



**TURKISH REPUBLIC**  
**FIRAT UNIVERSITY**  
**COLLEGE OF TECHNOLOGY**  
**DEPARTMENT OF SOFTWARE**  
**ENGINEERING**

**COURSE SYLLABUS**  
**YMT554**  
**Optimization Methods-1**

**Fall 2015**

**Location:** TBD

**Class meeting times**

Tuesday 13:15 – 16:00

**Instructor**

Dr. Bilal Alatas

**E-mail**

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**Phone:**

(424)-2370000-4303

**Course description:** This course covers theory and applications for optimization in engineering design.

**Course objectives:** Optimization methods are fundamentally important in engineering. The state of the art in this topic has emerged matured and well-established algorithms that can be applied to solve problems efficiently.

This course is concerned with:

- a) optimization introduction
- b) mathematical modeling
- c) one-dimensional search methods
- d) unconstrained optimization
- e) linear optimization
- f) discrete optimization
- g) constrained nonlinear optimization

Upon successful completion of this course, the student will be able to understand:

- a) basic theoretical principles in optimization;
- b) formulation of optimization models;
- c) solution methods in optimization;
- d) methods of sensitivity analysis and post processing of results
- e) applications to a wide range of engineering problems

**Prerequisite:**

No



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**Textbook:** I. Griva, S. Nash, and A. Sofer, Linear and Nonlinear Optimization, 2nd Edition, Society for Industrial and Applied Mathematics, 2009.

**Course requirements:**

**Assignments:** Students will be required to complete two search and programming assignments. Students will be given 6 weeks to complete each assignment.

**Exams:** Two exams, including the final exam, will be given. Students will be given at least one week's notice of the exam dates. All examinations are written examinations. There are no make-up examinations available for any student. If a student has an excused absence exam, the University Regulation will be applied.

Grading plan:	Assignments	20%
	First exam	20%
	Final exam	60%

$\geq 90$	$\Rightarrow$	A
$\geq 80$ but $< 90$	$\Rightarrow$	B
$\geq 70$ but $< 80$	$\Rightarrow$	C
$\geq 60$ but $< 70$	$\Rightarrow$	D
$< 60$	$\Rightarrow$	F

**Class participation:** In accordance with the university policy, regular attendance is required; however, no points will be awarded or subtracted based on your attendance. You are responsible for all material covered in every class, regardless of whether you attended or not. It is your responsibility to obtain notes, assignments, etc., from fellow class members if you miss the class.

**Academic dishonesty:** All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The university and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.



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No cheating on an examination or assignments is allowed; a score of zero will be given to the student if such a case occurred.

**Rules of conduct:** Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Please turn off or mute your cellular phone and/or pager before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking among each other at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a, minimally, a directive to leave class or being reported to the Dean of Students for disciplinary action in accordance with university policy.