Materials Science and Engineering MTSE 1100 Discover How and Why Materials Matter

Instructor: Rick Reidy Fall 2015

D108 Discovery Park Time: MWF 1:30-2:20pm

Office Hours: MWF 2:30-3:30pm Meeting Place: B142

Phone: 940-369-7115 Cell:940-390-5675

Email: [reidy@unt.edu](mailto:reidy@unt.edu)

Course Description:

This course serves as the heart of the MTSE first year experience. Topics include; rationale for materials choices; composition and design of everyday items; how materials science and engineering drives innovation; and basic analysis and experimental design. A team-based hands-on project teaches the student to think critically and creatively by applying a range of analysis techniques borrowed from many engineering and science disciplines.

Course Objectives

*By the end of the course, you be able to:*

* Formulate an approach to a technical problem through hypothesis testing
* Write technical and descriptive analysis of technical and literary readings
* Interpret, analyze, and present data
* Work in teams on a common project

Course Requirements:

Attendance is expected for each class. This is a crucial part of your grade.

Required Textbook**:**

Class notes will provided by the instructor. Flatland by Edwin Abbott will be provided by the instructor and read in class.

Grading:

Daily assignments and attendance 80%, and group project 20%.

* Attendance: Just showing up will not constitute attendance —you must participate in daily activities. Anyone more than 10 minutes late will be considered absent for that day. However, do not compound the issue by not attending at all as you can get a zero on a daily assignment. Excused absences are at the instructor’s discretion, so text or email me before class if you will be late or absent. Missing the bus is not an excuse unless there is a related issue. The last bus (to be on time) leaves for Discovery Park from GAB at 1:15pm MWF. More than 4 unexcused absences will lead to a drop in one letter grade.
* Daily assignments are due by the end of class and full credit will be given for all who participate in that activity (based on the instructor’s assessment). There will be no makeup of daily assignments without a doctor’s note or prior notification. Any makeup must be completed before the next class meeting. Allowances will be made for illnesses spanning several class days.

**Grade Assignments**

90-100 A

80-89 B

70-79 C

60-69 D

<60 F

**Disabilities Accommodation:**

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.

Additional Policies and Procedures:

Cell Phones: Please remember to turn off phones prior to class. Texting in class will be considered an absence and/or a lack of participation in an assignment.

Selected Course Topics:

* Resources for success at UNT
* Read Flatland (provided by the instructor), discuss satirizing of Victorian England , how art and science parallel, issues of geometric point of view (dimensionally and scale)
* Limits of measurement based on dimension
* interpretation of data
* materials development in civilization, posit “what if” scenarios regarding materials development
* errors in experimentation
* posing a “good” experimental question
* analysis of materials issues in household items
* how size matters in materials
* what are the limits in materials development?