**Course Syllabus**

**Course Information**
Physical Chemistry II – CHEM 3322.001 – Fall 2020
Assigned Lecture Time: MWF 11:00am – 11:50am, MS Teams
TA Session: Thursday 5:30pm – 6:45pm, MS Teams
TA: Qing Yan, qing.yan2@utdallas.edu

**Professor Contact Information**
Dr. Steven O. Nielsen, 972-883-5323, steven.nielsen@utdallas.edu, BE2.516.
Office hours: MWF 11:00am-11:50am, MS Teams

**Instructional Mode:** Remote.
For more information see [https://www.utdallas.edu/fall-2020/fall-2020-registration-information/](https://www.utdallas.edu/fall-2020/fall-2020-registration-information/)

**Course Platform:** eLearning and MS Teams/Streams

**Asynchronous Learning Guidelines:** All lectures, office hours, and TA sessions will be recorded and posted for viewing. Homework and exams remain unchanged.
For more information see [https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/](https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/)

**How this course is going to work:**
Video recordings of lecture material, lecture notes, and other material will be posted online. During the assigned lecture time (MWF 11am) the professor will hold live synchronous office hours which will be recorded for later viewing; no new material will be covered. During the TA session (Thurs. 5:30pm) the TA will hold a live synchronous help session which will be recorded for later viewing. Homework will be posted online and will be due each Monday. Term tests will be on Thursday (Sept. 17, Oct. 22, Nov. 19); students will have flexibility in terms of the start time for these tests. The final exam will be on Dec. 7; students will have flexibility in terms of the start time for this exam.

**Course Pre-requisites, Co-requisites, and/or Other Restrictions**
Prerequisite: (MATH 2415 or MATH 2451 or MATH 3351) or instructor consent required.

**Course Description & Student Learning Objectives/Outcomes**
Physical Chemistry II is designed to provide students with fundamental understanding of chemical structures and processes at the microscopic level. Fundamental microscopic properties of matter and radiation are discussed. A core of topics including quantum chemistry, atomic and molecular structure and spectroscopy, and statistical thermodynamics is supplemented with topics germane to students taking physical chemistry. Such additional topics might include computational chemistry, nuclear magnetic resonance, circular dichroism, and X-ray diffraction.

**Outcomes:** To this end, students will be able to
1. Explain atomic/molecular structure and spectroscopy in terms of quantum mechanics.
2. Deduce molecular structure from spectroscopic data.
3. Interpret macroscopic properties of matter in terms of a statistical mechanical analysis of atoms and molecules.
4. Demonstrate knowledge of mathematics and physics by applying that knowledge to evaluate mathematical problems related to physical chemistry.

**Required Textbooks and Materials**
Physical Chemistry: a molecular approach

All other materials will be posted on eLearning and MS Teams/Streams.

**Assignments & Academic Calendar**

<table>
<thead>
<tr>
<th>M</th>
<th>W</th>
<th>F</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 17</td>
<td>19</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>26</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Sept. 2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>11</td>
<td></td>
<td>Sept. 7 is a holiday</td>
</tr>
<tr>
<td>14</td>
<td>16</td>
<td>18</td>
<td>Exam 1 on Sept. 17</td>
</tr>
<tr>
<td>21</td>
<td>23</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>30</td>
<td>Oct. 2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>14</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>21</td>
<td>23</td>
<td>Exam 2 on Oct. 22</td>
</tr>
<tr>
<td>26</td>
<td>28</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Nov. 2</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>11</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>18</td>
<td>20</td>
<td>Exam 3 on Nov. 19</td>
</tr>
<tr>
<td>23</td>
<td>25</td>
<td></td>
<td>Thanksgiving Break Nov. 26-27</td>
</tr>
<tr>
<td>Dec. 7</td>
<td></td>
<td></td>
<td>Final Exam</td>
</tr>
</tbody>
</table>

**Grading Policy**
The course grade will be based on three term tests (20% each), homework (20%), and a final exam (20%). The lowest term test score can be replaced by your grade on the final exam.

**Course & Instructor Policies**
There will be no makeup exams given. If you have an acceptable, documented reason for missing a term test (e.g. documented illness), you will be allowed to replace the missed term test with your score on the final. Otherwise, you will receive a zero. The final exam must be taken, will be comprehensive and cannot be replaced by any other grade. Homework turned in after the answers are posted online will not receive any credit.

**Comet Creed:**
*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*

“As a Comet, I pledge honesty, integrity, and service in all that I do.”
Class Recordings
Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the student code of conduct https://policy.utdallas.edu/utdsp5003.

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the student code of conduct https://policy.utdallas.edu/utdsp5003.

Class Materials
The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the student code of conduct https://policy.utdallas.edu/utdsp5003.

Technical Requirements
In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the webpage https://ets.utdallas.edu/elearning/students/current/getting-started.

Course Access and Navigation
This course can be accessed using your UT Dallas NetID account on the eLearning website https://elearning.utdallas.edu/.

Please see the course access and navigation section of the Getting Started with eLearning webpage for more information https://ets.utdallas.edu/elearning/students/current/getting-started.
To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage https://ets.utdallas.edu/elearning/students/current/tutorials.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service https://ets.utdallas.edu/elearning/helpdesk.

**Communication**
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools https://ets.utdallas.edu/elearning/students/current/tutorials.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

**Distance Learning Student Resources**
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information https://ets.utdallas.edu/elearning/students/current.

**Server Unavailable or Other Technical Difficulties**
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk https://ets.utdallas.edu/elearning/helpdesk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

**Academic Support Resources**
The information contained in the following link lists the University’s Academic Support Resources for all students http://go.utdallas.edu/academic-support-resources.

**UT Dallas Syllabus Policies and Procedures:**
The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus http://go.utdallas.edu/syllabus-policies.