

Materials Science MASC 110L

Spring 2013

Edward Goo
602 VHE

Phone: 213 740-4426 I generally check my voice mail only once a day when I am on campus so this is not the best method for contacting me for a quick response.

E-mail: ekgoo@usc.edu E-mail is the preferred method of communication. Please put "MASC 110L" in the subject of the e-mail or I may mistake it for junk e-mail. It is also best to use your USC e-mail account to send e-mail to me since I will read all e-mails from an USC account. Request for confidential information such as grades must be from USC account.

Office Hours: Wednesday 12:00-2:00 pm or by appointment. It is advised that you e-mail me to make an appointment even if you are coming during office hours. I am also available to meet with students immediately after the lecture.

Class Website: Log on to Blackboard at <https://blackboard.usc.edu>

Course Syllabus

| Topic | Reading in Masterton |
|---|-----------------------|
| 1. Introduction | |
| 2. Atoms and Molecules | Chapters 2, 3, and 19 |
| 3. Atomic bonds | Chapter 6 |
| 4. Gases | Chapter 5 |
| 5. Liquids and Solids | Chapter 9 |
| 6. Solutions | Chapter 10 |
| 7. Chemical reactions, equilibrium and kinetics | Chapters 11 and 12 |
| 8. Crystals, crystal defects and symmetry | Chapter 9 |
| 9. Thermodynamics | Chapter 8 and 17 |
| 10. Materials Science – Metals, Ceramics and Semiconductors | |
| 11. Electrochemistry | Chapter 18 |
| 12. Water(Acid and Bases) | Chapters 13 and 14 |
| 13. Organic Compounds | Chapter 22 |
| 14. Materials Science - Polymers | Chapter 23 |
| 15. Materials Science - Biopolymers | Chapter 23 |

The reading in Masterton is recommended but not required. You are only responsible for what is covered in the lectures and discussion sections.

Course Mechanics

Lectures: MWF 11:00 - 11:50 am Location KAP 140. No lectures on January 21st and February 8th, 11th and 18th.

Laboratories: Start the week of January 28, 2013 and end the week of April 8, 2013. Location of all labs is PCE 103. Be sure you go to PCE building and not the HED building which is right next door and has a common entrance. PCE 103 has a sign on the door which says "MASC 110L Laboratory". HED 103 is a regular classroom.

Discussion Sections: Start the week of January 28, 2013.

First Midterm: February 22, 2013 Friday in class

Second Midterm: April 5, 2013 Friday in class

Final: May 8, 2013 Wednesday 11-1 pm

Grading:

- OWL assignments 15% (based on percent of assignments completed)
- Laboratory reports 15% (drop the lowest grade)
- First midterm 20%
- Second midterm 20%
- Final 30%

There is a grading policy posted on Blackboard that deals with missing and late assignments.

| Numerical Score | Letter Grade |
|-----------------|--------------|
| 90-100 | A |
| 87-90 | A- |
| 84-87 | B+ |
| 82-84 | B |
| 80-82 | B- |
| 78-80 | C+ |
| 74-78 | C |
| 70-74 | C- |
| 66-70 | D+ |
| 62-66 | D |
| 58-62 | D- |
| 0-58 | F |

Course Text

Chemistry: Principles and Reactions, 7th Edition by Masterton and Hurley. **The text is not required for the class.** You will have access to the electronic version of the text through OWL so you would need to purchase the text only if you want a hard copy of the text.

Online Web-Based Learning (OWL)

There will be OWL assignments assigned after every lecture and due before the next Monday lecture which will provide tutorials and problems for the concepts covered in the lecture. The OWL assignments are done online and you need to have an access code. You need to purchase the access code online for \$107 you can purchase the electronic version of the text and OWL access. The electronic text and access code is valid for six months. Go to the website <http://www.cengage.com/owl> to purchase access code and register

To purchase access code

1. Select *General Chemistry* and choose *purchase access code*
2. Select textbook – *purchase access code for six months*

To register

1. Select *General Chemistry* and choose *register*
2. Select textbook
3. Select the university
4. Select *student registration* and use access code to register (use your USC e-mail). For department it will say “chemistry”.

Laboratory Manual

It will be placed on Blackboard and you should download it. You should either bring a printed copy or electronic copy (laptop computer) to the lab.

Laboratories

Determination of Avogadro's Number - week of January 28, 2013

Atomic Spectroscopy - week of February 4, 2013

Thermal Reduction of Copper Ore to Copper Metal - week of February 11, 2013

Crystal Structures of Metals - week of February 18, 2013

Phase Equilibria - week of February 25, 2013

Crystal Structures of Ionic Solids - week of March 4, 2013

Microstructure of Metals - week of March 11, 2013

Hardness - week of March 25, 2013

Corrosion - week of April 1, 2013

Polymers - week of April 8, 2013

Laboratory reports are due at the next week laboratory session.

Discussion Sections

Discussion sections start week of January 28, 2013 and there will be a discussion section every week except for week of spring break. You are responsible for the material covered in the discussion sections.

Week of January 14, 2013 No discussion section this week
Week of January 21, 2013 No discussion section this week
Week of January 28, 2013
Week of February 4, 2013
Week of February 11, 2013
Week of February 18, 2013 Review for midterm I
Week of February 25, 2013 Return Midterm I and go over solutions
Week of March 4, 2013
Week of March 11, 2013
Week of March 25, 2013
Week of April 1, 2013 Review Midterm II
Week of April 8, 2013 Return Midterm II and go over solution
Week of April 15, 2013
Week of April 22, 2013
Week of April 29, 2013 Review for final

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. Website and contact information for DSP:
http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html, (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) ability@usc.edu.

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, (www.usc.edu/scampus or <http://scampus.usc.edu>) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Emergency Preparedness/Course Continuity in a Crisis

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.