A. COURSE INFORMATION

Course number/section: CHEM 1411-732
Class meeting time: Lecture TR, 12:30pm-1:45 pm
Class location: Island Hall 160
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Lin Zhang
Office location: NRC1109/Online
Office hours: TR 3-6 pm
Telephone: 361-825-2095
e-mail: lin.zhang@tamucc.edu
Appointments: by email

C. COURSE DESCRIPTION

Catalog Course Description
The foundation course in chemistry. Stoichiometry, chemical equilibria, atomic structure, chemical bonding, periodic properties, thermodynamics, chemical kinetics, and descriptive chemistry of the elements. Laboratory involves development of basic skills. This course counts toward the natural science component of the University Core Curriculum. Either CHEM 1305 - Introductory Chemistry or CHEM 1411, but not both, may be applied towards the core requirement.

Extended Course Description
The overall objective is for the student to understand chemical formulas, structures. The secondary objectives of this course are to prepare the students for the second semester of General Chemistry and for Organic Chemistry, and involve the students in critical thinking exercises through course assignments.

D. PREREQUISITES AND COREQUISITES

Prerequisites
None

Corequisites
Student Laboratory Safety Training (SMTE-0093); Registration in a laboratory section

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook(s)

Optional Textbook(s) or Other References
None

Supplies
Scientific calculator; laboratory will require lab coat and goggles

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:
1. Describe the structure of atoms
2. Predict the general behavior of elements based on periodic rule
3. Differentiate between and describe ionic and covalent bonding
4. Perform basic stoichiometric calculations
5. Perform calculations based on the ideal gas law
6. Determine Lewis structures of simple molecules

G. INSTRUCTIONAL METHODS AND ACTIVITIES
The course is given by face-to-face lectures augmented with downloadable notes. Sample problems are presented frequently. There will be three in-class exams and a final exam. Online homework is required.

There is also a laboratory associated with the course. For all information relating to the laboratory, including safety information, please see the laboratory syllabus.

H. MAJOR COURSE REQUIREMENTS AND GRADING
Final letter grading for the course will be as follows: A: 90% +; B: 80% +; C: 70% +; D: 60% +; F < 60%.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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</thead>
<tbody>
<tr>
<td>Exam1</td>
<td>15</td>
</tr>
<tr>
<td>Exam2</td>
<td>15</td>
</tr>
<tr>
<td>ALEKS</td>
<td>12.5</td>
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<tr>
<td>Attendance</td>
<td>12.5</td>
</tr>
<tr>
<td>Lab</td>
<td>25</td>
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<tr>
<td>Final Exam</td>
<td>20</td>
</tr>
</tbody>
</table>

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Unit</th>
<th>Chapter</th>
<th>Topics</th>
<th>Lecture Dates (2020)</th>
<th>*Exam Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Keys to the study of chemistry</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td>The components of matter</td>
<td>8/20-9/24</td>
<td>Exam1 (Chap 1-3)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Stoichiometry of formulas and equations</td>
<td></td>
<td>9/29 Tue</td>
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<tr>
<td>4</td>
<td></td>
<td>Major classes of chemical reactions</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td>Gases and kinetic-molecular theory</td>
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<tr>
<td>6</td>
<td></td>
<td>Thermochemistry: Energy flow and chemical changes</td>
<td>10/1-11/3</td>
<td>Exam2 (Chap 4-7)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Quantum theory and atomic structure</td>
<td></td>
<td>10/18 Friday</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Electron configuration and chemical periodicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Models of chemical bonding</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td></td>
<td>The shapes of molecules</td>
<td>11/10-11/24</td>
<td>Final (Chap 1-11)</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Theories of covalent bonding</td>
<td></td>
<td>See below</td>
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</tbody>
</table>

FALL 2020 UNIVERSITY FINAL EXAMINATION SCHEDULE

<table>
<thead>
<tr>
<th>*Class and lecture time</th>
<th>Final Exam Date</th>
<th>**Final Exam Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1411.008 (9:30 – 10:45 pm)</td>
<td>Thu December 3</td>
<td>8:00 a.m. – 10:30 p.m.</td>
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<tr>
<td>CHEM 1411.720-722 (11:00 – 12:15 pm)</td>
<td>Tue December 1</td>
<td>11:00 a.m. – 1:30 p.m.</td>
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<tr>
<td>CHEM 1411.730-732 (12:30 – 1:45 pm)</td>
<td>Thu December 3</td>
<td>11:00 a.m. – 1:30 p.m.</td>
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</tbody>
</table>

*All final exams will take place in the normal lecture classroom.

**Please note that exam start time may be different than regular class start time.

This schedule is tentative and the official University Final Exam Schedule will be followed: [http://registrar.tamucc.edu/Register%20for%20Classes/Final_Exams.html](http://registrar.tamucc.edu/Register%20for%20Classes/Final_Exams.html)

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning
Outcomes described in Section F.

J. **COURSE POLICIES**

**COVID-19**
Face Coverings— TAMUCC-Face Coverings (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Extra masks will be made available if needed.

