



## University of International Business and Economics International Summer School

### CS 320 Introduction to JAVA Programming

**Term: July 8 – August 2, 2019**

**Instructor: Dr. Xiangdong An, Assistant Professor of Computer Science**

**Home Institution: UT Martin**

**Email: xan@utm.edu**

**Class Hours: Monday through Friday, 120 minutes each day (2,400 minutes in total)**

**Office Hours: TBD**

**Discussion session: 2 hours each week**

**Total Contact Hours: 64 contact hours (45 minutes each, 48 hours in total)**

**Credit: 4 units**

#### **Course Description:**

This summer course is for international school, for undergraduate students. No prior programming experience is required. This course covers the fundamentals of algorithmic problem solving. The course emphasizes general programming methodology and concepts common to object-oriented and procedural programming languages: algorithms, top-down structured program design, modularity, efficiency, testing and debugging, and user-friendliness. The object-oriented paradigm is covered, including classes, objects, access control, abstraction, and encapsulation. Other topics include organization and hardware, input and output, subprogram units (methods), fundamental data types, reference types, control structures including conditions and iteration, and arrays.

#### **Course Goals:**

The goal of this course is to learn the fundamental problem solving techniques using Java Programming Language. Throughout this course, students are able to master the programming design, coding, compiling, and debugging skills. The course starts from very beginning, from the basic elements of programming until into high level programming methodology.

Upon completion of this course, students will be able to complete the following learning objectives:

- Identify the main programming features of the Java programming language.
- Write Java applications using primitive types, input, and output statements.

- Create interactive programs to input and process data to create acceptable output.
- Learn what classes, objects, methods, and instance variables are and how to declare and call them.
- Use the selection and repetition statements to execute statements in a program.
- Use the logical operators to form complex conditional expressions in control statements.
- Code programs to use method call/return mechanism, method overloading and Java API methods.
- Write programs to declare and use single and multidimensional arrays to store and retrieve data from lists and table of values.
- Use static and final variables to create class variable and methods.

**Required Textbook:**

Java Software Solutions (Foundations of Program Design); John Lewis, William Loftus; ISBN-13: 978-0-13-446202-8, ISBN-10: 0-13-44602-5

**Grading Policy:**

Final grades evaluations are determined by a weighted average of examinations, assignments, quizzes, labs, and class participation.

Your final grade in the course will be based on the following:

	Mid-term and Final-Exam		Percentage
Examination	Performance Test (writing codes)	Programming Knowledge Test  (multiple choices and true and false questions)	40%
	20%	20%	
Assignment	8 Programming Assignments (2 / week)		25%
LAB	Programming Practice (1 / each day)		25%
Quiz	1 quiz / week		5%
Participation	Class participation		5%

Total:	100%
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### Grading Scale:

Assignments and examinations will be graded according to the following grade scale:

<b>A</b>	90-100	<b>C+</b>	72-74
<b>A-</b>	85-89	<b>C</b>	68-71
<b>B+</b>	82-84	<b>C-</b>	64-67
<b>B</b>	78-81	<b>D</b>	60-63
<b>B-</b>	75-77	<b>F</b>	below 60

### Class Rules:

Require students to following the student rules of international school.

### Attendance Policy:

Students are expected to attend all regularly scheduled class meetings. Students are encouraged to tell their instructor in advance or to call the administrative office if they will be absent.

### Course Schedule:

Date	Topics	Assignment
Day 1	Introduction to computers, programs and java	
Day 2	Variables, constant variable, Primitive data type, Arithmetic operators, and escape sequences.	Hw1
Day 3	Assignment Operator, Operator precedence, Reading Input(Scanner class and methods)	
Day 4	Selection Structure (if and if else), Relational operators	
Day 5	Selection Structure(if... elseif... else, and switch statment), Logical operators	Hw2
Day 6	Introduction to repetition structure, while loop.	
Day 7	for loop and do... while loop.	Hw3
Day 8	Random number generation, and nested loop	
Day 9	File I/O (input and output)	Hw4
Day 10	Mid-term Exam	
Day 11	Introduction to object-oriented programming	

Day 12	Creating classes and objects, set and get method	Hw5
Day 13	Object references, and access modifier	
Day 14	Method call/return mechanism, method overloading	Hw6
Day 15	Constructor and constructor overload, abstraction, and encapsulation	
Day 16	Static field and method, Java API methods	Hw7
Day 17	Single dimensional array	
Day 18	Two dimensional array	Hw8
Day 19	Passing array to the methods, Array list	
Day 20	Final exam	