

Chemistry 280: Professional Tools for Scientific Careers (0.25 units)
Fridays 3:00 – 3:50 pm SC402

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Office hours: Wednesdays 1:30-3:30 or by appointment

CHEM 280. Professional Tools for Scientific Careers (0.25 units).

Planning your future, defining and finding internship and post-college opportunities, locating useful technical literature, discussing scientific ethics and issues, and participating in peer review. One 1-hour period per week. Graded credit/no credit. Offered each semester. Prerequisite: Chemistry 230 or sophomore standing.

This course provides an opportunity for professional development and to hear and discuss current scientific research in not only chemistry, but also in biochemistry, health, the environment, and technology. We shall dedicate a significant portion of class to discussion of recent scientific literature. This type of presentation is expected in most research groups (both academic and industrial). The remainder of the course involves planning your future, defining and finding internship and post-college opportunities, as well as some sessions devoted to computer-based tools for scientists.

This CHEM 280 course will be run con-currently with CHEM 370: Next Generation Antimicrobials (Capstone); those students will be the presenters, your role will be to serve as an active, engaged audience, providing thoughtful feedback. Presentation topics include the soil crisis, the antibiotic crisis, microbial communication, antibiotic policy and stewardship, antibiotic drug discovery, and natural product (secondary metabolite) chemistry.

If you have a disability and need accommodations, contact Learning Enrichment and Disability Services (LEADS) located on 2nd floor Pearsons (north side), [608-363-2572](tel:608-363-2572), learning@beloit.edu or through olesena@beloit.edu. For accommodations in my class, you are to bring me an Access Letter from the Director of LEADS and then we will discuss how to implement the accommodations. Contact that office promptly; accommodations are not retroactive.

This course meets on land that is located on the traditional territory of Indigenous peoples, and we respectfully acknowledge the Potawatomi, Peoria, Miami, Meskwaki, and Ho-Chunk (Winnebago) people who have stewarded this land throughout countless generations. We pay respects to their elders both past and present and, as we gather here for class, we consider the legacies of violence, displacement, and settlement that they have faced. We are always on Indigenous land, and here on the campus we have a constant reminder in the form of the mounds. To recognize the land is an expression of gratitude and appreciation to those on whose territory you reside, and a way of honoring Indigenous people. Land acknowledgments do not exist in a past tense, or outside historical context: colonialism is an ongoing process, and we need to build our mindfulness of our present participation.

Attendance and Grading Policy

This course is participation-based, so attendance for every class period is mandatory. I expect you to **be on time** for every class. I understand extenuating circumstances arise, so I will allow ONE excused absence for the course (we meet 13 times). Excused absence means you have contacted me as soon as possible **before** class to notify me that you will not be present. More than one absence and we will have a conversation about dropping or withdrawing from the course. Hardcopies (printed) of student-prepared material will be collected during each class period. Late work is not accepted.

For each presentation (17 total). Read the article before class. You may need to read it multiple times. Take written notes. *Bring to class your notes on the article. Then provide written answers the following specifically: (i) what did you already know that was presented in the readings; (ii) what did you learn from the readings; (iii) what are you still confused about from the readings.*

All assignments are 10 points each. To earn credit (“CR”) for the course you must:

1. have complete attendance for the course (see above; one *excused* absence is allowed).
2. Earn >73% (a C) in the course.

This course will use a Moodle page. Please check it regularly for important materials and updates.

Course Calendar for CHEM 280 and CHEM 370 (Fridays 3:00-3:50 pm)

Friday January 24th - Introduction to antibiotic resistance

Before class, listen to [Bloomberg Prognosis Podcast Episode 17](#) and take notes, and watch [We're Losing the War Against Bacteria, Here's Why](#).

During class:

1. Podcast discussion activity. (10 points)
2. How to search for a job.

You may use SC401, chemistry department computer lab.

Friday January 31st

Bring ten current "dream-job" advertisements, printed. (10 points).

During class:

1. Tiny Earth overview by Chem 370 students
2. **Skills Inventory** (10 points)

Friday February 7th - Ethics

Before class read the following. Bring written notes to class (10 points) and prepare to engage in discussion. [What is Ethics in Research and Why is it Important?](#)

Friday February 14th -Applying for a job or internship

Prepare and print a cover letter ([Basic Guide to Writing a Cover Letter](#)) and resume ([Basic Guide to Writing a Resume](#)) for one of your dream jobs or an internship.

Read: [Framing your accomplishments](#).

Bring your printed cover letter, resume, and advertisement to class for peer review (10 points)

During class:

Engage in peer review.

(If you are interested in an academic career, consider preparing a CV. . [Basic Guide to Writing a CV.](#))

Friday February 21st- Presentations 1 & 2

See Moodle for articles.

For each article, (17 total, 10 points each):

Bring your notes on the article. Then answer the following specifically: (i) what did you already know that was presented in the readings; (ii) what did you learn from the readings; (iii) what are you still confused about from the readings?

Friday February 28th - Presentations 3 & 4

Friday March 6th - Presentations 5 & 6

Midterm Break

Friday March 20th - Presentations 7 & 8

Friday March 27th - Advising Practicum – no class

Friday April 3rd - Presentations 9 & 10

Friday April 10th - Presentations 11 & 12

Friday April 17th - Presentations 13 & 14

Friday April 24th - Presentations 15 & 16

Friday May 1st Presentation 17

During class: course evaluations