



# HANYANG UNIVERSITY

## 2018 HISS Syllabus

### Introduction to Computer Science

Professor: **Jongyeop Kim**  
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Home Univ.: Southern Arkansas University  
Dept.: Math & Computer Science

Description: Introductory course in JAVA using object-oriented programming concepts. The course includes methods, basic control structures, files, single arrays, 2D arrays and Graphical User Interface Applications. This course uses a combination of lectures and hands-on lab exercises to enhance programming skills. Hands-on Lab exercise will be solved within the class through group discussion or direct conversation with the instructor.

Objective: Upon completion of this course, the student will be able to:  
1. Apply algorithmic thinking to programming logic design.  
2. Write, and debug computer programming using JAVA programming Language.  
3. Identify and implement arrays, array lists, and 2D arrays.  
4. Write JAVA programs using object oriented techniques.

Preparations: 1. Computer: **Must bring a laptop computer for hands-on Exercise.**  
2. e-book: Introduction to Programming using JAVA(7th Edition): <http://math.hws.edu/javanotes>  
Text: Java for Everyone Late Object Second Edition(Cay Horstmann): optional  
3. Anyone who has basic knowledge of computer encourage to attend.

Schedule:

Week 1	<Lectures> 1. Introduction - The java programming language. 2. Fundamental Data Types - Variables, Arithmetic operators. 3. Decision statements - The "if" Statement, Comparing. <Labs> 1. Basic Debugging - Program compile, Run and debugging. 2. Filling codes - Performs various math functions. 3. If statement - Basic form of simple "if" statement.
Week 2	<Lectures> 4. Loops - Loop statements that repeatedly execute instructions. 5. Methods - Implementing, Parameter passing, Return values. 6. Arrays and Array Lists - Declaring an Array, Accessing Array elements. <Labs> 4. While Loops - File I/O and while loop implementation. 5. Loops and Methods - Way to organize and encapsulate code. 6. Working with Arrays - Create an array, put and get values from it. <b>Midterm Exam (July 11, Thu).</b>

#### Hanyang International Summer School

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Week 3	<p>&lt;Lectures&gt;</p> <p>7. Input/Output and Exception handling.</p> <p>8. Object and Classes (1) - Object oriented programming, Constructors.</p> <p>9. Object and Classes (2) - Testing a class, Object References.</p> <p>10. Inheritance and Interfaces – Overriding methods, Polymorphism.</p> <p>&lt;Labs&gt;</p> <p>7. Methods and Nested While Loops.</p> <p>8. Two Dimensional Arrays - Declaring 2D arrays, Ragged Arrays.</p> <p>9. Array List - Array List and Hashmaps.</p> <p>10. Programming Project - 2.</p>
Week 4	<p>&lt;Lectures&gt;</p> <p>11. Graphical User Interface (1) - Event and event handling.</p> <p>12. Graphical User Interface (2) - Processing Text Input.</p> <p>&lt;Labs&gt;</p> <p>11. Objects Oriented - Creating constructor, Accessor and mutator methods.</p> <p>12. Programming Project - 3.</p> <p>13. Graphical User Interface - GUI programming with “swing” library.</p> <p><b>Final Exam (July 25, Wed).</b></p>

	Midterm (%)	Final (%)	Attendance (%)	Lab Exercise (%)	Participation (%)	Etc. (%)
Evaluation:	20	20	10	35	10	5