

CHEM 0960

General Chemistry for Engineers 1

Fall 2024

****Special thanks to Dr. Xinfeng (Kevin) Quan's and Dr. Jiabei Zhou
for their invaluable support for this course****

Instructor and TA information

- **Lecturer:** Dr. Wenwen Xu
- **Office:** Rm N 401, New building, SCUPI

Office hour (Or by appointment):

8:15 AM-11:00 AM Monday (Section 3);

12:00 PM-2:45 PM Wednesday (Section 2);

8:15 AM-11:00 AM Thursday (Section 1)

- **TA:** Sec 3(Monday afternoon): Ye Zehang&Zheng Siyuan;
Sec 2(Wednesday Morning: Yang Shuo& Wang Ruyi
Sec 1 (Thursday afternoon) Zhang Gengji&Ni Ruijie

TA Q&A section: through QQ,

****TA should respond to your questions within one day.**

Please contact the TA responsible for you first.

- **Email:** wenwen.xu@scupi.cn

Catalog Description

Chem 0960 is the first part of the introductory-level chemistry class to help students build a solid foundation with this diverse, complex and yet critical discipline. Important topics covered in this course include, but are not limited to, scientific method, atomic structure, periodic trends of elements, quantum theory, molecular geometry and bonding theories, stoichiometry, chemical reaction in aqueous solutions. No prerequisites are needed.

Credit hours: 3.0

Course Objective

Fundamental concepts and principles of chemistry are important to engineers. Knowledge on chemistry will help engineers to communicate with chemists, and more importantly, to understand the properties of working objects. To gain such knowledge, this two-semester course (including Chem 0960) covers a relatively broad yet important range of topics. Learning objectives related to specific

topics will be listed in the lecture slides as each chapter goes. Upon successful completion of this course, you should gain “global” skills as follows:

- Be able to communicate chemistry using basic chemistry vocabulary.
- Predict material properties using basic concepts and principles of chemistry. • Explain scientific methods e.g., how theory is constructed and tested via experimental efforts, particularly in chemistry.
- Demonstrate both qualitative and quantitative problem-solving skills using knowledge on structural chemistry, stoichiometry, thermochemistry, chemical equilibrium, and reaction kinetics.

Applicable ABET Outcome

- Students are able to have a fundamental understanding of the principles and concepts of general chemistry.
- Students are able to have the critical thinking to apply chemistry knowledge to real world problems.
- Students are able to have scientific communication skills in English and prepare them for advanced studies.

Required Textbook

- Chemistry: Atoms First, 4th edition by Julia Burdge and Jason Overby.
- Online system: blackboard (BB) and QQ group, where you can find the class announcements, handouts, assignments as well as grades.

Grades

Exams 1 & 2	200 pts
Final Exam	150 pts
Homework	60 pts
Attendance	20 pts
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Total	430 pts

- Please expect two midterm-exam after lecture **4** and lecture **8**. Each midterm exam will last 2 hour covering all content after the previous exam.
- The final exam is 2.5 hours long and will cover content thought out the course.

Homework

- Homework is due the **BEGINNING** of the class (**1:50 PM or 8:15 AM depending on your class time**) in the week after. **5 pts** will be deducted from your homework scores for late homework submission. Short answer to the homework will be posted usually on Friday noon. **Late homework will not be graded after the homework solution is posted.**
- Please submit your homework in **PDF format** through **BB** via **computer**. Refer to the ‘how-to’ folder for instructions on PDF conversion as well as online submission. **AVOID** use cell phone app to submit homework. **Do not use cellphone** since glitches frequently happened on cell phone APP and we cannot receive your homework!
- Name the PDF file as section #-your name since it is extremely important for us to archive your performance.

- Homework grades are released within one week after submission. If you have any questions for any of your grades, contact your TA first. If problems cannot be resolved, please contact Prof. Xu to make the final decision. Any homework grading requests will be denied five-day after the grade is released.
- Don't be panic if you make mistakes on your homework. **We normally drop the two lowest grades of your homework assignments for final grades.**

Final Grade

Your final grade will be calculated based on the above grade breakdown at the end of the semester. Grades will be curved at the end of the semester if the class average is low. **NOTE I will not curve the grade for every exam.**

However, curving is not guaranteed. You should only rely on your performance in all the assignments and exams.

Attendance and Make-up exam

TAs will take attendance at irregular intervals. If you cannot attend class for unavoidable circumstances, please submit a leave note with your student counselor's signature on it.

In principle, any absence in exams is not allowed except for irresistible reasons (diseases, accidents, etc.). You must contact me in advance. Make-up exams may not be guaranteed.

Failure of the Course

If you unfortunately failed the course, you can either retake the course or pass a make-up exam at the beginning of the next semester. Based on your performance in the make-up exam, a "D" or an "F" should be expected as the final grade.

Copyrights

If not specifically pointed out, all materials used in this course are copyrighted, meaning that without my explicit permission you do not have the right to copy any of the materials for any purpose other than your own personal academic use. The copyrighted materials used in this course include but do not limit to syllabi, exams, class slides, problem sets, and other handouts.

Academic Integrity

Upon accepting admission to SCUPI, you immediately assume to follow the SCUPI academic integrity guidelines. See a staff in the administrative office if you are not aware of it. The guidelines should be followed in homework, examinations, and other academic work. Violations of these guidelines may result in zero points for an exam or failure of the course.

Study Tips

- Do your homework ON YOUR OWN!!! You can discuss with a friend, but do it independently. Make sure you can solve similar problems after completion.
- Come to classes and take notes. Even if you have learned some of the topics in high school, you may find it quite different in this course. Every year there are students losing points in the exam because of this.
- Consult a text book in Chinese if you have trouble understanding the required text book. However, make sure you learn all the terminology in English. The exam is in English!

- Study your notes every day. Memorizing basic laws, facts, terms, and principles is a must. Chemistry is a subject based on workings of this objective world!
- Use office hours and let me know any trouble you might have.

Course Schedule

Week	Topics
3	Chapter 1
4	Chapter 2
5	National Day
6	Chapter 3
7	Chapter 4
8	Exam review & Exam1
9	Chapter 5
10	Chapter 6
11	Chapter 7-1
12	Chapter 7-2 (Chapter 8 online study)
13	Exam review & Exam2
14	Chapter 9
15	Chapter 10
16	Chapter 11
17	Chapter 12
18	Exam review & Final exam

* Schedule might be slightly changed based on class performance.