

**Ohio Articulation Number (OAN)
Course Submission Form
2005-2006**



College/University The University of Akron

Course(s) Submitted(Title & Course #) 3150:153 for
Ohio Articulation Number OSC009

Date 1-25-06 Course 1 of a 2 Course OAN mapping.

Name and title of individual submitting on behalf of the college/university

Name Dr. Michael J. Taschner Title Interim Dept. Chair, Chemistry

Address College of Arts & Sciences

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Phone 330-972-7365

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Credit Hours 3 qtr _____ sem X

Lecture Hours 3

Laboratory Hours _____ (if applicable)

Pre-Requisites(s) Course work (if applicable)

Principles of Chemistry I (151) & Lab (152)

Placement Score (if applicable)

(Name of test) _____

(Domain) _____ (Score) _____

Catalog/Course Description (Includes Course Title and Course #)

Continuation of 151, 152, including aqueous solution theory, chemical kinetics, equilibrium, electrochemistry and nuclear chemistry. For chemistry majors, premedical students and most other science majors. Discussion (day sections).

Texts/Outside Readings/Ancillary Materials

Required

- *Chemistry: The Molecular Nature of Matter and Change*, 4th Edition by M. Silberberg, McGraw-Hill, 2006.
- *elInstruction CPSrf* personal response pad (available in bookstore)

- A scientific calculator. (Calculators used in math courses through 3450:223 should be fine.)

Optional

- Silberberg Student Study Guide.
- Silberberg Student Solutions Manual.

Copies of the textbook are on reserve in the Science Library Reserve room and KNCL 314.

Course Objectives and/or Plan of Work

Homework assignments will be announced regularly in lecture and posted on the course web site. The purpose of the homework assignments is to give you, the learner, first-hand experience in solving problems and thinking about chemistry, as well as to help you find trouble spots before exams.

Online homework assignments using *WebAssign* will be given during the semester. Details of the grading of the online homework are given at right.

Grading

Online HW (10 pts each)	80 pts.
Class Participation/Attendance	40 pts.
3 Hour Exams (220 pts each)	660 pts.
<u>Comprehensive Final Exam</u>	<u>220 pts.</u>
TOTAL	1000 pts.

At the end of the semester, the total scores for all students will be arranged in numerical order, the score that corresponds to the 98th percentile (S_{98}) will be determined, and then letter grades will be assigned based on this percentile score as follows:

A	Total Score $\geq 0.90 H S_{98}$
B	$0.80 H S_{98} \leq$ Total Score $< 0.90 H S_{98}$
C	$0.70 H S_{98} \leq$ Total Score $< 0.80 H S_{98}$
D	$0.60 H S_{98} \leq$ Total Score $< 0.70 H S_{98}$
F	Total Score $< 0.60 H S_{98}$

At various times during the semester, this approach will be used to create *tentative* grading scales which you can use to see how well you are doing at those points in the course.

This system has several advantages. It lets you know several times during the semester how you are doing in the course. Unlike a *curved scale*, it encourages cooperation among students because no student is penalized when another is successful. Unlike an *absolute scale*, it tends to neutralize the effects of differences in the difficulty of exams (and quizzes if given) from one semester to another and thereby ensures that the same criteria are used to assign grades from one semester to another.

This approach to grading means that the grade you get in this course depends primarily on *your own* effort and performance. *It also ensures that all students who do well in the course will get good grades.*

Description of Assessment and/or Evaluation of Student Learning

Online Homework Assignments (10 points each) Online homework assignments will be given at various times during the semester. You will have at least one week's notice before an assignment is due. Your eight best online homework assignment scores will be counted.

Class Participation/Attendance The eInstruction CPSrf response pads will be used to determine your attendance and participation in class. If you were present and participated in

80% or more of the class periods, you will receive 40 points. If you were present and participated in less than 40% of the class periods, you will receive 0 points. If you are between these cutoffs, you will receive a prorated number of points.

Hour Exams (220 points each) Four exams will be given in class. Each exam will be given at the beginning of our regular class period.

If your score on the final exam is higher than your score on your lowest hour exam, then the lowest hour exam score will be replaced by your final exam score. If you miss an hour exam for any reason, that exam score will be the one replaced by your final exam score.

Comprehensive Final Exam (220 points) The final exam will be cumulative over all course material.

Master Syllabi and Working Syllabi (if both are used)

Included below

Additional Documentation

Principles of Chemistry II

Section 002 (3150:153-002)

Spring 2006

Course Syllabus



Instructor Dr. Bill Donovan, KNCL 403, 972-6064, wdonovan@uakron.edu

Lectures TR 10:45AM–12:00PM, MGH 111

Web Sites <http://www2.uakron.edu/genchem/CHEM153/>
<http://webct.uakron.edu>
<http://www.webassign.net>

Learning Assistant Mr. Jim Engle (study sessions on 2nd floor of Carroll Hall)

As a student in *Chemistry 153, Section 002*, you are responsible for knowing the policies and procedures for the course contained in this document.

