Introduction to Programming - Java

Course Number:	CS 201	**Term:**	Summer, 2020
Instructor:		**Email:**	
Contact Hours:	48	**Meeting Times:**	Online
Credits:	3.0		

Course Description:

This course is an introduction to computer science and computer programming. The programming language used is Java and the topics covered include identifiers, basic data types, expressions, control statements, methods, arrays, objects, classes, inheritance, polymorphism, and simple graphical user interfaces.

Learning Objectives:

By the end of this course, all students will be able to:

- Develop Java programs using primitive types
- Use predefined classes in their programs such as Math, String and Random classes
- Read and understand Java programs that include multiple methods, control flow, arrays, and inheritance
- Develop Java programs with multiple classes and writing methods with control flow
- Develop Java programs applying object-oriented programming approach
- Understand the use of static methods and variables
- Understand searching and basic sorting algorithms

Required Textbook and Course Materials:

Text:	Java: An Introduction to Problem Solving and Programming
Author:	Walter Savitch
Edition:	8th or later
ISBN:	978013766264

Language of Instruction:

This course is taught entirely in English, including lectures, homework, assignments and examinations. Teaching assistants will be fluent in both English and Mandarin.

Course Prerequisites:

None

University Policies

Class Format

This is a fully-online course. All course activities, discussions, assignments and resources will be made available online prior to the start of the course.

Attendance, Participation and Deliverables

Summer courses are very intensive and in order to be successful, students need to attend every class. Attendance is required for all lectures and in class activities. Class participation and discussion are expected from every student and form a significant portion of the final course grade.

All course deliverables (homework assignments and tests) are due on time as assigned. This course includes *no* make-ups, postponements or additional assignments, except for verified medical emergencies. If you miss an exam/assignment due to a non-sanctioned absence, your score on that exam/assignment will be zero.

Academic Dishonesty

All cases of academic dishonesty will be diligently pursued. Academic dishonesty includes representing the work of another as one's own work or cheating by any means. Academic dishonesty also includes aiding, abetting, concealing or attempting such activity. The penalty is automatic failure of the course and possible suspension from the university.

Grading Scale

Grading Scale (%)

97 - 100	A+	77 – 79	C+
93 - 96	A	73 – 76	C
90 - 92	A-	70 – 72	C-
87 - 89	B+	67 – 69	D+
83 - 86	B	63 – 66	D
80 - 82	B-	60 – 62	D-
		0 - 59	F

Professor & Course Policies

Course Format

This course will cover the first nine chapters of the textbook. Your grade for this course will be based on ten programming assignments and two exams.

Assignments

Each of the programming assignments will have a due date. To receive full credit for an assignment, it must be turned in by the due date. When you complete a programming assignment you will turn in the source code for your solution

Grade Components:

Midterm Exam	20%
Final Exam	30%
Programming Assignments (10)	50%
Total	**100%**

ADDITIONAL POLICIES TBA

Tentative Course Schedule

Date	Topic
Week One	**Chapter 1 Introduction to Computers and Java** 1.1 COMPUTER BASICS 1.2 A SIP OF JAVA 1.3 PROGRAMMING BASICS 1.4 GRAPHICS SUPPLEMENT Programming Assignment #1 **Chapter 2 Basic Computation** 2.1 VARIABLES AND EXPRESSIONS 2.2 THE CLASS STRING 2.3 KEYBOARD AND SCREEN I/O 2.4 DOCUMENTATION AND STYLE 2.5 GRAPHICS SUPPLEMENT Programming Assignment #2
Week Two	**Chapter 3 Flow of Control: Branching** 3.1 THE IF-ELSE STATEMENT 3.2 THE TYPE BOOLEAN 3.3 THE SWITCH STATEMENT 3.4 GRAPHICS SUPPLEMENT Programming Assignment #3 **Chapter 4 Flow of Control: Loops** 4.1 JAVA LOOP STATEMENTS 4.2 PROGRAMMING WITH LOOPS 4.3 GRAPHICS SUPPLEMENT 5.1 CLASS AND METHOD DEFINITIONS 5.2 INFORMATION HIDING AND ENCAPSULATION 5.3 OBJECTS AND REFERENCES 5.4 GRAPHICS SUPPLEMENT Programming Assignment #4 **Midterm Exam**

Week Three	**Chapter 5 Defining Classes and Methods** 5.1 CLASS AND METHOD DEFINITIONS 5.2 INFORMATION HIDING AND ENCAPSULATION 5.3 OBJECTS AND REFERENCES 5.4 GRAPHICS SUPPLEMENT Programming Assignment #5 **Chapter 6 More About Objects and Methods** 6.1 CONSTRUCTORS 6.2 STATIC VARIABLES AND STATIC METHODS 6.3 WRITING METHODS 6.4 OVERLOADING 6.5 INFORMATION HIDING REVISITED 6.6 ENUMERATION AS A CLASS 6.7 PACKAGES 6.8 GRAPHICS SUPPLEMENT Programming Assignment #6
Week Four	**Chapter 7 Arrays** 7.1 ARRAY BASICS 7.2 ARRAYS IN CLASSES AND METHODS 7.3 PROGRAMMING WITH ARRAYS AND CLASSES 7.4 SORTING AND SEARCHING ARRAYS 7.5 MULTIDIMENSIONAL ARRAYS 7.6 GRAPHICS SUPPLEMENT Programming Assignment #7 **Chapter 8 Inheritance, Polymorphism, and Interfaces** 8.1 INHERITANCE BASICS 8.2 PROGRAMMING WITH INHERITANCE 8.3 POLYMORPHISM 8.4 INTERFACES AND ABSTRACT CLASSES 8.5 GRAPHICS SUPPLEMENT Programming Assignment #8 Programming Assignment #9
Week Five	**Chapter 9 Exception Handling** 9.1 BASIC EXCEPTION HANDLING 9.2 DEFINING YOUR OWN EXCEPTION CLASSES 9.3 MORE ABOUT EXCEPTION CLASSES **9.4** GRAPHICS SUPPLEMENT Programing Assignment #10 **Course Review** **Final Exam**