MSE 480 Course Syllabus

A. Course Details

Title: MSE 480 Materials Selection in Design

A.1. Meeting Details

- Meeting Place: Ferris Hall 502
- Meeting Time: Monday at 1:50 pm - 5:00 pm

A.2. Instructors:

Course Organizer, Lecturer for first half of the semester

- Prof. David Keffer, room 301 Ferris Hall, dkeffer@utk.edu

Individual Team Faculty Mentors

- Prof. David Harper, dharper4@utk.edu
- Prof. Bin Hu, bhu@utk.edu
- Prof. Eric Lass, elass@utk.edu
- Prof. Peter Liaw, pliaw@utk.edu
- Prof. Kate Page, kpage10@utk.edu

Laboratory Manager

- Dr. Jerry Egeland, gegeland@utk.edu

Teaching Assistant

- Jacob Morton, jmorto27@vols.utk.edu

A.3. Course Material

Required Textbook:

- Materials Selection in Mechanical Design, M. F. Ashby, 5th Edition. Butterworth-Heinemann, Elsevier, 2017.

Required Software:

- Granta EduPack
- Software license paid for by the MSE department

Course Website:

- http://utkstair.org/clausius/docs/mse480/index.html

A.4. Catalog Description

MSE 480 - Materials Selection in Design
3 Credit Hours
Systematic materials selection in design. Review of material properties. Use of property selection charts and indices. Materials selection with and without shape constraints.

Materials processing in design. Case studies. Sources of material property data, utilization of material data bases. Industrial design, aesthetics, economics, regulations, forces for changes.

(RE) Prerequisite(s): MSE 201 or MSE 207.
Registration Restriction(s): Minimum student level – junior.

B. Course Objectives:

The objectives of this course are provided in a separate document located at

- http://utkstair.org/clausius/docs/mse480/pdf/objectives.pdf

C. Grading Policy

C.1. Grade Breakdown

Assignment	Percentage of Course Grade
● Case Study Oral Presentation	10%
● Case Study Written Report	10%
● Midterm Exam	20%
● Project Oral Presentation (Review of Literature & Plan/Approach)	20%
● Project Written Report (Review of Literature & Plan/Approach)	20%
● Individual Participation Grade (faculty mentor evaluation[§])	10%
● Individual Participation Grade (peer evaluation[§§])	10%
● Total	100%

[§]At the end of the semester, all faculty mentors will submit a final evaluation of each of the students in their group and this evaluation will be included in the course grade.
[§§]At the end of the semester, all senior design students will submit a final peer evaluation for each of the other students in their group and this evaluation will be included in the course grade.

C.2. Course Grades

Course grades will be assigned on the following basis:

90.0 - 100.0	A
85.0 - 89.99	B+
80.0 - 84.99	B
75.0 - 79.99	C+
70.0 - 74.99	C
60.0 - 69.99	D
00.0 - 59.99	F

This course grade basis may (at the instructor's discretion) be shifted uniformly down, should the overall performance of the class require it. This course grade basis will not be shifted up. (That is, if an exam proves to be too hard and the average is low, an 89% may make an A. However, if an exam proves to be too easy and the average is high, a 90% will always make an A.)

C.3. Grading Procedures

In the table below, the responsible party for determining the grade is provided.

Assignment	Grade Determined By
● Case Study Oral Presentation	course instructor
● Case Study Written Report	course instructor
● Midterm Exam	course instructor
● Project Oral Presentation (Review of Literature & Plan/Approach)	course instructor with input from team faculty mentors
● Project Written Report (Review of Literature & Plan/Approach)	course instructor with input from team faculty mentors
● Individual Participation Grade (faculty mentor evaluation[§])	team faculty mentors
● Individual Participation Grade (peer evaluation[§§])	team members

D. Continuing Education Requirement

Students enrolled in MSE 301 are required to participate in five extracurricular continuing education opportunities. This requirement encourages student to adopt the habits of lifelong learning, essential to their success as engineers. Failure to complete this requirement will result in the student receiving an "Incomplete" in the course. The "Continuing Education Form" is located on the course website.

E. Getting Help

The course organizer is here to help you successfully complete this course. If you begin to encounter a problem, you are encouraged to seek out the instructor before it becomes a disaster. Extra-effort will be made to meet with students who regularly attend lecture.

The best way to contact the instructor is via email. To guarantee that the email is read promptly, make the subject of the email "MSE 480" Emails with the subject "Help Me!" or similar subjects are identified as spam and deleted without being opened.

F. Course Schedule:

The schedule for this course is provided in a separate document located at

http://utkstair.org/clausius/docs/mse480/pdf/schedule.pdf