COURSE INFORMATION

Welcome to CHEM 5210! Dr. Yan will be leading this class.

- Lecture: 11 am – 12:20 pm, M/W
  Chemistry 106

Instructor Contact Information

- Instructor:
  Dr. Hao Yan (Hao.Yan@unt.edu)

- Office hours:
  12:30 – 2:00 PM, M/W
  Chemistry 376

Course Objectives

This course is designed to provide students with the background knowledge and mathematical tools to understand theoretical aspects of quantum mechanics and how it is applied to quantum chemistry. Familiarity with undergraduate–level physical chemistry and calculus will be necessary.

Learning Outcomes

Define and describe the postulates of quantum mechanics
Interpret and evaluate literature involving quantum mechanical theory
Employ analytical or approximate methods to solve the Schrödinger equation for molecular systems and calculate their properties.
Identify and explain methods employed for quantum chemistry calculations.
These goals may be adapted to suit the objectives of the students.

Materials

Lecture notes will be posted on Canvas before each lecture. In addition, these reading materials are recommended:

Strongly Recommended text: Quantum Chemistry, I. N. Levine, Pearson Prentice–Hall Inc., New Jersey,
Other recommended texts include:
Elements of Quantum Mechanics, M.D. Fayer, Oxford University Press.
Molecular Quantum Mechanics, 5th Ed., P. Atkins and R. Friedman, Oxford University Press.
Modern Quantum Chemistry: Introduction to Advanced Electronic Structure Theory, A. Szabo and N. S. Ostlund, Dover.

In addition, there is a very good set of videos on youtube, which cover most of the concepts that will be presented in class:
https://www.youtube.com/user/TMPchem

COMMUNICATIONS

Lecture materials, problem sets, grades and announcements will be posted on Canvas.
The final grade will be posted on Canvas within a week after the deadline.
The University of North Texas provides student technical support in the use of Canvas and supported resources. The student help desk may be reached at:
Email: helpdesk@unt.edu
Phone: 940.565-2324
Canvas technical requirements: https://clear.unt.edu/supported-technologies/canvas/requirements

ASSESSMENT & GRADING

Assessments

- Lecture attendance (15%)
- Homework (30%)
- Mid-term exams (25%)
- Final exam (30%)

Grading

<table>
<thead>
<tr>
<th>Overall average semester percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>&gt;=90%</td>
<td>A</td>
</tr>
<tr>
<td>80% - 89%</td>
<td>B</td>
</tr>
<tr>
<td>70% – 79%</td>
<td>C</td>
</tr>
<tr>
<td>60% – 69%</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 60%</td>
<td>F</td>
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</tbody>
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**COURSE POLICIES**

**Assignment Policy**
Problem sets will be turned in before designated due dates. You are encouraged to use any references or discuss among yourselves to solve the problems. However, plagiarism or directly copying other students’ answers is prohibited.

**Examination Policy**
Two exams will be given, one at mid-term and another toward the end of the semester. These exams will be open-book and students are encouraged to use any reference materials. However, discussion of the questions or exchange of answers is prohibited, as well as plagiarism. These will be deemed a breach of the Academic Ethic Code and handled according to UNT policies.

**Late Work**
Late work will not be accepted without appropriate reason and prior notice. Ungraded work will automatically receive zero point.

**Attendance Policy**
Attendance to the lectures are, in principle, mandatory, and zero point will be given to any missing sections unless the student communicates with the instructor. However, 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. Acceptable exceptions will be discussed between the student and instructor on a case-by-case basis.

**Syllabus Change Policy**
Please contact the instructor regarding any time conflict or concerns over the syllabus ASAP.

**UNT POLICIES**

**Academic Integrity Policy**
According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty,
forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. The following behaviors are considered academic dishonesty in this class:

- Plagiarism
- Fabrication of experimental data
- Talking to or looking at another person’s exam, and/or using unauthorized materials during the quiz
- Having another person complete and submit work in your name
- Lying to an instructor to improve your grade
- Altering a graded work after it has been returned and then submitting the work for re-grading

Such behaviors will result in zero point for the particular assignment or quiz. Additionally, the incident will be reported to the Dean of Students, who may impose further penalty.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. 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 at disability.unt.edu.

Course Safety Procedures

IMPORTANT: All students must follow the safety codes related to COVID-19. These include, but are not limited to:

- Always wear face masks
- Always maintain at least 6’ inter-personal distance; avoid crowding in and outside the lab

The lecturer has the right to expel students who fail to follow these rules, with zero point for the particular section.

Safety statement related to COVID-19

Face coverings are required in all UNT facilities. Students are expected to wear face coverings during in-person classes. If you are unable to wear a face covering due to a disability, please contact the Office of Disability Access to request an accommodation. UNT face covering requirements are subject to change due to community health guidelines. Any changes will be communicated via the instructor.
Students must maintain at least 6’ distance from each other in the classroom, and in general, whenever in the Chemistry Building.

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) 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 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.

**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.

**Retention of Student Records**

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student’s records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.

**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. The Code of Student Conduct can be found at deanofstudents.unt.edu/conduct.
Access to Information - Eagle Connect

Students’ access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail: eagleconnect.unt.edu/

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 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) 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 at http://spot.unt.edu/ or email spot@unt.edu.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.