

MTSE 5210
CORROSION AND OXIDATION OF MATERIALS

Time: T-Th 1 - 2:20pm

Instructors:

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This class is team taught: Dr. Reidy will teach oxidation and Dr. Mukherjee will teach corrosion. Each section will have an exam and assignments. Oxidation will have both an oral and written exam as well as in-class assignments. Corrosion will have a mid-term and a final exam.

Course assignments: Exams: (1) oxidation: written-- 37.5% and oral-- 12.5% each; (2) corrosion: mid-term --20% and final -- 30%

Suggested textbook: Corrosion Engineering, Mars Fontana, 1986

Course Topics:

- Oxidation Mechanisms
 - Oxidation of Pure Metals
 - Oxidation of Alloys, Mixed Environments,
 - Hot Corrosion
 - Thermal Oxidation of Silicon, Corrosion of Ceramics
 - Corrosion definitions, basic electrochemical principles in corrosion
 - Forms of Corrosion: uniform, galvanic, crevice, pitting, inter-granular, leaching, erosion, stress and hydrogen
 - Corrosion Testing, Corrosion of Materials-- metals, polymers and ceramics
 - Corrosion Prevention
 - Corrosion Environments and Corrosion Theory
 - Etching in semiconductor processing
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- **Attendance is expected for each class. If you are unable to make a class, please let me know, so that I do not wait for you.**
 - **Difficulties with exam dates must be addressed by the Friday before the assigned date.**
 - **If this method is inconclusive, the median will be used to separate A's and B's. Course averages 2 standard deviations below the median will receive a C.**

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.