

## CHM 3610: INORGANIC CHEMISTRY

Fall 2016      Location: Leigh 207      MWF 9:35AM – 10:25AM (Period 3)

**Instructor:** Prof. Leslie Murray

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Office hours: Mon 10:30AM – 11:30AM

Tues 3:00PM – 4:00PM

Thurs 8:00AM – 9:00AM

**Graduate TAs:** Ricardo Ferreira

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Ushnish Mandal

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Thurs 3:00PM-4:00PM

**Undergraduate TA:** Grace Hester

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Office Hours: Thurs 3:00PM-4:00PM

**Course Description and Objective:** to provide an introductory understanding to inorganic chemistry

### Required Text

1. Miessler, G. L. and Tarr, D. A., *Inorganic Chemistry 5<sup>th</sup> Ed.*
2. The required text will be supplemented with handouts, specific topics covered by recommended/reserve texts, and references to the primary and secondary literature.

### Recommended or Reserve Texts (freely available through the UF library website portal)

1. Shriver & Atkins' *Inorganic Chemistry 5<sup>th</sup> Edition*
2. Cotton, F. A., *Chemical Applications of Group Theory*
3. Cotton, F. A., Murillo, C. A. and Bochmann, M., *Advanced Inorganic Chemistry 6<sup>th</sup> Ed.*
4. Greenwood, N. N. and Earnshaw, A. *Chemistry of the Elements 2<sup>nd</sup> Ed.*
5. Wulfsberg, G., *Inorganic Chemistry*

### Grades

Grades will be based on three exams during the semester (100 points for each exam), and the final exam (200 points). For information on UF's Grading Policy, see:

<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html> and

<http://www.isis.ufl.edu/minusgrades.html>

Course grades will be assigned on a curve with the following point totals used for guidance:

A: 500-451; A/B: 450-401; B: 400-351; B/C: 350-301; C: 300-251; C/D: 250-201; D: 200-151; F: <150

### Homework

Suggested problems will be assigned on a weekly basis and supplemental problems will be provided occasionally. These homework assignments will **not** be graded but provide excellent practice for the exams. Solutions to these suggested problems will be provided one week after they have been assigned.

### Exams

Exams will be administered in class and cover all prior lectures and assigned reading. An approved calculator, and pens/pencils only the only items that can be used during exams; that is, devices such as smart phones, phones, computers, and tablets during exams is strictly prohibited. Use of non-permitted items will result in **zero** points awarded for that exam without exception. Make-up exams will be administered only if absence from the scheduled date satisfies the criteria outlined in the "Attendance and Absence Policy" section (vide supra) and

must be documented (i.e., doctor's note). To receive a make-up exam, the student must notify the instructor and provide appropriate documentation **at least one week in advance** for predetermined absences (e.g., official university activity) or as soon as possible for unexpected absences (e.g., sickness). Failure to notify the instructor in the timeframes indicated (one week for planned, asap for unexpected) will forfeit the student's access to a make-up exam. Beyond these extenuating circumstances, **make-up exams will not be provided**. The final exam will cover the material from the entire semester, with a slightly greater focus on the material covered after the third exam. The in-semester exams will include one or more unedited questions from the suggested problems.

**Exam 1 (100 points)**

**Friday, September 23, in class**

**Exam 2 (100 points)**

**Wednesday, October 19, in class**

**Exam 3 (100 points)**

**Wednesday, November 16, in class**

**Final Exam (200 points)**

**Thursday, December 15, 3:00PM–5:00PM**

### **Attendance and Absence Policy**

Attendance will not be included in student assessment but is **strongly** advised as the in-class discussion may diverge from the text. Acceptable reasons for absence from class include illness\*, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, court-imposed legal obligations (e.g., jury duty or subpoena), and participation in official university activities such as music performances, athletic competition, or debate.

\*The university's policy on appropriate documentation of absence due to illness can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx> and

<http://shcc.ufl.edu/forms-records/excuse-notes/>

### **Academic Honesty**

Students are required to be honest in their coursework. Any act of academic dishonesty will be reported to the Dean of Students, and may result in failure of the assignment in question and/or the course. For University of Florida's honor code, see <http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php>.

### **Accommodations for Students with Disabilities**

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Contact the Disability Resources Center (<http://www.dso.ufl.edu/drc/>) for information about available resources for students with disabilities.

### **Other Resources: 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](mailto: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.

**Topics & associated reading:**

The Elements, Atomic Structure, and Periodic Properties

Chapter 1

Electrochemistry and Redox Chemistry

*lecture notes*

Ionic Bonding

Chapter 7: 7.1–7.2

Crystal Field Theory

Chapter 10: 10.2.1

Symmetry & Group Theory

Chapter 4: sections 4.1–4.3

Molecular Orbitals

Chapter 5: 5.1–5.4.3

Acids and Bases

Chapter 6: 6.4–6.4.1, 6.6–6.6.1

Ligand Field Theory & Coordination Chemistry

Introduction

Chapter 9: 9.1–9.3.5

Bonding

Chapter 10

Spectroscopy

Chapter 11

Reactions

Chapter 12: 12.1–12.4, 12.6–12.8

Band theory of solids

Chapter 7: 7.3

Organometallic Chemistry

Chapter 13: 13.1–13.3

Bioinorganic Chemistry

Chapter 14: 14.1.2–3, 14.2, 14.3.4

TBA