



TURKISH REPUBLIC
FIRAT UNIVERSITY
COLLEGE OF TECHNOLOGY
DEPARTMENT OF SOFTWARE ENGINEERING

COURSE SYLLABUS
SENG 584 Advanced Algorithms Analysis

Location: Lecture and Lab: Software Engineering Building

| Class meeting times: | Lab meeting time: | Instructor: | Teaching Assistant |
|-----------------------------|--------------------------|----------------------------------|---------------------------|
| | | Assoc. Prof. Erkan Tanyıldızı | |

Office hours: Please see the notice board outside each faculty member's office.

Course description: This course introduces students to the advanced algorithm design strategies for solving complex problems. The students will gain the ability of choosing appropriate algorithms to solve problems or propose new algorithms enabling adequate knowledge and experience for analyze algorithms.

Course objectives: After taking this course, students will have the following working knowledge:

- concept of an algorithm, digital systems and basic computational techniques,
- clustering theory,
- number theory and algorithms,
- graph algorithms,
- basic sorting algorithms,
- maze problems,
- geometric algorithms,
- structures for partly solutions,
- linear programming,
- dynamic programming

IDEA objectives: Gaining factual knowledge (terminology, classifications, methods, trends), and learning how to apply the course material (to improve thinking, problem solving, and decision).

Prerequisite: Prerequisites: Eligibility for YMT 111 Algorithm and Programming I, and PC skills.



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Textbook: *Introduction to Algorithms*, Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein. Publisher: The MIT Press, September 2001 Second Edition.

Course requirements:

Assignments: Students will be required to complete five programming assignments. Students will be given two weeks to complete each assignment. Four of the assignments will count towards the final grade, giving student the option to drop their lowest graded assignment.

Exams: Three exams, including the final exam, will be given. Students will be given at least one week notice of the exam dates. All examinations are written examinations and students are required to provide their own answer sheets for each exam. There are no make-up examinations available for any student except the regulation rules.

Labs: All students need to join the lab section. Students will have total of 11 labs. The labs should be finished within the dedicated time slot. Each work needs to be checked and graded by the Lab TA. If the student is not able to finish the task within the lab session due to an unexpected event/bug/etc., he/she may ask the lab TA to have an extension of one week at the end of the lab.

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|---------------|-------------|-----|
| Grading plan: | Assignments | 10% |
| | First exam | 10% |
| | Second exam | 10% |
| | Lab | 10% |
| | Final exam | 60% |

| | | |
|----------------------|---------------|---|
| ≥ 90 | \Rightarrow | A |
| ≥ 80 but < 90 | \Rightarrow | B |
| ≥ 70 but < 80 | \Rightarrow | C |
| ≥ 60 but < 70 | \Rightarrow | D |
| < 60 | \Rightarrow | F |



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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. 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 the university policy.

Visitors in the classroom

Occasion visiting of classes by responsible individuals is allowed with prior arrangement with the instructor, as long as it does not interfere with the registered members of the class or the educational process.