

CH 410/510 Chemistry of Nanomaterials (CRN# 45265 / 45264)

Instructor: Scott Reed, SB1, 309 (sreed@pdx.edu)

Class Meetings: Tuesday/Thursday: 2:00 – 3:50, Clay, 103

Office Hours: Tuesday/Thursday: 9:00 – 10:00 am (or by appointment)

Text: No textbook. We will primarily explore recent topics in the literature. Suggested readings will be provided in class.

Objectives: The chemistry of nanomaterials is a broad and rapidly growing topic. In particular this class will focus on a synthetic perspective to nanomaterials. This will include chemical routes to preparing nanomaterials and to modifying the surface of nanomaterials. There will be a bias toward the bottoms-up approach to designing nanostructures, however, the use of chemistry to modify top-down nanostructures will also be covered. Specific topics will include self-assembly, synthesis of nanoparticles and quantum dots, surface characterization, and bionano. Techniques for characterization will focus on instruments that provide chemical information about nanomaterial structure such as photoelectron spectroscopy.

Another goal of the course will be to develop the skills of searching, locating, reading, and understanding the chemical literature related to nanomaterials chemistry.

Grading:

- 20% Midterm (in week 5)
- 30% Participation in literature discussions
- 30% Final Paper
- 20% Presentation

Presentation: Each student will present a formal literature talk in class.

Literature discussion: Since the course will focus on recent literature, participating in literature discussions will be an important part of the class. You will also be graded on your participation in the literature discussions in class and on-line.

Paper: Stemming from the literature discussion, you will select topic and write a 5 page summary of set of papers.