

Intermediate Inorganic Chemistry, Chem 3360 Fall 2021

Lecture (Manion 102): TTh 8:00 – 9:15 am CRN = 10569

Instructor Dr. Patrick Desrochers
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Web Page: accessible anywhere outside Blackboard
<http://faculty.uca.edu/patrickd/chem3360/main3360.html>
username = chem3360 password =

Q&A study sessions **Drop in times: These will be determined based on class survey results.**
Other times by appointment (call or email). **Use this time.** It works best if you come prepared with specific questions about lecture or homework. Some of these will be via Zoom.

Face-to-face and covid All will wear a mask during lecture. I strongly encourage all to also be vaccinated. Lectures will be face-to-face. Be responsible, do your part to prevent infections of others and especially any who cannot be vaccinated.

Text *Descriptive Inorganic Chemistry* (5th Ed.) by G. Rayner-Canham & T. Overton, Freeman ©2010.
ISBN: 9781429218146

Grading	category	points	your % in category	points in category
quizzes (weekly)		30		
literature studies		10		
exams		40		
final exam (Dec 9, 8 am)		20		
TOTAL POSSIBLE		100		

Use your pct to determine your points in each category.

YOUR TOTAL =

The lowest quiz and hour exam will be dropped. Final exams may not be dropped.

Grades: A 89 - 100 points B 79-88 C 69-78 D 57-68 F < 57

Consult my webpage for examples of grade calculations.

UCA adheres to the requirements of the Americans with Disabilities Act. A student with a documented disability (e.g., physical, learning psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must at the beginning of the semester contact the instructor and UCA Office of Disability Services at 450-3135.

Course Description Extension of principles of chemical structure, periodicity, and applications of inorganic systems to industrial, environmental, and biochemical processes. Three hours of lecture per week. Counts towards the non-ACS chemistry major or a general science major; counts as core inorganic in the ACS-certified biochemistry major. Elective option for the ACS-certified chemistry BS degree: Standard Track. Prereq: At least a C in CHEM 1451.

Course Objectives Survey of physical and chemical properties of the elements; describe trends using the laws of periodicity. Use tools from general chemistry—atomic structure, electron configurations, Lewis dot/VSEPR, Lewis acids/bases, thermodynamics (K_{eq} , ΔG , E), and oxidation numbers—to understand this periodicity. Use the chemistry of representative elements to understand important industrial, biological, and environmental processes.

Exams and Quizzes Will be face-to-face during class time.
Quizzes are always announced at least one class period before.

Literature Studies You will periodically be asked to peruse the current chemical literature (2021 articles only) and prepare a brief written summary of an article that illustrates some topic related to current lecture discussions. Requests for these will be announced in class. Completed studies must have your name in the file, the title of the article, including authors and journal name, published year, volume, page(s). *ASAP* articles (ACS journals) must include the date. You may also include the DOI number for quick referral. It must also include at least three sentences in your own words (*do not* cut and paste from the article) specifically explaining how this article illustrates some of the current chemistry being discussed in lecture. **Consult website for an example.**

Video Recordings Prerecorded content videos. Watch these before face-to-face lecture discussions. These are posted as a link on BB and the daily outline. They are designed to be used in addition to reading the assigned sections in the textbook. My prerecorded explanations are insufficient to satisfy all learning styles.

Lecture time 8:00-9:15p I will show demos, we will discuss and answer questions, clarify points and work LOTS of problems. I will also expand on ideas introduced in the prerecorded videos. I am looking forward to this time to be able to relax and work problems that apply what you learn from careful reading of the book and watching my recordings. You will also be broken into smaller groups to work problems together.

Class Participation Each lecture discussion will have 1-3 short questions you will access using a QR code and your cell phone. The code will appear during lecture. All phone cameras now also double as QR readers. Be sure you know how to use a QR code with your phone by testing the ones at the end of this syllabus. Collectively this participation will equal one quiz grade.

Communication If snow or online The daily outline is my go-to for this. Check it daily. There I will post any regular announcements should we move to online with covid or because of inclement weather.

Policies 1. Attendance

People who miss classes typically do poorly in this course. Do not be one of these people. Students are responsible for obtaining information covered during an absence.

2. Homework

Homework problems to work and develop your mastery of material discussed in lecture and the text are listed on the Lecture Schedule. Your success on timed exams and quizzes is directly related to the effort you spend working and *understanding* all of these problems.

3. Makeups

No makeup quizzes or exams will be offered. A missed quiz or exam will be dropped as your lowest score.

Additional university policies and announcements are summarized on the last page of this syllabus.

Students should read these announcements and be familiar with the policies they describe.

DO NOT risk this. As chair, I also sign these and have seen nearly every imaginable situation. These go on your permanent academic record, with the ramifications that go with it.

University of Central Arkansas, Board Policy No. 709, adopted February 2010

ACADEMIC INTEGRITY VIOLATION FORM

Instructor Desrochers Date _____
Department Chemistry & Biochemistry

Student _____ Student ID _____

Course: _____
CRN 10569 Fall 2021 Prefix & Course Number CHEM 3360
Course Title Intermediate Inorganic Chemistry

Alleged Violation:

Student used Chegg and other online tools to cheat on exam questions.
Student worked with classmates to answer exam questions.
Student copied answers from classmates and offered them as their own on quiz #4.

