Fall 2008
ENGR 200: Materials of Engineering (3 units)

1. **Course Description:** Application of basic principles of physics and chemistry to engineering materials; their structures and properties and the means by which these materials can be made of better services to all fields of engineering. Class work: 2 units. Lab: 1 unit.

2. **Instructor:**

   Kwok-Siong Teh, PhD
   School of Engineering, SCI 124
   San Francisco State University
   1600 Holloway Avenue, San Francisco, CA 94132
   Tel: 415-405-4168, Fax: 415-338-0525
   ksteh@sfsu.edu

3. **Course Webpage:** http://online.sfsu.edu/~ksteh/engr200.html

4. **Office Hours:** MW 2-3.30pm and by appointment (via email)

5. **Course Schedule & Locations:**

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Lab 01</th>
<th>Lab 02</th>
<th>Lab 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW</td>
<td>Tu</td>
<td>Tu</td>
<td>Th</td>
</tr>
<tr>
<td>12.10-1.00pm</td>
<td>9.35-12.20pm</td>
<td>2.10-4.55pm</td>
<td>2.10-4.55pm</td>
</tr>
<tr>
<td>HH 543</td>
<td>SCI 164</td>
<td>SCI 164</td>
<td>SCI 164</td>
</tr>
</tbody>
</table>

6. **Required Text:**

   
   *Note: Two copies of this textbook are on reserve in the library reserve room.*

   (2) Handouts distributed in class or electronically.

7. **Reference Texts:**


8. **Prerequisite Course:** CHEM 115 (General Chemistry I), and preferably Physics 220 & Calculus.

9. **Important Dates:**

   - 9/9/2008…… Last day to add w/ permit number (distributed by me)
   - 9/23/2008…… Last day to add/drop
   - 11/21/2008…… Last day to withdraw w/o documentation
   - 12/15/2008…… Last day of class

10. **Success Factors:**

    - Homework 10%
    - Midterm Exam 1 20%
    - Midterm Exam 2 20%
    - Final Exam 20%
    - Laboratory 20%
    - Team Project 10%
12. **Evaluation Notes:**

(a) **Homework:** Assigned and due weekly at the beginning of Wednesdays’ lectures. The lowest score homework will be dropped.

(b) **Laboratory:** Lab attendance is mandatory. Lab reports are due on designated dates. Late work is not accepted. Each student is responsible for his/her own report.

(c) **Team Project:** Teams of 3 persons will work on a “materials-related project”. An oral presentation and a final report are required. Grade is assigned for the whole team, but each team member has a chance to rate his/her teammates at the end.

(d) **Exams:** In-class, open-book, open-notes. No make-up exam and no incomplete grades are assigned.

(e) **Plagiarism/Cheating:** Any form of plagiarism and/or cheating, once discovered, will result in a letter grade F with immediate effect.

13. **Grades Distribution:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
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<tr>
<td>B-</td>
<td>80-82</td>
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<tr>
<td>C+</td>
<td>77-79</td>
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<td>67-69</td>
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<td>D</td>
<td>63-66</td>
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<tr>
<td>D-</td>
<td>60-62</td>
</tr>
<tr>
<td>F</td>
<td>Below 60</td>
</tr>
</tbody>
</table>

14. **Performance Criteria:**

*Objective 1:*
1. The student will demonstrate an ability to describe and solve problems on atomic arrangements, geometry of imperfections, and atomic diffusion in solids. [1, 2, 3]
2. The student will demonstrate an ability to describe and solve problems on mechanical and electrical behavior of materials. [1, 2, 3]
3. The student will demonstrate an ability to submit homework solutions in proper engineering format. [3]

*Objective 2:*
1. The student will demonstrate an ability to describe and solve problems on the distinguishing properties of metals, polymers, and ceramics. [1, 2, 3]
2. The student will demonstrate a familiarity with the effects of thermal, mechanical, and chemical treatments on properties. [1, 2, 3]

*Objective 3:*
1. The student will demonstrate an ability to experimentally determine mechanical and electrical properties of materials. [4]
2. The student will demonstrate an ability to make oral presentations and write a technical report. [4]

15. **Disability Accommodations:**

Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (http://www.sfsu.edu/~dprc/welcome.html) is available to facilitate the reasonable accommodations process. The DPRC, located in SSB 110, can be reached by telephone at 338-2724 (voice/TTY) or by e-mail at dprc@sfsu.edu.