Instructor: Prof. Andrea Armani, Dept. of Chemical Engineering and Materials Science, VHE 712, (213) 740-4428, armani@usc.edu

Class Hours: Tuesday/Thursday 8:00-9:20am

Office Hours: immediately before/after class

Textbook/Reference material:
There is no specific textbook. Reference materials, such as review articles, will be posted periodically on Blackboard.

Course Vision:
This course is designed to discuss Nanotechnology from the bottom up and top down. In that sense, we will first discuss the building blocks of nanotechnology, or structures like nanocrystals, polymers and nanowires/tubes, and their fundamental properties (optical, electrical, mechanical, etc). From there, we will use these individual structures to build more complex devices using methods ranging from self-assembly to lithography, and different applications.

Course Objective:
The objective of this course is to expose students to modern engineering tools and challenges and teach them how to approach and solve problems which have immediate relevance. A secondary objective is to teach students how to express research results in a scientific manner.

Grading:
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<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>5%</td>
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<tr>
<td>Labs</td>
<td>35%</td>
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<tr>
<td>Midterm</td>
<td>25%</td>
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<tr>
<td>Final</td>
<td>35%</td>
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Expectations/Information for Assignments, Exams and Papers:

Homework assignments:
There will be two problems sets/homeworks. They are due at the beginning of class. Late homeworks are not accepted.

In addition, students are expected to complete reading assignments. Reading assignments will be posted on Blackboard.

Labs:
There are six labs, which are divided into two categories: 1) synthesis of nanomaterials and 2) applications nanomaterials. The lab manual and the template for the lab report are posted on Blackboard. It is expected that you will have read the lab manual and the assigned pre-lab reading before coming to lab. Although you are working with a partner, every student should submit their own lab report. The grading sheet detailing how the lab report will be graded is on Blackboard.
If a lab report is plagiarized, the student will receive 0 pts for the lab report. There is a ppt presentation detailing what is considered plagiarism on Blackboard. If you have any questions, please ask.

No late lab reports are accepted.

**Exams:**
There is 1 midterm and 1 final exam.

The midterm and final exam will consist of 5-10 problems, structured to allow the entire exam to be completed in a single class period. The final exam will cover material from the entire semester. A sheet of crucial equations and mathematical formulas will be attached to the exams. Nothing except a pencil or pen is allowed (no calculators, class notes, slides, papers, problem sets or solutions). The midterm and final from Spring 2016 MASC 350L are assigned as homework. However, it is important to remember that the course content does vary slightly every semester (as new discoveries are made).

**Detailed Course Outline:**
Posted on Blackboard
Statement on Academic Conduct and Support Systems

Issued by:
Michael W. Quick, Provost and Senior Vice President for Academic Affairs
May 4, 2017

Academic Conduct:
Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your
own words – is a serious academic offense with serious consequences. Please familiarize
yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating
University Standards” https://policy.usc.edu/scampus-part-b/. Other forms of academic
dishonesty are equally unacceptable. See additional information in SCampus and university
policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct.

Support Systems:
Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy,
group counseling, stress fitness workshops, and crisis intervention.
https://engemannshc.usc.edu/counseling/

National Suicide Prevention Lifeline - 1-800-273-8255
Provides free and confidential emotional support to people in suicidal crisis or emotional distress
24 hours a day, 7 days a week. http://www.suicidepreventionlifeline.org

Relationship & Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender-
based harm. https://engemannshc.usc.edu/rsvp/

Sexual Assault Resource Center
For more information about how to get help or help a survivor, rights, reporting options, and
additional resources, visit the website: http://sarc.usc.edu/

Office of Equity and Diversity (OED)/Title IX compliance – (213) 740-5086
Works with faculty, staff, visitors, applicants, and students around issues of protected class.
https://equity.usc.edu/

Bias Assessment Response and Support
Incidents of bias, hate crimes and microaggressions need to be reported allowing for
appropriate investigation and response. https://studentaffairs.usc.edu/bias-assessment-
response-support/

Student Support & Advocacy – (213) 821-4710
Assists students and families in resolving complex issues adversely affecting their success as a
student EX: personal, financial, and academic. https://studentaffairs.usc.edu/ssa/

Diversity at USC – https://diversity.usc.edu/
Tabs for Events, Programs and Training, Task Force (including representatives for each
school), Chronology, Participate, Resources for Students