

**SYLLABUS**  
**CHEM-260 Environmental Chemistry**  
Dr. Jeff Osborne

**COURSE OBJECTIVE**

This course aims to familiarize you with human influences on the fundamental chemistry of the soil, water and air on earth.

**OFFICE HOURS**

My office is in room 313 SciC. My office hours are posted, although please just drop at other times, too. My email is [jposborne@manchester.edu](mailto:jposborne@manchester.edu) and I will try to respond to your queries within 24 hours, either by email or by addressing them in class.

**TEACHING METHODS**

I believe that a variety of teaching methods that encourage you to learn actively, interact socially, cooperate with peers, and think independently will best achieve the objectives described above. Class sessions will be a mixture of lecture, guided learning activities, and student presentations.

**EXPECTATIONS OF STUDENTS**

The content of the course will be presented during the lecture time and you will be responsible for everything that is presented during that time, unless it is explicitly excluded. The textbook is a resource, but does not determine nor contain the full content of the course. Usually, activities will require something to be completed and turned in on a 3×5 index card during class. The only way to obtain class participation credit is to turn in answers on these 3×5 index cards, so class attendance is required. If you cannot attend a class, please notify me in advance and expect to complete an extra make-up assignment if you miss a class. Each class meeting will be important and will build on knowledge learned in previous meetings. Missed quizzes, group presentations, labs, or tests cannot be made up except under very special, documented conditions, which are described below in Course Policies.

**WHAT STUDENTS CAN EXPECT FROM THE TEACHER**

I will create opportunities for your learning in a number of ways and then provide constructive criticism. I bring expertise in the subject area, yet require you to understand and wrestle with the ideas presented so that you are able to arrive ultimately at your own conclusions. I welcome ideas and suggestions, with the goal of improving the course. Toward this end, your feedback will be requested a number of times during the course. I strive to practice what I preach as a scientist who is continually learning.

**CLASS WEBSITE**

The website at [D2L.manchester.edu](http://D2L.manchester.edu) will be updated frequently. It will include your daily readings from the text and homework problems to be completed outside of class.

**REQUIRED MATERIALS**

You will need the textbook [Environmental Chemistry](#), 5th Ed. (2012), by Colin Baird and Michael Cann. Additional readings and online activities from various other informative web sites will be assigned as the class progresses. Readings are expected to be completed prior to the lecture for which they are assigned.

**COURSE POLICIES**

*Class Participation.* All students are expected to participate in class exercises. I can help you learn, but the responsibility is yours.

*Makeup Tests.* Makeup tests and quizzes will only be given for students who missed them due to verifiable illness, religious holiday, serious family emergency, jury duty or court subpoena.

Missing an exam or quiz without an excuse from the college nurse, a doctor, or Student Development is not permitted.

*Academic Dishonesty.* Cheating and plagiarism in the form of taking credit for someone else's work, thoughts, or conclusions without giving that individual proper credit will not be tolerated. Some other examples of cheating include using notes or looking at a classmate's paper during a quiz or exam, copying a lab report, or using the published ideas of another person without assigning credit to them by using a reference. For more specific information concerning the consequences of cheating and plagiarism, read the college catalog on "Plagiarism and Academic Dishonesty."

*Diversity.* To maintain a welcoming and respectful classroom environment, disrespect of other students, in the form of verbal or written threats, attacks, or insults on the basis of gender, race, physical disability, physical stature, culture, socio-economic class, creed, sexual preference, mental disability or any form of social group membership will not be tolerated.

*Title IX Reporting Requirements.* While students should feel comfortable approaching the professor with issues they may be struggling with or concerns they may be having, students should be aware that faculty members have some reporting requirements that are part of their job duties at Manchester University.

