Cankaya University
Faculty of Engineering
Mechanical Engineering Department

ME 611 Advanced Conduction Heat Transfer
Course Policy
Fall 2018

Prof.Dr.Nevzat Onur

Course Objective:

This a course on physical principles of heat conduction. Student will acquire fundamental understanding and skill in the mathematical formulation, solution and analysis of conduction heat transfer problems. To develop the necessary ability to carry out independent critical study, read and understand advanced scholarly and technical literature in the field and to create viable and effective proposals for the solution of real-world heat conduction problems.

Course Material

The course covers the formulation of the heat conduction problems in various coordinate systems and the development of analytical and numerical solution methods for steady and transient one- and multidimensional heat conduction problems. Analytical methods covered include fundamental solutions, separation of variables, Duhamel, Laplace and Integral transform methods and approximate integral methods. Numerical solutions will be obtained using finite difference and finite volume methods. Each student will present a term project.

Course Format

The format of the class consists of lectures, in-class exercises, homework assignments, reading and research assignments, computer laboratory assignments and student presentations. Students must quickly become familiar with the Matlab ,Maple and Fortran programming language**.**

Homework Assignments

Weekly homework will be assigned to reinforce and expand understanding of the material covered in class.

Text Book:

Heat Conduction
Y.Yener and S.Kakac
Taylor and Francis

Reading Assignments
Students will be responsible for reading through and understanding the course textbook in its entirety. Additional readings will be assigned to cover selected special topics or to expand coverage beyond what it is found in the textbook.

Exam
There will be a midterm and a comprehensive final exam.. Exam questions will be similar in form and style to questions asked during in-class exercises and in homework assignments. The likelihood of successful performance in the exam will be significantly increased by sustained, dedicated work by the students on the classwork homework and readings.

Grading
Grading will be assigned according to the following scheme.
Midterm: 30 percent
Homework 20 percent
Final Exam : 50 percent

Office Hours
By appointment only.

Code of Ethics
Ethical and professional conduct is expected from everyone. Violations of this code such as academic dishonesty, misrepresentation and plagiarism will not be tolerated. Failing grades will be assigned to any student who is found to engage or participate in unethical behavior.