**Attendance/Tardiness**
It is assumed that students will arrive on time for each class. If you miss class or are late, it is your responsibility to catch up on material that you missed. On exam days, no student will be admitted after the first examinee has left.

**Late work/assignments:**
Online homework will not be accepted after the set due date. Students should properly manage time spent on online homework assignments to ensure completion by the set deadlines.

**Extra Credit**
There will be no extra credit assignments.

**Cell Phone Use**
Cell phones are not permitted during exams. You may NOT use your cell phone as a calculator.

**Food in class**
Generally, avoid eating food during class. Water and caffeinated beverages are fine, just keep them under control.

**Late arrival on exam day:**
Any student arriving more than 5 minutes late to an exam will have 5 points deducted from his/her exam grade. Being late on exam day is highly disruptive to all students. No additional time will be given to a student arriving late.

**Missed Exam**
No make-up exams will be given after the original scheduled date of the exam. Certain circumstances may warrant a make-up exam and require notification, documentation, and arrangements be made prior (≥1 week) to the exam to be missed. All make-up exams must be taken prior to the original exam date. These situations will be handled on a case-by-case basis and are at the instructor’s discretion. No make-up exams are given due to intentional or unintentional absences.

**Participation**
Come to class, participate in the Socrative activities, ask questions (politely), and answer questions (politely). Staying engaged will help you to master the material. Attendance will be monitored and factored into a student’s grade.

**SI Leaders:**
Supplemental instruction leaders are undergraduates who were previously successful in
this course. They attend all of the lectures, develop and implement SI sessions (activities pertaining to information covered in lecture), and hold office hours. They serve as an additional resource for help in completing and understanding course materials. A complete schedule of office hours and SI sessions will be posted on Blackboard shortly after the beginning of classes. Studies have shown that students who attend SI sessions earn 0.5 – 1.0 GPA points (a half or whole letter grade) higher than students who do not attend SI sessions.

**Blackboard and Islander email account:**
It is the student’s responsibility to check the course Blackboard site and their Islander email accounts regularly (i.e., every day). Important announcements and changes to the course schedule will be communicated this way.

**Tutoring and test-taking strategies:**
You want you to be successful, and I want you to be successful. It may take you some time to figure out how to be successful, especially in a notoriously challenging course like chemistry. You need to develop good note-taking skills, organization skills, study habits, and test-taking strategies. If you find yourself performing below what you expect, or if you would like to avoid doing so, please come talk to me about your strategies. The earlier you do this, the more likely you are to be successful. Your instructor, SI leaders, and TAs are available to help you, but YOU need to take the initiative. Here are additional resources for those who find chemists unapproachable:

- **Center for Academic Achievement (CASA):** They provide free tutoring for chemistry and math, can help with test-taking strategies, and offer writing services. Please visit [http://casa.tamucc.edu/](http://casa.tamucc.edu/) for their hours of operation and schedules.
- **University Counseling Center (UCC):** (361-825-2703): They can anonymously help with test anxiety, stress problems, or any other mental wellness-related issues for free. Please visit [http://counseling.tamucc.edu/](http://counseling.tamucc.edu/) for additional information.

**Emailing the instructor:**
I want an open line of communication with my students. However, I typically have about 200 students per semester, and receive a high volume of emails. I ask that you first check this syllabus and any information I have shared on Blackboard before sending me an email to avoid asking questions that I have already answered. Additionally, asking direct questions and providing me with as much information as possible will help me to answer your question more quickly. It will likely take more time to respond to open-ended or unclear questions that require lengthy responses. Please be patient with responses. If you do not receive a response to your question within 48 hours, then please feel free to kindly remind me about it.

**K. COLLEGE AND UNIVERSITY POLICIES**

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is
the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. *Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course.* Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is required to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures. These documents are accessible through the University Rules
website at http://academicaffairs.tamucc.edu/rules_procedures/assets/13.02.99.c0.03_student_grade_appeals.pdf). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. 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 an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

- **Civil Rights Complaints**
  Texas A&M University-Corpus Christi is committed to fostering a culture of caring and respect that is free from discrimination, relationship violence and sexual misconduct, and ensuring that all affected students have access to services. For information on reporting Civil Rights complaints, options and support resources (including pregnancy support accommodations) or university policies and procedures, please contact the University Title IX Coordinator, Sam Ramirez (Samuel.ramirez@tamucc.edu) or Deputy Title IX Coordinator, Rosie Ruiz (Rosie.Ruiz@tamucc.edu) x5826, or visit website at Title IX/Sexual Assault/Pregnancy.

**Limits to Confidentiality.** Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees, including instructors, are not able to maintain confidentiality when it conflicts with their responsibility to report alleged or suspected civil rights discrimination that is observed by or made known to an employee in the course and scope of their employment. As the instructor, I must report allegations of civil rights discrimination, including sexual assault, relationship violence, stalking, or sexual harassment to the Title IX Coordinator if you share it with me.

These reports will trigger contact with you from the Civil Rights/Title IX Compliance office who will inform you of your options and resources regarding the incident that you have shared. If you would like to talk about these incidents in a confidential
setting, you are encouraged to make an appointment with counselors in the University Counseling Center.

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**L. OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.