

Chemistry 3610

Inorganic Chemistry Spring 2021

Lecturers

Adam S. Veige, CLB 412b email through canvas course site

Daniel R. Talham, CLB 412a email through canvas course site

Office Hours

Adam S. Veige

January 11th to March 3rd: M and F Periods 5 and 6

March 5 to April 23rd: M Period 4

Daniel R. Talham

January 11th to March 3rd: M, W Period 8

March 5 to April 23rd: M, W Period 8; W, F Period 6

Teaching Assistants

Ushnish Mandal, email through canvas course site

(Office hours: T, R 3:00 p.m. – 4:30 p.m.)

Gabrielle Donalson, email through canvas course site

(CLB 410: Office hours: T, R 9:00 a.m. – 10:30 a.m.)

Lecture Hours

Section **28161** is a face-to-face and will meet M, W, F period 7.

Section **11039** is 100% online and asynchronous.

Textbook:

Miessler, G. L. and Tarr, D. A., *Inorganic Chemistry 5th Ed.*

Supplementary Text:

Wulfsberg, G. *Foundations of Inorganic Chemistry* 2018.

Additional readings from this text will be made available on the UF e-learning site Canvas: <https://lss.at.ufl.edu/>

Covid statement

For section 28161 we will have face-to-face instruction. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- **You are required to wear approved face coverings at all times during class and within buildings.** Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 symptoms, please use the UF Health screening system and follow the instructions on whether you are able to attend class.

- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

Our class sessions may be audio-visually recorded for students in the class to refer back to and for the online class section 11039. On Zoom: Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who unmute during Zoom sessions and participate verbally are agreeing to have their voices recorded. *Zoom Office Hours will not be recorded.*

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the 'chat' feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

As in all courses, unauthorized recording and unauthorized sharing of recorded materials are prohibited.

webcam/microphone/speakers

You are required to have a functioning webcam, microphone, and speakers for proctored exams. See the minimum technical requirements at honorlock.com/support. Ensure your computer system meets their minimum system requirements.

Course Learning Objectives

Students will:

- 1) Understand the composition of atoms
- 2) Gain a working knowledge of symmetry and group theory
- 3) Apply group theory to solving the electronic structure of inorganic complexes
- 4) Apply group theory to understanding the spectroscopy of inorganic complexes
- 5) Understand the periodic trends of inorganic aqueous ions
- 6) Learn to draw, recognize, and assign the 3-dimensional structure of inorganic complexes
- 7) Understand the interaction between ligands and metal centers
- 8) Learn the reaction mechanism of coordination complexes and apply kinetics and solve rate equations
- 9) Assimilate new knowledge and apply it towards solving problems centered on inorganic structure and bonding and the physical properties of coordination complexes

Topics and associated reading:

Introduction	Chapter 1 (Independent reading and problem set)
Atoms and Periodic Properties	Chapter 2
Simple Bonding Theories	Chapter 3 (omit 3.2.4)
Symmetry and Group Theory	Chapter 4, sections 4.1-4.3
Molecular Orbitals	Chapter 5, sections 5.1-5.4.6
Aqueous Ions	Wulfsberg Chapters 2 and 3
Acids and Bases	Chapter 6, sections 6.4-6.4.2; 6.6-6.6.1
Redox Chemistry	Wulfsberg Ch. 6, sections 6.1; 6.2A,B; 6.3; 6.5A,B.
Coordination Chemistry	
Introduction	Chapter 9, sections 9.1-9.3.5
Bonding	Chapter 10, sections 10.1-10.3; 10.4.4; 10.5-10.6
Spectroscopy	Chapter 11, sections 11.1; 11.3.1; 11.3.7-11.3.8
Reactions	Chapter 12, 12.1-12.3, 12.8
Inorganic Solids	Chapter 7, sections 7.1 – 7.3
Bioinorganic Chemistry	TBA

This syllabus represents our current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

Examinations

Progress Tests (TBA: We are waiting for confirmation from the registrar to schedule these exams)

Cumulative Final Exam: **April 29th, 10:00 – 12:00 pm**

Three progress exams and one cumulative final exam are administered in Canvas. These exams are remotely proctored by Honorlock. Each progress test is one hour in duration. The course material builds on itself, so progress tests are necessarily cumulative in nature. The cumulative final exam is two hours.

Exam questions may include numeric entry, formula/algorithmic questions, multiple dropdown, matching, multiple answer, multiple choice and multiple fill in the blank questions, as well as short free-style answers

Grading

Progress Tests	250 points (two best scores plus ½ of lowest score)
Problem Sets	100 points
<u>Final Exam</u>	<u>150 points</u>
Total	500 possible points

The following anticipated grade cut-offs will not be raised: From 500 total points, A(440), A-(420), B+(400), B(380), B-(360), C+(340), C(320), C-(300), D+(280), D(260), E (<260).

****Note:** you have two weeks to request a re-grade of an exam or problem set.** After two weeks the score will be final.

