



Course Syllabus

CS-22: Programming in JAVA

Summer, 2017

Instructor: Orkun Karabasoglu, PhD
Webpage: www.karabasoglu.com
Course Time: Monday to Friday: 8.30am-10.30am

Teaching Assistant: TBD
Email: TBD



Mastery in Java Programming will give you superpowers to turn your imagination into real products and services which can change the world.

Course Hours

The course has 20 lectures and 8 seminars/exercise classes in total. Each class session is 120 minutes in length. The course meets from Monday to Friday. Each course has a total of 56 class hours (4 credit hours).

Course Description

This course aims to provide students with an introductory understanding of modern programming techniques, skills and issues, in the context of scientific, engineering, and commercial applications. The course uses the Java programming language to achieve this aim. More specifically, the objectives of this course are:

- To introduce students to basic concepts, principles, and applications of computing.
- To learn the fundamentals of Object-Oriented Programming
- To get skilled in computer programming in Java.
- To develop basic software development skills.
- Mastery in Java programming language will give you superpowers to turn your imagination into reality (any form of software, engineering product or service)

Course Objectives

After this course, students should be able to:

- solve real-world problems by designing and developing Java programs,
- extend their programming skills to learn other programming languages,
- use tools and techniques that facilitate software development,
- comprehend, appreciate and debate various issues that arise in computing, and
- use and apply their knowledge of programming in other areas (e.g., in future courses and projects). This is an intensive but rewarding course - you work hard, but learn a lot and gain considerable experience!

Pre-requisites: No requirement. No prior experience in programming is assumed. Suitable for any student with any background.

Suggested Textbook

Introduction to Programming in Java: An Interdisciplinary Approach
Robert Sedgewick and Kevin Wayne
Publisher: Addison-Wesley, 2007.



Computer Requirements

All students must have a modern laptop computer– Windows 7, Mac, Linux – that can run the Java Platform, Standard Edition Development Kit (JDK 7). **Students must bring their laptop (fully charged) to each class.**

Classroom Policy

All cellular phones must be turned off and stored before entering the classroom. Computers shall be used during class time for learning purposes only. Any personal use of computers, unless authorized by the instructor, is unacceptable.

Attendance Policy

Class attendance is mandatory. Attendance will be taken.

Grading policy

Attendance: 5 %

Quizzes: 10 %

Assignments: 10%

Midterm 1: 25 %

Midterm 2: 25 %

Final: 25 %

Course Topics

- Elements of Programming
- Built-In Types of Data
- Conditionals and Loops
- Arrays
- Input and Output
- Functions and Modules
- Static Methods
- Libraries and Clients
- Recursion
- Object-oriented Programming and Data Types
- Performance
- Sorting & Searching
- Stacks & Queues

Tentative Course Calendar

Monday - Friday 8:30 - 10:30

Date	Day	Class Activity	Assignment Schedule
July			
13	THU	Lecture 1: Introduction to Programming and JAVA, Your First Program	
14	FRI	Lecture 2: Java Data Types	HW 1 out



17	MON	Lecture 3: Conditional and loops-1	
18	TUE	Lecture 4: Conditional and loops-2	HW 2 out, HW 1 in, Quiz 1
19	WED	Lecture 5: Arrays	
20	THU	Lecture 6: Input and Outputs-1	HW 3 out, HW 2 in
21	FRI	Lecture 7: Input and Outputs-2	
24	MON	Lecture 8: In-class coding performance	HW 4 out, HW 3 in, First Midterm
25	TUE	Lecture 9: Functions and Modules	
26	WED	Lecture 10: Static Methods Libraries and Clients	HW5 out, HW 4 in
27	THU	Lecture 11: Recursion	
28	FRI	Lecture 12: Data Types	HW6 out, HW 5 in, Quiz 2
31	MON	Lecture 13: Creating Data Types	HW6 in
August			
1	TUE	Lecture 14: Designing Data Types	
2	WED	Lecture 15: In-class coding performance	HW 7 out
3	THU	Lecture 16: Algorithms and Data Structures: Performance	Second Midterm
4	FRI	Lecture 17: Sorting and Searching (1)	HW 7 in
7	MON	Lecture 18: Sorting and Searching (2)	
8	TUE	Lecture 19: In-class coding performance	Final Exam
9	WED	Lecture 20: Stacks and Queues and Symbol Tables	

Online Coaching Sessions:

1. Course instructor arranged research assistant to be available for online coaching sessions. His TA will answer questions and help with coding almost every day during the course.

Code of Academic Integrity:

You must familiarize yourself with the Code of Academic Integrity in the Beijing Jiaotong University. It is your responsibility to ensure your behavior does not violate this code. You must observe the policies regarding various forms of academic



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dishonesty. The following statement about academic dishonesty has been provided by the Beijing Jiaotong University, “Activities that have the effect or intention of interfering with education, pursuit of knowledge, or fair evaluation of a student’s performance are prohibited.” Academic dishonesty will not be tolerated and may be handled by the Office of Student Conduct.

Inappropriate activity during exams (e.g., consulting other students) may result in a zero on the exam and will be submitted to the Office of Student Conduct. As a student in this course, you will be held accountable for your actions.