstrate the basic 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:

All tests and assignments will be completed with the assistance of the Learning Specialist. Any modifications to the tests and assignments will be proposed by the Learning Specialist and are subject to approval from the professor

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.

CICE Modifications:

Preparation and Participation

1. A Learning Specialist will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

A. Tests may be modified in the following ways:

1. Tests, which require essay answers, may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests, which use fill in the blank format, may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

B. Tests will be written in CICE office with assistance from a Learning Specialist.

The Learning Specialist may:

1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

C. Assignments may be modified in the following ways:

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

The Learning Specialist may:

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

D. Evaluation:

Is reflective of modified learning outcomes.