There is no extra credit available for this course. We do not anticipate rounding grades at the end of term and exam grades or course grades are not curved. Take care to complete each assignment prior to its advertised due date and to submit assignments as directed. Contact the UF Help Desk for help as needed with Canvas.

To review the current UF grade point equivalencies go to:
<https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Conflict Exams

CHM 3610 manages all conflicts with scheduled assessments and examinations in accordance with University policy.

<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Exam absences will be handled in accordance with official UF academic regulations. For more information, see <https://catalog.ufl.edu/UGRD/academic-regulations/>. See below for further clarification for two different types of situations.

(1) Unavoidable absences by students from examinations are allowed if properly documented and disclosed to the instructor at least one week prior to the anticipated conflict. Permitted absences may include, but are not limited to: religious observances, sanctioned sporting events, and other UF exams if the other course has a higher course number than CHM 3610. In all such cases, students will be given the opportunity to take an early conflict exam. For more information on such absences see the official UF Policy at <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/#absencestext>). If you must be absent for an exam due to a documented and approved conflict known in advance, you must e-mail your instructor (within Canvas) the documentation at least one week prior to the scheduled exam and an **early conflict exam** (i.e. before the regular exam date) will be scheduled for you.

(2) Missing an exam due to an emergency or sudden illness: If you are absent for an exam due to an unpredicted documented medical reason or family emergency, you must contact the instructor as soon as possible, and you may be asked to have your excuse verified by the Dean of Students Office (DSO). Your instructor will follow UF academic regulations in evaluating the notification and/or documentation received from you or from the DSO on your behalf. Once your instructor is satisfied with the validity of your exam absence a make-up exam will be scheduled after a reasonable amount of time, i.e., before the end of

the semester. If your documentation is deemed insufficient to excuse your absence you will receive a zero on the missed exam.

Honorlock

Honorlock will proctor your exams this semester. You do not need to create an Honorlock account, download software, or schedule an appointment for your exam. Honorlock is available 24/7 and requires a computer, webcam, microphone, and a stable internet connection.

To get started, you will need Google Chrome to download the Honorlock Chrome Extension. You can download the extension at www.honorlock.com/extension/install.

When you are ready to test, log into Canvas, go to your course, and select your exam. Click “Launch Proctoring” to begin the Honorlock authentication process, during which you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will record your exam session and record your screen.

If you encounter technical difficulties with Honorlock, contact Honorlock directly. You may live chat, phone (855-828-4004) and/or email support@honorlock.com. You should spend some time reading about their service and testing your system on their website. For other technical issues contact the Help Desk.

Extensive Honorlock documentation, including a student privacy guide, is available at <https://dce.ufl.edu/services/online-proctoring/>.

General Questions

General course questions should be posted to the Q&A Discussion boards in Canvas. The instructor/TA response time is 24 h during the work week (expect to wait until Monday for questions posted on a Friday).

Personal and Grade-Related Questions

Direct your initial inquiry to one of the two TAs. If additional input is required the TA will consult with instructors Dr. Talham and/or Dr. Veige. Direct these questions to your TA via the mail function in Canvas. Do not email outside of Canvas to your instructor’s external email address – we are not permitted to discuss grade related questions outside of Canvas. You will be asked to resend the query through Canvas.

For personal discussions email Dr. Talham or Dr. Veige through canvas.

Lecture

Chemistry 3610 will survey modern inorganic/organometallic concepts of bonding, reactivity, and physical properties.

Problem Sets

Problem sets will be assigned at intervals of approximately one week. Problem sets submitted after the due date and time but on the same day will be assigned a grade of M (5 pts). Problem sets handed in after the due date will not be graded (0 pts). Solutions will be provided.

Grading: Problem sets will be graded as follows
Satisfactory: S (10 pts)
Marginal: M (5 pts)
Unsatisfactory: U (0 pts)

Satisfactory (S) problems were attempted and there is an obvious understanding of the material demonstrated. (i.e. just attempting a question is not satisfactory)
Marginal (M) grade will be assigned for sloppy work, not attempting a problem, if a significant portion is incorrect.
Unsatisfactory (U) majority of the problem sets is incorrect.

Class Attendance This course has an inperson section 28161 and an exclusively online section 11039. Recorded lecture material will be made available as the course develops. Students are advised to review the lecture materials and then attend the many office hours to engage in discussion with the instructors and TAs.

UNIVERSITY POLICIES

University Policy on Accommodating Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting disability.ufl.edu/students/get-started. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida. The following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the

University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

<http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.”

U Matter, We Care

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing Staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Feedback

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Netiquette

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats. A detailed guide is posted under the *Settling In* section in Canvas.

getting help

For issues with or technical difficulties with Canvas, contact the UF Help Desk:

<https://lss.at.ufl.edu/help.shtml>; (352)-392-HELP.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for Counseling and Wellness resources, disability resources, resources for handling student concerns and complaints, and library desk support.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:

<http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus:

https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.