



CHM 350 - Introduction to Chemical Research

Instructor: Soon Goo Lee, Ph.D.

- Office Hours: TBA
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Pre or corequisites: Organic Chemistry I (CHM211) or Quantitative Analysis (CHM235)

Course Description:

- This course is designed to introduce information literacy and chemical investigation, including use of the chemical literature, experimental design, proposal preparation, and communication of findings to students.
- Partially satisfies University Studies IV: Building Competencies/Writing Intensive. Partially satisfies University Studies IV: Building Competencies/Information Literacy.
- Classes may require the use of a laptop computer or mobile devices.
- Please check your UNCW email account and Canvas regularly to figure out important information, including assignments.

Lecture:

- Introduction to Chemical Research (CHM-350)

<u>Time</u>	<u>Days</u>	<u>Where</u>	<u>Date Range</u>
4:00 pm - 4:50 pm	M	Teaching Laboratory 2014	Aug 21, 2019 - Dec 04, 2019

- Although attendance will not be taken in lecture, it is expected that you will attend all lectures and complete all homework assignments.

Learning Outcomes:

By the end of this course, students will be able to understand the Framework for Information Literacy for Higher Education (i.e., *Authority Is Constructed and Contextual, Information Creation*

as a Process, Information Has Value, Research as Inquiry, Scholarship as Conversation, Searching as Strategic Exploration) and use information literacy to

- search available research activities and job opportunities in chemical research
- use scientific databases to find peer-reviewed journals in specific topics of interest in all areas of chemistry
- extract, summarize, and interpret core ideas from literature sources
- formulate and explain their proposal in an organized fashion (objectives and significance, experimental approach, predicted outcomes and obstacles, etc.)
- edit and revise proposal sections

Notice: UNCW's Information Literacy Faculty Fellows Projects

The curriculum of the Introduction to Chemical Research (CHM 350) course, especially Information Literacy session, was designed using the concepts and knowledge from the **Framework for Information Literacy for Higher Education** booklet (<http://www.ala.org/acrl/files/issues/infolit/framework.pdf>). One or more class materials and slides in this course have been adopted from the UNCW's Information Literacy Faculty Fellows workshops. Some classroom/homework assignments have been chosen for the purpose of the Information Literacy Faculty Fellows Projects.

Grading Policy:

The final grade for the course will be based on oral presentations (PR 1 & 2), information literacy in-class assignment & presentation (IL 1), information literacy homework assignments (IL 2), and writing homework assignments (HR 1-6) that will be due at various times during the semester. The due date for each assignment will be listed on the course schedule and be also announced in class and email (lees@uncw.edu).

Personal Statement: Presentation & Writing - Part1

Presentation 1. (PR1) **5%**

- Introduce yourself (3 min)

Homework assignment 1. (HW1) **10%**

- Personal Statement, Part 1 - Personal, educational and/or professional experiences (1 page)

Homework assignment 2. (HW2) **5%**

- Personal Statement, Part 2 - Educational and career goals (1/2 page)



Information Literacy (IL)

IL in-class assignment (IL1) 10%

- Searching as Strategic Exploration Presentation

IL Homework assignment (IL2) 10%

- Database Search & Scientific Writing (1 page)

Research Statement: Presentation & Writing – Part2

Presentation 2. (PR2) 10%

- Research topics, search strategy, and backgrounds (5 min)

Homework assignment 3. (HW3) 10%

- Research Plan Statement, Part 1 - Research title and introduction (1 page)

Homework assignment 4. (HW4) 10%

- Research Plan Statement, Part 2 - Research aims and approaches (3 aims, 1 page)

Homework assignment 5. (HW5) 5%

- Research Plan Statement, Part 3 - Broader impacts on society (1/2 page)

Homework assignment 6. (HW6) 5%

- Peer review evaluation and critique (1/2 page)

***Participation 10%**

The final version of the proposal (10%, revised and formatted HW 1-6) will be the final exam for this course. Final proposals are due at **11:59 p.m. (EST) on December 9th, 2019.**

- Final course grades will be calculated using the following percentages:

A	90.00%+
B+	88.00% - 89.99%
B	82.00% - 87.99%
B-	80.00% - 81.99%
C+	78.00% - 79.99%
C	70.00% - 77.99%
D	60.00% - 69.99%
F	Below 59.99%

Information about the course can be accessed on Canvas:

- This website will be used for the posting of lecture notes and pdfs of handbooks.
- You will also find a course calendar detailing lecture topics.

- Note this calendar is subject to change.

Services for Students with Disabilities:

- Students with diagnosed disabilities should contact the Office of Disability Services (962-7555).
- Please give me a copy of the letter you receive from ODS detailing class accommodations you may need. If you require accommodation for testing-taking, please have the referral letter to me at least three days before the exam.

