

**CHEM 1253.101**  
**Descriptive Inorganic Chemistry**

T TH 9:30-10:50 Dillard room 129

**Instructor:** Randal Hallford, Ph.D. Associate Professor of Physical Chemistry

**Office Hrs:** Posted online. Phone: 397-4187 [randal.hallford@mwsu.edu](mailto:randal.hallford@mwsu.edu)

**Web Page:** Portal community, D2L

**Textbook:** Mandatory: *Foundations of Inorganic Chemistry*. G. Wulfsberg. 1<sup>st</sup> edition.

**Supplemental Material:** Library reference materials, Student Solutions Guide.

**Prerequisite:** Completion of Math 1233 (College Algebra) and General Chemistry 1143, 1243.

**Graphing calculators** with large memory capacity, mathematical solution software and chemistry software are NOT allowed on exams. ***The use of such a calculator on an exam constitutes cheating.*** (scientific calculators are preferred - such as a TI-36A pro). *I may check the memory of any calculator during an exam. Cell phones may not be used as calculators*

**Cell Phones, PDA's and other electronic devices are NOT allowed** during an exam or quiz. **Cell phones must be OFF** during any scheduled class period.

<b>Grading:</b>	2 one-hour exams @ 100 pts each	200 (35.71%)
	1 final exam @ 200 pts	200 (35.71%)
	8 classwork @ 20 pts each (drop lowest)	160 (28.57%)
	<b>total possible</b>	<b>560 points</b>

**Grading Scale:** Grades will be assigned as follows:  
**A:** 90-100%; **B:** 80-89%; **C:** 70-79%; **D:** 55-69%; **F:** <55%  
*Under no circumstances will make-up exams or extra assignments be given. One missed exam may be made up based on the comprehensive final exam (substitute final exam score for the missed exam score) if unavoidable medical circumstances exist.*  
The evaluation of student material is the domain of the instructor. Standard grading policy is followed without exception. The class average will be determined by the performance of the class. We will adhere to MSU's standard policy. **Refer to the MSU website calendar for the final exam date.** <https://msutexas.edu/registrar/schedule/fall/index.php>  
Questions about the grading of any assignment should be brought to the instructor within *one week* after the assignment is returned. Scores are reported after each exam.

**Note:** By enrolling in this course, the student expressly grants MSU a "limited right" in all intellectual property created by the student for the purpose of this course. The "limited right" shall include but shall not be limited to the right to reproduce the student's work product in order to verify originality and authenticity, and for educational purposes. All materials associated with this course are copyrighted by MSU, the text publisher and the instructors, and may not be published on social media, websites or other means without the express written permission of MSU, the publishers and the instructors. This includes recordings of lecture material.

**Drop Policy:** Dropping from the course after the drop date assigns a grade of **F**.

**Attendance:** Attendance at the lecture is required. Students are responsible for all material presented in class and in assigned material. In-class exercises will not be provided outside of class.<sup>1</sup>

**Studying:** It is important to study outside of class on a regular basis; working problems is the best way to learn chemistry. Required problems will be assigned.

**Academic Dishonesty:** Cheating on any exam, quiz or lab report will be regarded as academic dishonesty and **will be subject to a zero on the test or a final course grade of F.** See calculator requirements above.<sup>2</sup>

The use of chatGPT or any AI supplements is considered misconduct in this course.

**General Education Statement:** Students in this course must demonstrate their competency in reading, writing, and fundamental math skills through satisfactory completion of all assignments.

**Americans w/ Disabilities Act Compliance:** If any student needs special accommodations, the Office of Disabled Student Services Clark Student Center, room 108 (397-4618), and the instructor will provide a reasonable and fair opportunity to perform in this class. Please inform the Student Service as early as possible.

**\*Tentative Lecture Schedule** *\*Right to modify schedule reserved! For modified content see the instructor.*

descriptive inorganic chemistry, review of quantum mechanics, bonding theories both in inorganic molecules and in the solid state, redox chemistry, descriptive main group and transition metal chemistry; ligand field theory, molecular magnetism and electronic spectra in transition metal complexes.

### Lecture Outline 9 Chapters

Chapter 9 The Reasons for Periodicity

Chapter 1 An Overview of Periodicity – student reading

Chapter 2 Monatomic Ionic Acid-Base properties

Chapter 3 Polyatomic Ions Acid-Base Properties

Aquifer and hydrated soil pH properties

Chapter 4 Solid State, crystalline and amorphous geologic chemistry

----- **exam 1**

Chapter 6 Reduction-Oxidation laboratory scale, water, wastewater and atmospheric reactions. Some EPA concerns

Chapter 10 Symmetry Group theory and energy relationships in symmetry

Chapter 7 Transition Metals metallocenes, therapeutics and dyes, spectroscopy of organometallics.

Chapter 11 MO theory ----- **exam 2**

**Final exam**

**Instructors Note:** *Remaining enrolled in this course means acceptance of this syllabus. This is a binding contract. You should read carefully all clauses about classroom behavior and subject material responsibilities.*

Homework sets offered contain materials that will be beneficial to you in terms of exam and quiz material. Failure to complete the assigned homework sets will increase the difficulty of the course. **It is the responsibility of the student to maintain an adequate schedule, complete homework in a timely fashion, and to attend lectures and exams!**

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<sup>1,2</sup> Refer to the MSU handbook for University policies about academic honesty and class attendance