For example, if a student informs a faculty member of an issue of sexual harassment, sexual assault, or discrimination, the faculty member will keep the information as private as possible, but the faculty member is required to bring it to the attention of the institution's Title IX Coordinator (x. 5052 [ajmachielson@manchester.edu](mailto:ajmachielson@manchester.edu)) or the Human Resources office (ext. 5038). Additionally, students can report incidents or complaints to Campus Safety (ext. 5999 or in Fort Wayne: 260-266-1800). Students can also obtain support from the University Counseling Services (260-982-5306).

Finally, students should know that if, for some reason, the interaction between a student and faculty member involves a disruptive behavior or potential violation of policy, the faculty member will inform the appropriate student experience staff, even when the student and faculty member may have reached an informal resolution to the incident. The purpose of this is to keep University leaders apprised of any behaviors and what was done to resolve them.

*Campus resources.*

Health services 260-982-5306 <http://www.manchester.edu/OSD/Health/Index.htm>

Counseling center 260-982-5306 <http://www.manchester.edu/OSD/Counseling/Index.htm>

Safety NM 260-982-5999, FW 260-266-1800 <http://www.manchester.edu/OSD/Security/index.shtml>

*Student Disability and Reasonable Accommodation Statement.* Manchester University, in compliance with federal guidelines, is committed to assuring students with disabilities equal access to programs and activities that are provided to students without disabilities.

Any student who feels she or he may need an accommodation based on the impact of a disability should contact support services for students with disabilities, to establish eligibility and to coordinate reasonable accommodations. It is the student's responsibility to self-disclose the disability. Students whose accommodation requests are approved will be provided with confidential letters to deliver to their professors which verify the nature of the student's disability and document the need for auxiliary aids and services and/or academic adjustments/accommodations. Students are encouraged to meet with each professor early in the semester to discuss the academic implications of the disability as they relate to the specific course and to request appropriate accommodations. The Disabilities Office is located in the Success Center (second floor of the Switzer Center). Students may call 982-5076 or 982-5888 to schedule an appointment.

*Medical Emergency Evacuation Schedule.* Students should speak to the instructor immediately if (1) they may require medical attention during class, or (2) they have a disability, chronic condition, or a temporary injury that may limit or affect their ability to evacuate the classroom/building in an emergency. The student and the instructor should discuss the student's specific needs and the types of precautions that should be made in advance of such an event. In the event of a fire or other situation requiring emergency evacuation, students with ambulatory disabilities are to go with or without assistance to the nearest stairwell area. Faculty and staff will assist with evacuation management efforts until such time as the Campus Safety and/or Police and Fire Departments arrive

on the scene to assist in student evacuation from the building. Elevators are not to be used for evacuation by any persons.

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## GRADING

*Philosophy.* A variety of methods to evaluate your progress is more beneficial than over-reliance on a few large exams. Additionally, spreading out tests and assignments over the semester encourages you to keep up with the course material and provides many opportunities to succeed in this class.

*Problem Sets.* Problems will be assigned at the end of each topic. These will be graded such that one point will be awarded for each complete and correct answer. The question must be copied down and enough narrative must be written that the chain of thought can be followed all the way through to the answer.

*Presentations.* You will locate an article from the recent literature (no more than three years old) concerning a topic covered in the previous sections and summarize it in 1-2 pages (single spaced, 11 pt, Times New Roman font) (worth 10 pt). This summary will include a paragraph relating why the research was done and what its objectives were, a paragraph describing the methodology, and a paragraph stating the major conclusions and the implications of the research. Writing style as well as content will be included in the grade. In class you will have 10 minutes to present the research to the class, followed by about 5 minutes of discussion (worth 15 pt). Each student must react to each presentation. Excellent articles may be found in Environmental Science and Technology, which is available full text to MU ip addresses at [www.acs.org](http://www.acs.org), under ACS publications, although any published, relevant, journal article will do.

*Final Examination.* A comprehensive Final Exam will be given in which you will be expected to synthesize material from throughout the term to show mastery of the subject.

