

The objective of this course is to present and discuss responsible conduct of research (RCR) in chemistry. Successful completion of the course will satisfy federal guidelines for RCR training and documentation.

Required Text: Responsible Conduct of Research by Adil Shamoo and David Resnik
3rd Edition

Optional Texts: SIGMA XI, Honor in Science
The Ethical Chemist by Jeffrey Kovac
Research Ethics: A Reader by Demi Elliott and Judy E. Stern (Eds)
The Ethics of Science: An Introduction (Philosophical Issues in Science) by David Resnik

Short Description: Responsible conduct of research in chemistry with emphasis on ethics of conducting research, data analysis, and conformance to federal and community guidelines in the chemical laboratory.

The course consists of two required major sections:

1. CITI online training in Physical Science modules; contains text embedded case studies and quizzes. Time equivalent: 8-10 lecture hours; minimum passing grade 80%. Students required to submit print outs of all sections and sheet with final grade to receive credit.
2. Discussion-based RCR: a series of lectures/discussions+ on topics of relevance; attendance (sign-in) and successful completion of written (typed) assignments. Late assignments will lose points.

Grading (with tentative cutoffs):

A+ = 95% and above	
A = 90%	CITI online quizzes (maximum points.) = 250
A- = 88%	<u>Discussion-based attendance/assignments = 350</u>
B+ = 84%	TOTAL = 600 maximum
B = 80%	
B- = 77%	Grade based on percentage of total points
C+ = 73%	
C = 70%	Note: Sept. 9 is the last day to withdraw
C- = 65%	With a W

The course will meet the equivalent of twice each week in a minimester format.

(See page 2)

Tentative Schedule: Fall 2016 (Sign-in required on all lecture/discussion sessions.)

<u>Date</u>	<u>Week</u>	<u>Lecture/Discussion (100 min.)</u>	<u>Lecture/Discussion (100 min.)</u>
8/23-8/25	1	Intro/Overview of course	CITI* (no class meeting)
8/30-9/1	2	(A)Misconduct/Plagiarism	Data Management (B)
9/6-9/8	3	(C)Publication/Responsible Authorship	Peer Review/Mentoring (D)
9/13-9/15	4	(E)Conflicts of Interest	Collaborative Research (F)
9/20-9/22	5	Human Subjects/Animal Welfare**/CITI see note:no class	Overview/Summary
9/27-9/29	6	CITI*	CITI*
10/4-10/6	7	CITI* due Oct 6th	Final written assignment due

*Credit for online actual time based on pilot runs by students

**Researchers dealing with these topics should complete the online sections and hand in documentation; optional-not required for majority of students; no formal lecture on this day.

HW Assignments (125 pts): Other than CITI; typed, turn in at the start of class (before discussion) ;deduction for late HW. (CITI must be completed by the end of Minimester 1) Oct 6th

(A) Misconduct/Plagiarism - Read pages 1-27, 28-59; Written: Cases 1, 2,5,6,7,8,9,10(pages 54-59)

(B) Data management - Pages 61-84; Written: Cases 1,2,4,6,7,8

(C) Publication/Responsible Authorship - pages 123-170; Cases 1,2,7,8 pgs132-136; pages; Cases 1,6,10 pgs 165-170

(D)Peer Review/Mentoring - Pages 84-95; Cases 1,2,3,4,7,8

(E)Conflicts of Interest - Pages 194-211; Cases 1,2,4,6,8

(F)Collaborative Research - pages 96-121; Cases 1,2,4,5,6

Overview: Final Assignment (see below)

Final Written Assignment (typed;due Oct. 6; 100pts):

1. Define and discuss the following as applied to Chemical Research (graduate student perspective).
 - a. Fabrication (misconduct)
 - b. Falsification (misconduct)
 - c. Plagiarism (misconduct)
 - d. Conflict of Interest
 - e. Collaborative Research
 - f. Intellectual Property

2. Discuss the following as they apply to chemistry from the graduate student's perspective.
 - a. Data Acquisition and Management; b. Publication/Authorship; c. Acad./Indust. Collaborations; d. Mentor Responsibilities; e. Grad. Student Responsibilities