Explanation:

During a timed exam, the student posted a question from the exam on Chegg. Review of the student's webcam image shows their thumb over the webcam at exactly the same time the question was posted online on Chegg.

Course-Related Penalty:

Zero points on exam or quiz.
Failing grade for the course, despite previously earning solid B's on other exams.

Other Suggested Penalty (optional):

Negative recommendation for medical school, pharmacy school, nursing school (name the school). Why would a med-career trust this student to handle/administer narcotics if they cannot be trusted not to cheat on an exam or quiz in college.

_____ INSTRUCTOR'S SIGNATURE	_____ DATE
_____ DEPARTMENT CHAIR'S SIGNATURE	_____ DATE
_____ GRADUATE DEAN'S SIGNATURE	_____ DATE

Lecture and Exam Schedule

Date	Topic refer to Daily Outline	Assigned reading	Practice Homework
Aug 19	Atomic structure, e config, orbitals	Ch 1	1.1 – 2, 4 – 22
24	Periodic table trends (r, IE, EA) Aug 25: final date for drop/add	Ch 2	2.3, 5-6,9,11,12,17,19-22,27-28,30-33,37
26	Thermodynamics	Ch 6	6.1 – 10, 22, 29, 35,36a,44
31	Oxid No.'s, bal. redox, $\Delta G = -nFE$	Sec 8.1 – 8.8	8.3 – 8, 10 – 26, 36
Sep 2	Hydrogen	Ch 10, Sec. 3.2 – 3.3 MO's, H econ p 122, p 191 – 192	3.3, 10.1, 3, 6-8, 10,11, 14, 18-21,27
7	Exam 1 (Ch 1,2,6,8,10) Sep 9: final drop with 75% refund		
9			
14	Ionic sphere packing, ionic survey Haber	Sec 4.3 – 4.5, Ch 5	4.7, 9 – 12, 19, 5.2 – 11, 14,17,19-21,30
16		Sec 6.1 – 6.3	6.13, 6.18 – 19, 6.22 – 24
21	Li family	Ch 11, Sec. 9.1 – 9.4, p 197, p 203	11.1,3-4,7-8,11,16,17,20,25,27,9.9b, 9.15
23			
28	Be family	Ch 12, Sec. 9.2 – 9.4, p 197, p 203,	12.1– 6,9,11,15,16,18-19,22,28,30,9.8,10, 36
30			
Oct 5	Exam 2 (Ch 4,6,9,11,12)		
7	Covalent, shape, polarity	Sec 3.1, 3.6 – 3.12	3.11-24,27-34,41,42
12	Boron family	Ch 13	1,2,7-14,18,19,22,24,25,29,32,35,39
14			
19	Carbon family	Ch 14, Sec 8.1 – 8.8	14.1,5-8,11,12,14-18,22-27,29,30,33-37,
21	FALL BREAK -- NO CLASSES		43,45,49,50,52,53,56,58
26	Oct 27: Adv. Reg. starts	for Spring 2022	
28			
	Nitrogen family	Ch 15, Sec. 3.2 – 3.4 MO's,	15.1-5,7,8,11-19,22-31,33-35,38,42,43,46,
2	Exam 3 (Ch 3,8,13,14,15) Nov 5: Final date for W grade	Sec 8.1 – 8.8	49,51,52,58,61-62 16.1-4,10,11,13,14,16-18,21,27-29,31-34,
4			
9	Oxygen family	Ch 16, Sec. 3.2 – 3.4 MO's,	36,38,40,41,46,47,50,53,54,66
11			17.3-5,8,10-12,14-17,19,21,22,24,25,30,31,
16	Fluorine family	Ch 17, Sec 8.1 – 8.8	35-37,40,44,45,48,49,52,53
18	TM coord chem, ligands, M^{n+} , d^n	Ch 19, Sec 7.4, 7.6-7.7	
23	CN 6, 5, 4		19.1-7,13-20,22,25,26,28,29,33
25	THANKSGIVING BREAK		
30	color and magnetism		
Dec 2			
Dec 9	8:00 – 10:00 am Comprehensive Final Exam		

University Academic Policies

Academic Integrity The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Disabilities Statement The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Disability Resource Center, 450-3613.

Building Emergency Plan An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at <http://uca.edu/mysafety/bep/>. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX Disclosure If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs, and the obligation to conduct an investigation will depend on the specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: <https://uca.edu/titleix>. *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Course Evaluations Evaluations are kept completely confidential. Your thoughtful feedback is highly valued and cannot negatively or positively affect your course grade. Over the years this information has changed and improved the instruction of this course.

Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may evaluate courses they are taking starting on the Monday of the thirteenth week of instruction through the end of finals week by logging in to myUCA and clicking on the Evals button in the top right.



2021-22 Student handbook



Laney Manion Hall
Building emergency plan