

## CHEM 5710 – Advanced Inorganic Chemistry

Instructor: Tom Cundari (t@unt.edu)  
phone: 940-369-7753  
Class time: 9:30 – 10:50 AM, TR

As members of the UNT community, we have all made a commitment to be part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation.

### Course Description:

This course is designed to introduce students to various topics in inorganic chemistry. Emphasis will be placed on fundamental concepts and recent progress in the field. Topics to be covered are given below.

### Topics

- |                                  |   |
|----------------------------------|---|
| A. Transition Metal Chemistry    | C. Main Group Chemistry                   |
| a. Coordination Chemistry        | a. Light versus Heavy Main Group Elements |
| b. Electronic Spectroscopy       | b. Multiple Bonding in the Main Group     |
| c. Experimental Characterization | c. Inert Pair Effect                      |
| B. Organometallics               | D. Acid-Base Chemistry                    |
| a. Synthesis                     | a. HSAB Theory                            |
| b. Structure and Reactivity      | b. E&C Theory                             |

### Course Objectives:

*By the end of the course, you should be able to:*

- Apply key theories in inorganic chemistry
- Critically evaluate papers in inorganic chemistry
- Develop and defend (*i.e.*, orally and written) research ideas in inorganic chemistry, succinctly and clearly
- Have an increased awareness of the potential applications of inorganic chemistry principles to your graduate research area

### Course Requirements:

Attendance – Attendance is mandatory.

### Exams:

- There will be either one (1) or two (2) {depending on class progress and thus available time} hour-long exams at dates to be determined. Class exams will be announced well in advance.
- There will **also** be a **comprehensive** final exam. You **must** take the final to pass the class.
- There will **not** be any makeup exams.
- If the University cancels classes on the day of a scheduled exam, then the test is automatically scheduled for the **next class lecture** period.

### Course Grading:

A typical grading scale is used:           A - 90%   B - 80%   C - 65%           D - 50%

### **Disabilities Accommodation:**

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.

### **Additional Policies and Procedures:**

- Due to the online nature of the course, it is expected that all students will have reliable access to Zoom, either via computer or phone, for the duration of each seminar.

### **Attendance Policy:**

- Students are expected to attend all classes. If you must miss for a good reason – going to conference, major health event, etc. – please let me know as early as possible.

### **COVID-19 Impact on Attendance**

While attendance is expected as outlined above, it is important for all of us to be mindful of the health and safety of everyone in our community, especially given concerns about COVID-19. Please contact me if you are unable to attend class because you are ill, or unable to attend class due to a related issue regarding COVID-19. It is important that you communicate with me prior to being absent so I may make a decision about accommodating your request to be excused from class.

If you are experiencing any symptoms of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or [askSHWC@unt.edu](mailto:askSHWC@unt.edu)) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or [COVID@unt.edu](mailto:COVID@unt.edu) for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.

### **Additional notes:**

CLEAR has a webpage for students that provides Online Communication Tips (<https://clear.unt.edu/online-communication-tips>) that instructors can share with students and/or adapt for their own uses.

### **Minimum Technology Requirements**

- Computer
- Reliable internet access
- Speakers
- Canvas Technical Requirements: <https://clear.unt.edu/supported-technologies/canvas/requirements>

### **Technical Assistance**

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

- **UIT Help Desk:** [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm) (<http://www.unt.edu/helpdesk/index.htm>)
- **Email:** [helpdesk@unt.edu](mailto:helpdesk@unt.edu)

- **Phone:** 940-565-2324
- **In Person:** Sage Hall, Room 130
- **Walk-In Availability:** 8am-9pm
- **Telephone Availability:**
  - Sunday: noon-midnight
  - Monday-Thursday: 8am-midnight
  - Friday: 8am-8pm
  - Saturday: 9am-5pm
- **Laptop Checkout:** 8am-7pm

For additional support, visit [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-10554-4212710328) (https://community.canvaslms.com/docs/DOC-10554-4212710328)

### **Class Materials for Remote Instruction**

Additional remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a [webcam and microphone – faculty member to include what other basic equipment is needed] to participate in fully remote portions of the class. Additional required classroom materials for remote learning include: [list specific software, supplies, equipment or system requirements needed for the course]. Information on how to be successful in a remote learning environment can be found at <https://online.unt.edu/learn>.

### ***UNT Policies***

#### **ADA Policy**

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (<https://disability.unt.edu/>).

#### **Emergency Notification & Procedures**

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

#### **Acceptable Student Behavior**

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT's Code of Student Conduct (<https://deanofstudents.unt.edu/conduct>) to learn more.

**Student Evaluation Administration Dates**

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" ([no-reply@iasystem.org](mailto:no-reply@iasystem.org)) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (<http://spot.unt.edu/>) or email [spot@unt.edu](mailto:spot@unt.edu).

**Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)**

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

**DISCLAIMER:** The professor of this course reserves the right to alter at any time any of the information presented on this syllabus at his discretion.