Textbook and Supplementary Materials **Required**

- *Chemistry: The Molecular Nature of Matter and Change*, 4th Edition by M. Silberberg, McGraw-Hill, 2006.
- *eInstruction CPSrf* personal response pad (available in bookstore)

Important Dates

Tuesday, January 31:

Last day to drop without adviser's signature.

Friday, March 10:

Last day to drop without instructor's signature.

Friday, April 14:

Final day to process withdrawals.

- A scientific calculator. (Calculators used in math courses through 3450:223 should be fine.)

Optional

- Silberberg Student Study Guide.
- Silberberg Student Solutions Manual.

Copies of the textbook are on reserve in the Science Library Reserve room and KNCL 314.

Preparation for this Course

3150:151 *Principles of Chemistry I*
3450:149 *Precalculus Mathematics* or
higher math course

Exam Dates

Tuesday, February 23
Tuesday, April 4
Thursday, May 4

Final Exam

Tuesday, May 9, 12:00–1:55PM

**LEARNING CHEMISTRY IS
NOT
A SPECTATOR SPORT!**

- Please turn off beepers and cell phones in class.
 - Your UA e-mail account is essential in this course. If you do not use this account, set it up to forward messages to an account you do use.
 - All e-mail messages to Dr. Donovan must be signed by you at the bottom. We will not reply to or acknowledge receipt of unsigned messages.
 - Arriving late/leaving early? Please use the back doors and sit near the back of the room.
 - Please do not request extra credit papers or projects. These are not offered.
 - Don't wait until it's too late to ask for help.
 - Ask for help or information now rather than asking for forgiveness later.
-

Lecture Schedule

<u>Week</u>	<u>Date</u>	<u>Day</u>	<u>Lecture Topics</u>	<u>Text Chapter*</u>
1	January 17	T	Solutions	13
	19	R	Solutions	13
2	24	T	Solutions; Chemical Equilibrium	13, 17
	26	R	Chemical Equilibrium	17
3	31	T	Chemical Equilibrium	17
	February 2	R	Acid-Base Equilibria	18
4	7	T	Acid-Base Equilibria	18
	9	R	Acid-Base Equilibria	18
5	14	T	Acid-Base Equilibria	18, 19
	16	R	Aqueous Ionic Equilibria	19
6	21	T	NO CLASS: UA Presidents Day Observance.	
	23	R	EXAM I	
7	28	T	Chemical Kinetics	16
	March 2	R	Chemical Kinetics	16
8	7	T	Chemical Kinetics	16
	9	R	Chemical Thermodynamics	20
9	14	T	Chemical Thermodynamics	20
	16	R	Chemical Thermodynamics	20
10	21	T	Electrochemistry	21
	23	R	Electrochemistry	21
SPRING BREAK: March 27–31.				
11	April 4	T	EXAM II	
	6	R	Electrochemistry	21
12	11	T	Electrochemistry	21
	13	R	Chemistry of Coordination Compounds	23
13	18	T	Chemistry of Coordination Compounds	23
	20	R	Chemistry of Coordination Compounds	23
14	25	T	Nuclear Chemistry	24
	27	R	Nuclear Chemistry	24
15	May 2	T	Nuclear Chemistry	24
	4	R	EXAM III	
16	FINAL EXAM (comprehensive):			
	Tuesday, May 9, 12:00-1:55pm			

It is possible that I may deviate slightly from the above schedule. Any changes will be announced in lecture. Examples will sometimes use organic and biochemical compounds, which are covered in Chapter 15.

Descriptive chemistry of elements (Chapter 14) will be covered at various times throughout the semester.

* Chapter references are to *Chemistry: The Molecular Nature of Matter and Change*, 4th Ed. by Silberberg.

CHEM 153, Section 002 Policies and Procedures, Spring 2006

Homework

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This approach to grading means that the grade you get in this course depends primarily on *your own effort and performance*. *It also ensures that all students who do well in the course will get good grades.*

Saving Graded Materials

You should save all of your graded materials until you receive your final grade for the course.

Evaluation of Your Learning

Online Homework Assignments (10 points each)

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Class Participation/Attendance The eInstruction CPSrf response pads will be used to determine your attendance and participation in class. If you were present and participated in 80% or more of the class periods, you will receive 40 points. If you were present and participated in less than 40% of the class periods, you will receive 0 points. If you are between these cutoffs, you will receive a prorated number of points.

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If you arrive late for an exam, you will be admitted up until the time the first person turns in a scan sheet and leaves. You will not be given additional time to complete the exam.

Bring pencils, eraser, calculator, non-erasable pen, and ID to each exam.

Comprehensive Final Exam (220 points) The final exam will be cumulative over all course material.

