



University of Wisconsin Madison

Chemical Principles II (CHEM 116 section 001) Syllabus

COURSE INFORMATION

Chemical Principles II
CHEM 116 001 (5 Credits)
Spring 2017-2018 [1184]

Description

Continuation of Chemistry 115. Chemistry 115 and 116 satisfy the requirements for general chemistry and introductory analytical chemistry; lecture, lab, and discussion.

Prerequisite(s)

Chem 116 Student Group Required

Breadths

P - Physical Science

Department: CHEMISTRY

College: Letters and Science

Canvas Course URL

<https://canvas.wisc.edu/>



2017-2018 Spring [1184]

Term Start Date: Tuesday, 23-Jan-2018 Term End Date: Friday, 18-May-2018

Location and Schedule: Chemistry Building 2373 MWF 8:50 AM-9:40 AM

CRN: 224002758

Instructional Mode

Blended

How the Credit Hours are Met

This is a 5 credit class that meets three times weekly for 50-minutes, plus students participate in a lab section (3 hours per week) for this class. Over the course of the fall/spring semester, students are expected to do a total of about 225 hours learning activities which includes class attendance, lab attendance, reading, studying, preparation, problem sets, lab reports and other learning activities.

INSTRUCTORS AND TEACHING ASSISTANTS

Instructor



Mark EDIGER

EDIGER@CHEM.WISC.EDU

Instructor Availability

Tuesday 4:30 pm and Thursday 3:30 pm, other times by appointment, or try just stopping by

TA Office Hours

Tesia Janicki, tjanicki@wisc.edu, Office hours in General TA office/desk 39: Monday 4 pm and Thursday 4 pm

GRADING AND COURSE MATERIALS

Course Learning Outcome

- The course will begin with thermodynamics, and then apply thermodynamics to: basic physical equilibria, chemical equilibria, acids and bases, solubility/precipitation equilibria, and electrochemistry. Chemical kinetics will follow. At the end of the course, students should be able to apply the laws of thermodynamics to physical and chemical systems.

Grading

Grading:	
Three exams (@120 points each)	360 points
Final exam (Cumulative)	140
Problem sets	200
First six weeks of lab	150

Research lab work/presentation	<u>150</u>
TOTAL	1000 points

You must complete the laboratory to pass the course. There is no set quota of any particular grade and thus you are not competing with your classmates in this course. I will assign final course grades, in consultation with your teaching assistant, taking into account participation in class, discussion, and the laboratory.

Discussion Sessions

I know this occurs early in the morning but past students have found this really helpful. You will work through problems related to the problem set and current lecture material. Occasionally, material not presented in lecture may be discussed and the exams may draw on this as well.

Laboratory Sessions

For the first **six** weeks of the semester, you will meet in the teaching lab on *either* Tuesday or Thursday morning. You must come to laboratory prepared. Before coming to the lab, you must read and understand the procedure and complete the prelab assignment, if there is one. You must keep a laboratory notebook providing a detailed record of your primary data. A laboratory notebook with provision for making copies is required; your notebook from Chem 115 will suffice if enough pages remain. Instructions for preparing reports will be given in your lab manual.

For the next **8** weeks of the semester, you will work in faculty research labs for at least 8 hours per week. This experience will culminate in a written research report and a class presentation on your research project. Class presentations will occur during the Tuesday/Thursday morning laboratory times during the last week of class.

Safety Goggles: You are required to wear safety goggles and lab coats at all times when in the laboratory.

Required Textbook, Software, & Other Course Materials

"Principles of Modern Chemistry", 6th ed., by D.W. Oxtoby, H.P. Gillis, and A. Campion. I expect you to read the textbook before class. During our regular class periods, I will ask questions and you should be prepared to answer. Each student in the class will be a part of one of three groups, based on the first letter of last names. On Mondays, I will call on A-F; on Wednesdays, G-K; on Fridays, M-Y.

EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK

Exams, Quizzes, Papers & Other Major Graded Work

There are three mid-term exams (7-9 pm) and a final exam, as listed in the course outline. *We will have 8:50 am class on exam days.* If you feel that a problem on the exam has not been graded correctly, you should contact the instructor or your TA within three days after receiving your exam.

Conflicts: If a religious observance conflicts with any scheduled activity, please notify me at the beginning of the semester. We will schedule a makeup activity or otherwise accommodate you.

Homework & Other Assignments

You will receive a problem set about once per week. Problem sets will be due at the end of class on the designated day; late problem sets will not be accepted. The TA will grade your solutions to selected problems and provide solution sets. You should be prepared to discuss the problems in your discussion section. I encourage you to work with other students on the problems, but you must hand in and take responsibility for your own solutions.

OTHER COURSE INFORMATION

Other Course Information

Course Outline -- Chemistry 116

Thermodynamic processes and thermochemistry (Chapter 12)
Spontaneous processes and thermodynamic equilibrium (Chapter 13)

EXAM I 7-9 pm Weds, Feb. 28

Chemical equilibrium (Chapter 14)
Acid-base equilibrium (Chapter 15)

EXAM II 7-9 pm Weds, Apr. 4

Solubility and precipitation equilibria (Chapter 16)
Electrochemistry (Chapter 17)

EXAM III 7-9 pm Weds, Apr. 25

Chemical Kinetics (Chapter 18)
Student Research Talks

FINAL EXAM 2:45 pm Thursday, May 10

ACADEMIC POLICIES



ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to <https://conduct.students.wisc.edu/academic-integrity/>



ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." <http://mcburney.wisc.edu/facstaff/other/faculty/syllabus.php>



DIVERSITY & INCLUSION

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." <https://diversity.wisc.edu/>

Laboratory Schedule for Chem 116, 2018 Spring Semester

Laboratory Director:

Dr. Pamela Doolittle

pam.doolittle@wisc.edu

Office phone: 608-262-9679

Teaching Assistant:

Miriam Bohlmann Kunz

bohlmannkunz@wisc.edu

Stockroom Staff:

Dominic Colosi

Labs meet once a week either Tuesday (Section 302) or Thursday (Section 301) for the first six weeks of the semester. For the rest of the semester you should use this time block to forward progress on the research project. Your TA may schedule study and review sessions during this time as well, so do not schedule work hours or other commitments after the initial six week formal lab period is finished. You can find the Experimental descriptions in the Lab section of the content on Learn@UW. The lab schedule:

Week 1 (January 23/25)	Molecular Modeling
Week 2 (January 30/February 1)	Fluoride Ion Selective Electrode *(Individual lab exercise)
Week 3 (February 6/8)	`Synthesis of Biodiesel*
Week 4 (February 13/15)	High Pressure Liquid Chromatography*
Week 5 & 6 (February 20/22 & February 27/March 1)	A Study of an Unknown Acid * (Individual lab exercise)

**Complete the online laboratory quiz BEFORE coming to lab. Access to the quiz will close at the lab start time.*