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## **ar594    *Programming Fundamentals for Computational Design***

*Sayısal Tasarım için Temel Programlama*

Fall 2024

Prof. Dr. Mustafa Emre İlal

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Class hours:    Thursday 14:30-17:15

Classroom:    A209

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### **COURSE DESCRIPTION**

This semester the course will aim to prepare architecture students with no prior programming experience to advanced computing courses at a fast pace. Object oriented programming principles that form the basis of almost all new software development efforts within the AEC industry are explained together with basic programming techniques. Stress is put on the fact that good design is as important as good implementation. Java is the language of choice.

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### **GRADING**

Assignments: %30

Midterm:        %20

Project:        %50

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### **RESOURCES**

- **Programming Essentials using Java**, William McAllister and S. Jane Fritz; Mercury Learning and Information (ISBN 9781683920373)
- **Head First Java**, Kathy Sierra, Bert Bates; O'Reilly Media (ISBN 9780596009205)
- **Thinking in Java 3rd Edition**, Bruce Eckel; Prentice Hall PTR (ISBN 0130273635)
- **Learning Java**, Fourth Edition, Patrick Niemeyer and Daniel Leuck, O'Reilly (Online at: <http://chimera.labs.oreilly.com/books/1234000001805>)
- **Java How to Program**, Harvey M. Deitel, Paul J. Deitel; Prentice Hall (ISBN 0131016210)
- **The Introduction to Object-Oriented Programming**, Timothy Budd, Timothy A. Budd; Addison-Wesley Pub. Co. (ISBN 0201760312)
- **Java: First Contact**, Roger Garside, John Mariani; Course Technology (ISBN 185032316X)
- **Java In A Nutshell**, David Flanagan; O'Reilly & Associates Inc. (ISBN 0596002831).

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## SCHEDULE

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Week	Day	Topics	Notes
1	*	Programming and architecture	
2	*	Object oriented design	
3	*	Variables – types - operators	
4	*	“Hello World” application	
5	*	Flow control-decision making, loops	
6	*	Strings	
7	*	Utilizing APIs	
8	*	Midterm	
9	*	Interfaces and Exceptions	
10	*	File system – Input/Output	
11	*	Data structures	
12	*	Graphical user interfaces	
13	*	Project Reviews	
14	*	Project Presentations	

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