Academic Integrity/Cheating

Cheating is a problem that I hope I will not have to deal with in this course. Violations of the Academic Integrity code include plagiarism, cheating, and other forms of academic dishonesty. The minimum penalty for violations of this policy is a grade of "F" in the course. In addition, University policy states that formal disciplinary probation, suspension, or dismissal may also occur.

Disabling Conditions

The University seeks to fully comply with the Americans with Disabilities Act. Students who may require classroom or testing modifications must discuss this matter with the instructor as soon as possible. Appropriate documentation must be provided before accommodations can be made. Contact the Office of Accessibility, 105 Simmons Hall, for further information.

Being a Customer in Principles of Chemistry II at UA

A University is like a Health and Fitness Center for your Brain.

When you pay tuition to an academic institution such as UA, it is like paying fees to join a Health and Fitness Center. UA is a place to exercise and develop your brain "muscle"; health clubs or fitness centers focus on exercising other muscles of your body. Your membership in a "mental exercise club" such as UA gives you the opportunity to take advantage of the resources UA makes available to exercise your brain just as joining a health club gives you the opportunity to take advantage of the health club's equipment and resources. Simply being a member of either "club" does not guarantee success. As with a health club, the benefit you gain from a "mental exercise club" depends on the amount, and more importantly, the quality of effort you exert.

Strategies to Avoid if You Want to Improve Your Performance

- Blame your problem or situation on anyone or anything else except yourself.
- Assume that your "rights" come without "responsibilities".
- Assume that pleading ignorance or begging forgiveness will "get you off the hook".
- Reject the idea that you need to explore different ways of learning.
- Rely on student folklore and rumors as your main sources of information.
- Underestimate the amount of time and effort required to master content material.
- Assume you understand a topic simply by recognizing or recalling a word or phrase.
- Think that plugging-and-chugging through the math shows you understand the concepts.
- "Psych yourself out": Convince yourself that you just aren't "the type" to learn chemistry.
- Believe that your learning depends on "liking" the instructor or the instructor "liking" you or that you can't understand or learn from those who speak with an "accent" (refer to the first item on this list).

Strategies That Can Help Improve Your Performance

It is normal to feel a bit frustrated when learning something new. Only time, patience and practice will allow you to work through the frustration and to learn new things.

Attend Lectures: Listen and Participate

- "True" learning usually does not occur by seeing something once or watching someone else do the work. Learning something well requires repeated exposure and practice.
- Read the sections in your textbook that are relevant to lectures before and after lectures are given.

Review Lecture Information: Rewrite Lecture Notes, Review Notes with Your Study Group

- Use these techniques to provide yourself with repeated exposure to the topics.

Read Differently

- Read technical material (like your chemistry textbook) differently than you would read a novel. Read in short "chunks" and give yourself time to reflect and interpret the information presented. With technical material, it is often difficult to pick up the "story" in the second paragraph if you do not process the first paragraph.
- Read technical material in a "distraction free" environment. Processing technical information will be more effective in the absence of TVs, radios, headsets, etc.
- Read and interpret subheadings. With technical material, the subheadings often carry important information. This is different from the chapter titles in a novel, which usually contain no information.
- Use the textbook as a reference when you study your lecture notes or lab materials. Fill in any gaps and correct any incorrect information.

Practice, Practice, Practice

- For some students, the material in CHEM 153 will seem like a review of what you studied in high school. However, you may not remember the information well enough to be able to work quickly and accurately during a timed exam.
- Work additional problems at the end of each chapter that were not assigned as homework.
- Work problems on previous exams without the answers. (You will not have the safety net of answers during an exam.) Check your answers only after you have completed all of the problems you plan to work. Work as many problems as you can.
- Look for similarities and differences in problems (homework, recitation problems, lab problems, previous exams). Classify problems by the type of knowledge that is needed to solve the problem rather than by section number in the text.

Ask Questions

- Take advantage of the fact that we want to see you do well and are happy to answer any of your questions. However, we cannot read your minds—if you need help, you need to let us know!

Don't Procrastinate!!

- Learning new things and being able to work with those ideas quickly will take time and practice. Work several problems each day but don't spend hours trying to work a problem if you are getting nowhere. Make a note and seek help with the problem within the next day or two during office hours.
- Do not try to master several weeks of technical material like chemistry the night before the exam—despite what you might hear from other students, this simply does not work. Even if you have the information in your short-term memory, you will only forget the material and have to relearn it for later exams.
- Get sufficient rest to help maintain your physical and mental health. Staying up all night before an exam actually produces lower exam scores than studying the course material regularly and getting a good night's sleep before an exam.

Consistent daily study and problem solving are essential for your success in this course. Research shows that to succeed in chemistry, students usually need to spend two hours studying outside of class for every hour spent in class. It is expected that a minimum of six hours per week is required for proper preparation for this class (not including Qual lab).

OBR Use

Action

Approved	
Additional Information Requested	
Rejected	
Date	