COURSE OUTLINE: CSD211 - JAVA I

Prepared: Fred Carella
Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	CSD211: JAVA I
Program Number: Name	2090: COMPUTER PROGRAMMER
Department:	COMPUTER STUDIES
Semesters/Terms:	20F
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.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	CSD102
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	CSD221
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**2090 - COMPUTER PROGRAMMER** VLO 1 Identify, analyze, develop, implement, verify and document the requirements for a computing environment. VLO 4 Implement robust computing system solutions through validation testing that aligns with industry best practices. VLO 6 Select and apply strategies for personal and professional development to enhance work performance. VLO 10 Cntribute to the development, documentation, implementation, maintenance and testing of software systems by using industry standard software development methodologies based on defined specifications and existing technologies/frameworks. VLO 11 Apply one or more programming paradigms such as, object-oriented, structured or functional programming, and design principles, as well as documented requirements, to the software development process.
Essential Employability Skills (EES) addressed in	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.

this course:	EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	The student must pass both the lab and test portions of the course. 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. 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.

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.

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.

Books and Required Resources:

Course Notes
Teacher supplied course notes

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
1. Write structured code in the Java programming environment	1.1 Describe the history of the Java programming environment. 1.2 Compare and contrast Java and C++. 1.3 Describe the components of a Java program including attributes and methods. 1.4 Describe the Java programming environment and the process of Java program development/execution. 1.5 Describe primitive Java data types. 1.6 Describe and apply knowledge of data scope. 1.7 Describe and apply various collection constructs such as arrays and lists. 1.8 Write programs with multiple methods that illustrate parameter passing and return of data. 1.9 Write and debug simple Java applications in command line and IDE environments. 1.10 Perform I/O using keyboard, screen and files. 1.11 Apply all of the above in the writing of programs.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Utilize the various control structures available in Java.	2.1 Define algorithm. 2.2 Describe the concepts of sequential execution and transfer of control using if and switch statements. 2.3 List and describe the looping structures available in Java including for , for each, while and do while constructs. 2.4 Write programs utilizing the control structures available with Java.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Write Java programs using objects.	3.1 Describe object and class and the relationship between them. 3.2 Describe and apply the use of constructors. 3.3 Create objects and access them via object reference variables. 3.4 Differentiate between object reference types and primitive data types. 3.5 Describe and apply the public, private and protected visibility modifiers.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Inheritance and polymorphism and other	4.1 Develop a subclass from a superclass through inheritance. 4.2 Invoke super class methods and constructors using the

	OOP constructs.	super keyword. 4.3 Distinguish and differentiate between the overloading and overriding of methods. 4.4 Understand and apply the concept of polymorphism. 4.5 Describe and apply casting. 4.6 Describe and apply the ArrayList collection class.
	Course Outcome 5	**Learning Objectives for Course Outcome 5**
	5. Abstract Classes and Interfaces.	5.1 Describe and apply abstract classes in the writing of java applications. 5.2 Describe and apply interfaces in the writing of java applications.
	Course Outcome 6	**Learning Objectives for Course Outcome 6**
	6. GUI Interfaces and Event Driven Programming	6.1 Create user interfaces using frames, panels, and Swing widgets. 6.2 Understand and apply layouts. 6.3 Understand event driven programs. 6.4 Understand and apply events, event listeners and event methods. 6.5 Write programs that deal with action events. 6.6 Write programs that deal with mouse events. 6.7 Understand and apply exceptions in the handling of errors. 6.8 Discover how I/O works in the java environment and write programs that read and write data and read and write objects to files.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Labs	40%
Tests	60%

Date: July 22, 2020

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.