

CEM 444: "Chemical Safety" — Fall 2020

Instructor: Robert Maleczka Office: 485B Chemistry; Office hours: by appointment
phone: 353-0834; email: maleczka@msu.edu

Course Coordinator: Ms. Nancy Lavrik
email: lavrik@chemistry.msu.edu

Class Time: Wednesdays 12:40–1:30 pm by zoom, (see D2L for meeting ID and passcode).

D2L Course: [ES20-CEM-444-001 - Chemical Safety](#)

Texts: Class Handouts & Posted Materials on CEM 444 Webpage

Required Software: All students will be expected to have reliable internet access to email, zoom, and D2L. Access to Microsoft Word and Power Point is also required.

Course Objectives: CEM 444 reviews hazards that may be encountered in teaching, research, and industrial chemistry laboratories. Administrative and engineering controls as well as personal protective equipment (PPE) designed to prevent and control exposures are also reviewed. The course aims to inform students of prudent laboratory practices and regulatory agencies' expectations for safe laboratory operations. It also aims to teach student to analyze reactions for potential hazards.

Grading Scheme:

Exam/Assignment*	pts	
Exam 1	100	October 7, 2020
Exam 2	100	November 11, 2020
OPRD Homework	100	Due December 4, 2020
Final Exam (cumulative): _____	100	December 14, December
Total	400	

***Attendance Policy:** If you miss an examination due to *religious holidays, unavoidable personal commitments, grief absences, illness, etc.*, your course grade will be calculated by adding the point value (100 pts) of each missed exam to the Final Exam ([MSU Final Exam Policy](#)). (If you know you will have a conflict with the dates indicated above AND you let me know by **September 16**, I will arrange for a makeup date.). Zoom lectures will be recorded and posted on D2L.

Homework: There will be one CEM 444 homework assignment. For this assignment, each student is asked to find a unique article in the journal [Organic Process Research & Development](#) (OPRD) that discusses a safety issue and to create a single Power Point slide that illustrates the issue and any solutions. OPRD is accessible through MSU Libraries via our institutional subscription. Your slide should cite the article using ACS style formatting (e.g. Gadomska-Gajadhur, A.; Ruśkowski, P. Biocompatible Catalysts for Lactide Polymerization—Catalyst Activity, Racemization Effect, and Optimization of the Polymerization Based on Design of Experiments *Org. Process Res. Dev.* **2020**, *24*, 1435–1442, DOI: [10.1021/acs.oprd.0c00149](#)) and the home institution(s) of the authors. Please email me the journal article as soon as chosen. I will reserve that article for your sole use. The final slides should be emailed to me no later than **December 4**, but can be turned in at any time.

Grade Scale:

Grade	pts
4.0	>360
3.5	321–360
3.0	281–320
2.5	241–280
1.5	201–240
1.0	161–200
0.0	<161

Current Lecture Schedule:

September 9 – Course Introduction (REM)

September 16 – Case Studies (REM)

September 23 – Case Studies (REM)

September 30 – Green Chemistry (REM)

October 7 – Exam 1

October 14 – Lab Design & Ventilation by Dave Erickson (MSU Environmental Health & Safety)

October 21 – Radiation Safety by Greg Severin (MSU Chemistry)

October 28 – Chemical Safety in Industrial Labs by Matt Belowich & Jordan Reddel (Dow Chemical)

November 4 – Biological Safety by Becky Jannausch (MSU EHS)

November 11 – Exam 2

November 18 – Laser Safety by Warren Beck (MSU Chemistry)

November 25 – Standard Operating Procedures by Genevieve Cottrell (MSU EHS)

December 2 – The Lab Inspection Process by Katie Layman & Alessandra Hunt (MSU EHS)

December 9 – Case Studies (TBD)

December 14 (Monday) – Final Exam (cumulative)

Class Conduct: Professional, courteous, and ethical conduct is expected of all students at all times. Likewise, diversity among students should be respected. This includes the use of a person's preferred pronouns. Finally, please mute your zoom when others are speaking.

Policy on Cheating: In order to discourage cheating, the instructor will retain copies of all exams and reserves the right to run written answers through plagiarism checkers. Any student caught cheating will receive a grade of 0.0 for that test and an academic misconduct report will be filed with the University.

Special Assistance: Any students requiring special assistance must identify themselves to the instructor at the beginning of the semester.

Honors Option: The [honors option](#) for this course involves an expanded version of the homework assignment above. Students looking to receive honors options credit will be expected to make a 5 slide / 5-minute presentation on their homework assignment *and* earn a 3.0 or greater in a course. Those interested should email me by **September 25** and I will schedule a zoom to discuss the option in more detail.

COVID-19 Information: The novel coronavirus, which causes the disease COVID-19, has been declared a worldwide pandemic. The COVID-19 virus is extremely contagious and is believed to spread mainly from person-to-person contact. The COVID-19 pandemic represents an unprecedented public health crisis that has impacted every facet of life, including the classroom environment. As a result, all lectures, exams, and office hours will be conducted remotely. Students who miss assignments or exams will have their final pro-rated. Cases of extended absence will be handled on an individual basis. Should my ability to teach the course or that of our guest lecturers be impacted by COVID-19, modifications may be made to the class format and/or instructor.