

LÜTFEN DUYURU TAHTASINA ASINIZ

KADİR HAS UNIVERSITY
Faculty of Engineering & Natural Sciences - Fall Semestre 2017

CH 201: Materials Science

Tuesdays 15:00 - 17:00 Room:

First class: Tuesday 19 September

Office

Phone

Office Hour*

A. Nihat Berker Dekanlık 212-533-6386 Mon 16:00-17:00

nihatberker@khas.edu.tr, anberker@mit.edu

*Office consultation can also be done on drop-in basis
or by appointment. Do call me!

<http://webprs.khas.edu.tr/~nberker/>, <http://web.mit.edu/physics/berker>

Students and listeners, from KHU and from other Universities, are welcome.

Students successfully completing the course may be given an original research problem.

Text: **Principles of Materials Science and Engineering, William F. Smith, 3rd Ed, McGraw-Hill (2004)**

1. Introduction to Materials Science and Engineering
2. Atomic Structure and Bonding
3. Crystal Structure and Crystal Geometry
4. Solidification, Crystalline Imperfections, and Diffusion in Solids
5. Electrical Properties of Materials
6. Mechanical Properties of Metals
7. Polymeric Materials
8. Phase Diagrams and Renormalization-Group Theory
9. Engineering Alloys
10. Ceramic Materials
11. Magnetic Materials
12. Corrosion
13. Composite Materials
14. Optical Properties, Superconducting Materials, Bardeen-Cooper-Schrieffer Theory
15. Fractal Structures (Non-Integer Spatial Dimensions) in Materials

Grades: weekly quizzes 40%; midterm 20%; final 40%.