

Chemistry 425 – Analytical Chemistry I

Fall 2022

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Home Page: <http://course1.winona.edu/mengen/>

Course Description: Analytical Chemistry I

An in-depth study of the basic principles of analytical chemistry including statistics error analysis. The first semester covers principles related to equilibria, acid/base chemistry, titrations and electrochemistry. Laboratory work includes basic chemical analysis and techniques related to the topics covered.

<u>Lecture:</u>	425 (525)	T, Th	9:30-10:50	PA 329 Engen
<u>Labs:</u>	425-1	T	12:30-3:20	SL 364 Engen

Texts Required: “*Fundamentals of Analytical Chemistry.*” Skoog and West, Cengage Learning, 9th Ed.; Part of a **Cengage Unlimited** membership.

Course Details and Requirements:

In order to do well or pass the course, the student is expected to attend and participate in the lecture-discussion periods, complete and turn in the assigned laboratory studies, read the assigned chapters, work assigned problems, and pass quizzes and exams. **No make-up exams, quizzes, homework or class assignments will be given without prior approval or an “officially excused absence”.** Read “[Academic Integrity Policy](#)” on page 27 of the 2010-2012 catalog. Academic integrity is expected and will be enforced. Additionally, We as faculty members in Winona State’s Chemistry department, recognizing the importance of role models in our students’ education, are going to make a concerted effort to add short stories about the scientists behind the chemistry discussed, particularly when these scientists are members of underrepresented group.

Guaranteed Grade Assignment Scale

90 %	A
75 %	B
60 %	C
50 %	D

Marking Distribution

Lab	25 %
HWK	15%
Packets	15 %
Exams (3)(15% each)	45 %

Laboratory:

- Laboratory attendance is mandatory. Missing two or more laboratory sessions will result in failure of the class.
- All laboratory information is on the class web page.
- Written group lab reports will be scored on a 100-point basis and will be due at assigned times. Late reports will lose 10 points per day late.
- Details for lab report format will be provided by the instructor.
- Your laboratory instructor will provide you with additional detailed instruction as to what will be expected.

Safety Goggles are Mandatory in the Laboratory!

Class Work

Class attendance is of the utmost importance. Class time will be spent working problems to a great extent. You will need your laptop on many occasions in addition to a calculator so bring both.

Packets

A packet will be provided for each chapter. Packets will include definitions, discussions, and problems from each assigned chapter. Packets will be scored based on completion and will count toward **15% of your overall score**.

Homework

Homework will be administered through the Cengage OWL platform. There will be a reading assignment and problem assignment from each chapter. The reading assignments are not scored. The problem assignments will be pass/fail based on a percent completion. The percent completion required may vary, therefore take note when doing homework assignments. **Homework will account for 15% of your overall score.**

Exams

~~Three~~ Two semester exams and a final exam will be given. An approximate date for each exam is listed in the schedule. The final is cumulative. **Exams account for 45% of your overall score.** The best way to prepare for the exams is to stay current on the homework assignments. There is a strong correlation between the amount of homework completed and exam scores.

Tentative Course Outline for Chemistry 425

Fall 2022

Week	Week of	No Class	Laboratory Experiments	Chapter(s)	Exams (Approximate Dates)
1	08/22		No Lab	1	
2	09/29		Check-in	2-8	
3	09/05		Experiment 1 – Calibration of Volumetric Glassware		
4	09/12		Experiment 5 – Statistical Evaluation of Acid/Base Indicators		
5	09/19		Cont.		
6	09/26		Experiment 6 – Preparation of Standard Acid and Base	9-11	Exam I
7	10/03	T(10/04)	No Lab		
8	10/10		Lab Skills Test - Analysis of Unknown Mixtures		
9	10/17		Cont.		
10	10/24		Total Alkalinity and	13-16	Exam II
11	10/31		Hardness of Local		
12	11/07		Watershed with Statistical		
13	11/14		Evaluation		
14	11/21		Thanksgiving Week		Exam III
15	11/28		Check-out		
16	12/05		Finals Week		<i>Final Exam (Wed. 12/07/22 from 1:00 -3:00 p.m.)</i>