*Grading Scale.* To encourage cooperation in learning, grading will not be calculated on a standard curve. Grades will be determined by the percentage of total possible points earned, as shown in the box below. An estimate of the final point total is also below. Additional assignments may be given that would alter it, but the percent of total point scale for each letter grade is absolute. The final grade will be based on the percentage of the total possible points.

### *Projected Point Distribution*

Exams	3 @ 100 pt	300
Final Exam	1 @ 100 pt	100
Presentations	2 @ 25 pt	50
Chapter Problems	14 @ 10 pt	140
Activities	10 @ 8 pt	80
Writing Assignments	2 @ 25 pt	50
<b>TOTAL</b>		<b>720</b>

### Grading Scale

<b>A</b>	<b>4.0</b>	<b>93%</b>
<b>A-</b>	<b>3.7</b>	<b>90%</b>
<b>B+</b>	<b>3.3</b>	<b>87%</b>
<b>B</b>	<b>3.0</b>	<b>83%</b>
<b>B-</b>	<b>2.7</b>	<b>80%</b>
<b>C+</b>	<b>2.3</b>	<b>77%</b>
<b>C</b>	<b>2.0</b>	<b>73%</b>
<b>C-</b>	<b>1.7</b>	<b>70%</b>
<b>D+</b>	<b>1.3</b>	<b>67%</b>
<b>D</b>	<b>1.0</b>	<b>63%</b>
<b>D-</b>	<b>0.7</b>	<b>60%</b>

Class	Date	Topic	Reading	Other
1	31 Jan	Pesticides	13	
2	2 Feb	Pesticides		
3	5 Feb	Pesticides, Non-Pesticide Toxic Organics	14, 15	
4	7 Feb	Non-Pesticide Toxic Organics		
5	9 Feb	Non-Pesticide Toxic Organics		
6	12 Feb	Green Chemistry	pp. i-xxx	
7	14 Feb	Hazardous and Municipal Wastes	16	
8	16 Feb	Hazardous and Municipal Wastes		
9	19 Feb	Hazardous and Municipal Wastes		
10	21 Feb	Toxic Heavy Metals	12	
11	23 Feb	Toxic Heavy Metals		
12	26 Feb	Toxic Heavy Metals		
13	28 Feb			<b>Exam 1</b>
14	2 Mar	Natural Waters	10	
15	5 Mar	Natural Waters		
16	7 Mar	Natural Waters		
17	9 Mar	Natural Waters		
18	12 Mar	Water Pollution	11	Presentations
19	14 Mar	Water Pollution		
20	16 Mar			<b>Exam 2</b>
	19 Mar	<b>Spring Break</b>		
	21 Mar	<b>Spring Break</b>		
	23 Mar	<b>Spring Break</b>		
21	26 Mar	Purification of Water	11	Presentations
22	28 Mar	Purification of Water		Presentations
	30 Mar	<b>Good Friday (no class)</b>		
23	2 Apr	Stratospheric Chemistry	1, 2	
24	4 Apr	Tropospheric Pollution Activity	3, 4	
25	6 Apr	Tropospheric Pollution Activity		
26	9 Apr	Detailed Chemistry of the Atmosphere	17	
27	11 Apr	Detailed Chemistry of the Atmosphere		
28	13 Apr	Greenhouse Effect	5	
29	16 Apr	Greenhouse Effect		
30	18 Apr	Climate Change	6	
31	20 Apr	Radioactivity	9	
32	23 Apr	Radioactivity		
33	25 Apr	Energy	8	
34	27 Apr	Energy		
35	30 Apr	Energy		
36	2 May			<b>Exam 3</b>
37	4 May	Alternative Fuels	7	
38	7 May	Alternative Fuels		Presentations
39	9 May	Alternative Fuels		Presentations
40	11 May	Alternative Fuels		Presentations
41	14 May	<b>Reading Day (no class)</b>		
	15-18 May			<b>Final Exams</b>