

Chemistry 320
Environmental Chemistry
Fall 2009 Course Outline

Instructor: Michael Dvorak, Ph.D.

Office: WSB-351

Phone: 320-308-2015

Email: madvorak@stcloudstate.edu

Web Page: <http://web.stcloudstate.edu/madvorak>

Office Hours: (see attached faculty schedule) or **By Chance or Appointment**

Textbook: Principles of Environmental Chemistry, James E. Girard

Lab Manual: *Chem 320 Lab Manual*, 2009 (available ONLINE only)

Grading:	Hour Exams (three each)	60 %
	Laboratory (20 % notebook)	20 %
	Presentation	10 %
	Home Work Problems	10 %

Score:	>88 % ...	A	> 58 %...	D
	>78 % ...	B	< 58 % ...	F
	>68 % ...	C		

Grading generally follows the procedure given above. The instructor maintains the right to 'curve' or normalize exams in a manner that maintains or bolsters the grading outline above. Grade shading is employed at the 2 % margins on each grade range.

In accordance with SCSU policy, any form of cheating (including laboratory plagiarism) will result in either a grade of F for work or a grade of F for the course.

Exams. Exams will be hour long. Makeup exams are only possible under extraordinary circumstances, e.g., documented family emergency. The final activity is both compulsory and cumulative of all material covered during the semester. Exams will be proctored as per standards set by continuing studies.

Laboratories. Students are responsible for all missed announcements and lab material. The lab is an integral part of this course, and attendance during assigned lab time is mandatory, unless arrangements are made with the instructor. More than two unexcused lab absences will result in an automatic failing of this course. The use of lab during other times may be approved by the instructor if it does not interfere with any other class. This needs to be via email for my records. The presentation is an integral part of the on-campus activity for this class and will be worth 10% of your overall grade.

All raw data and observations must be recorded in ink, in a bound lab notebook at the time the observation is made. At no time are you to record data on scraps of paper for transfer to your

lab notebook – all scraps will be confiscated and destroyed. Your lab notebook is subject to evaluation at any time. An inadequate record of your determination may lead to rejection of the results. When appropriate print outs (chromatograms, spectra, et.) should be kept neatly filed and labeled for future reference and inclusion in your lab report. A detailed lab schedule and report writing guidelines will be provided with the lab manual.

Lab reports will be accepted up to one week late with a penalty of 10% for each day late. Beyond one week late, lab reports will not be graded and will receive a grade of zero.



Assignments: Problems will be assigned on a regular basis. The assignments will may or may not be graded. . **All homework or assignments must be done in a manner where one's work is shown. Failure to show all work or properly demonstrate execution of the problem will result in minimal or no credit.** Regular review of course material and timely completion of problem assignments are critical for success in this course. DO NOT wait until the night before an exam to review material and attempt problems – you will be overwhelmed and disappointed with the exam results!

PowerPoint Presentation. At the end of the semester each student group will present a 20 minute formal talk on an environmental chemistry topic of their choice. This topic needs to be approved by the instructor at the end of October (by week 10). The talk needs to have a sufficient chemistry component to be acceptable. The talk needs to be appropriately split between two presenters. PowerPoint slides will be prepared a week prior to their presentation and reviewed with the instructor (practice presentation).

Homework. Assigned homework must be done in a notebook. This notebook will be handed in and graded at the end of semester for completeness, clarity, organization, and validity.

Chem 320 -- Laboratory Notebook

It is often asked, usually in an untimely manner, what do I need to have in my lab notebook. A laboratory notebook is a legal document that records what has been done in the laboratory, by whom, and when. It can contain protocol, comments, data, results, and the names and location of important data files. It is expected that all reputable laboratories be audited for appropriate use and maintenance of notebooks.

For Chemistry 320, the underlying theme that guides the use of a notebook is the bridging between the laboratory manual (lab directions) and the reporting of final data/results. The reporting can be as simple as a single unknown concentration value, or a formal report. A student should be able to come back into the lab after five years and be giving the lab manual, and their lab notebook. From these two documents, a report could ideally be generated.

As such, a notebook should contain...

- Index with experiment names and corresponding page numbers
- Each lab should be titled and dated.
- Each exercise should reference the lab manual, protocols used or changed.
- Three or more related data should be recorded in a table. Titles and labels should be used.
- The names of data files stored on a computer/memory chip need to be recorded!
- Unknown ID's need to be recorded
- Important conversions, calculations, and results need to be clearly articulated and displayed.
- Graphs and Trendlines of results (data that has been analyzed)
- Comments relevant to the data collected, opinions regarding the value of the data and why that opinion is noted.

What is not really needed...

- Long, plagiarized verbiage on the purpose of the experiment
- A listing of all the chemicals and apparatus used
- Unnecessary references
- ...anything already noted in the lab manual (changes to lab protocol should be noted and explained).
- Your opinion or philosophy of the experiment and what you personally thought about it. For example, what you learned in this experiment is not appropriate. Tell your drinking buddies what you thought of the lab, not your notebook.