MASC 310 – Materials Behavior and Processing

Fall, 2015

Materials Behavior and Processing is intended for undergraduate engineering students from all engineering disciplines. The subject of materials is broad, and encompasses metals, ceramics, polymers, composites, and semiconductors. The course covers fundamental concepts underlying the behavior and manufacture of engineering materials. The course employs an integrated approach that stresses concepts that are applicable to all materials. The structure of the course primarily follows the text by Callister, which provides a bottom up introduction to materials science incorporating fundamentals, microstructure development, properties, and manufacturing. Supplemental texts and electronic resources are utilized to highlight specific concepts. The course culminates with a focus on the selection of materials and processes for engineering design. This topic will be covered in lecture, and will also provide the basis for a final project.

A Blackboard website for the course provides assignments, solutions, supplemental readings, and a schedule of lectures.

Grading	
Homework	15%
Midterm 1	20%
Midterm 2	20%
Project	15%
Final exam	30%

Homework Policy: Weekly homework assignments are due at the beginning of class. HW's are considered late if received later than the start of class, and will be penalized 30%. HW's will not be accepted after 24 hours past the due date and time.

Text: **Fundamentals of Materials Science and Engineering: An Integrated Approach**, 4th edition, William D. Callister, 2011 ISBN: 9781118061602

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Office hours:
Office hours with TA's every week

Statement on academic conduct and support systems

Academic Conduct
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please

familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/ . Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/ . Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu/ or to the *Department of Public Safety* http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource

Support Systems
A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali , which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information http://emergency.usc.edu/* will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.