Recommended Reading:

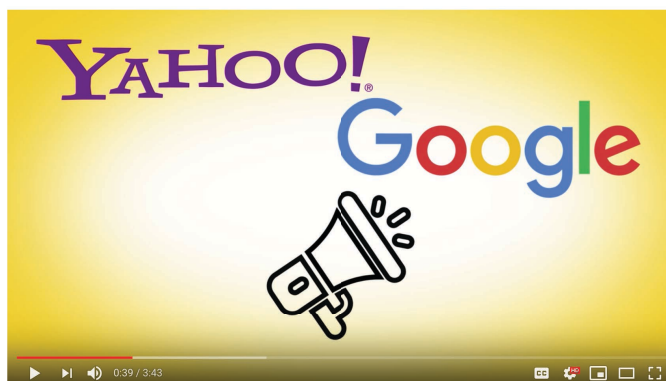
- *"Framework for Information Literacy for Higher Education"* by the Association of College & Research Libraries (ACRL) (<http://www.ala.org/acrl/files/issues/infolit/framework.pdf>)
- *"The Elements of Style," 4th. edition* by W. Strunk and E.B. White (Longman, 1999)
- *"Media Writer's Handbook"* 5th. edition by George T. Arnold (McGraw Hill, 2009)
- *"A Short Guide to Writing about Chemistry"* by H.B. Davis, J.F. Tyson, and J.A. Pechenik (Longman, 2010)
- *"A Handbook for Scholars"* by M.-C. van Leunen (Oxford University Press, 1992)
- *"Getting Science Grants"* by T.R. Blackburn (Jossey-Bass, 2003)

Course Schedule:

Week 1

Lect 1: M (Aug 26) Course Introduction
Information Literacy (IL): Information Has Value

- Safiya Noble, *"Algorithms of Oppression"*
- <https://www.youtube.com/watch?v=6KLTpoTpkXo>



Week 2

M (Sep 2) No Class (Labor Day)

Week 3

Lect 2: M (Sep 9) **Personal Statement:** Presentation
PR1: Introduce yourself (3 min)

Week 4

Lect 3: M (Sep 16) **Personal Statement:** Presentation
PR1: Introduce yourself (3 min)

Week 5

Lect 4: M (Sep 23) **Personal Statement:** Writing
HW1: Personal Statement, Part 1 (1 page)

Week 6

Lect 5: M (Sep 30) **Personal Statement:** Writing
HW2: Personal Statement, Part 2 (1/2 page)

Week 7

Lect 6: M (Oct 7) **Information Literacy (IL):** Library Session Part 1.
Location: Randall Library Room 1039
Invited Instructor: Peter Fritzler (Sciences Librarian)
Topics: Information Has Value, Research as Inquiry, & Searching as Strategic Exploration

Week 7

Lect 7: M (Oct 14) **Information Literacy (IL):** Library Session Part 2.
Location: Randall Library Room 1039
Invited Instructor: Peter Fritzler (Sciences Librarian)
Topics: Searching as Strategic Exploration
– Database Search (i.e, PubMed, SciFinder, Web of Science)
– IL In-class assignment (IL 1)

Week 8

Lect: M (Oct 21) **Research Statement:** Writing
Special Writing Class
Location: Teaching Laboratory 2014
Invited Instructor: Dr. Ian Weaver (Assistant Professor of English)
Topics: Writing Science

Week 9

Lect 8: M (Oct 28) **Information Literacy (IL)**
Scientific Writing (1 page)
– Database Search (i.e, PubMed, SciFinder, Web of Science)
– IL Homework (IL2) Write a scientific literature review (1 page)

Week 10

Lect 9: M (Nov 4) **Information Literacy (IL) & Research Statement:** Presentation
PR2: Database search strategy, research topics, and backgrounds (5 min)

- NCSU Libraries, "**Picking Your Topic IS Research!**"
- <https://www.youtube.com/watch?v=Q0B3Gjlu-1o>

Week 11

Lect 10: M (Nov 11) **Information Literacy (IL) & Research Statement:** Presentation
PR2: Database search strategy, research topics, and backgrounds (5 min)
HW3: Research Plan Statement, Part 1 (1 page)

Week 12

Lect 11: M (Nov 18) **Research Statement:** Writing
HW4: Research Plan Statement, Part 2 (1 page)

Week 13

Lect 12: M (Nov 25) **Research Statement:** Writing
HW5: Research Plan Statement, Part 3 (1/2 page)

Week 14

Lect: M (Dec 2) **Research Statement:** Writing
HW6: Peer review evaluation and critique (1/2 page)

Week 15

Lect 13: M (Dec9) Final Proposal