CHEM 1304: General Chemistry II

CHEM 1304 is the second part of the one-year CHEM 1303-1304 sequence. This course is designed primarily for science majors, premed students, and engineering students, and offers an introduction to the fundamental principles and theories of chemistry. In CHEM 1304, the student will be introduced to topics including solution chemistry, equilibrium, thermodynamics, electrochemistry, polymer chemistry, and organic chemistry. CHEM 1304 is a prerequisite to all advanced courses in the department of chemistry. The anticipated small class size and fast pace of May Term should appeal to motivated students desiring a concentrated learning experience with more individualized faculty-student communication. The May Term course is fully equivalent to CHEM 1304 offered during the regular academic semester. Completion of this course in May Term will enable the student to gain a head start on academic requirements whether they are for a science or engineering major, or the premedical/dental curriculum. This class is approved for the University Curriculum (PAS Level 2) when combined with CHEM 1114 (laboratory).

May Term, 2016
May 12–26, 2016
9am to 1pm, no class on weekends

Instructor: Professor David Son
email: dson@smu.edu
Location: SMU Dallas campus, room TBD

Textbook: Chang, **Chemistry**, 11th edition, Solutions Manual is strongly recommended

All course communications and documents will be maintained through **Canvas** (http://smu.instructure.com). Most relevant information will be in the "Modules" section.

Learning objectives

The primary objective is for the student to be able to take the specific skills and accomplishments described below and apply, translate, and extrapolate these thought processes to solving problems throughout life. In general, the student will:

- demonstrate basic facility with the methods and approaches of scientific inquiry and problem solving.
- be able to explain how the concepts and findings of science or technology in general, or of particular sciences or technologies, shape our world.

More specifically, the student will be able to:

- Predict the macroscopic properties of solutions.
- Describe the mathematical relationships between chemical kinetics, equilibria, and thermodynamics.
- Mathematically analyze acid-base behavior in titration reactions.
- Predict the feasibility of various redox reactions, and apply this knowledge to everyday systems.
- Explain the basic structural concepts of both small and large (polymeric) organic compounds.
- Understand the chemical nature of radioactivity, and its practical applications.

Attendance

Attendance at all class sessions is required, and will count approximately 5% toward your overall grade.

Class format

Due to the time-intensive format of May Term, several breaks will be scheduled during the day. Furthermore, homework and review sessions will be scheduled during normal class hours.

Homework

Homework problems will be assigned for each chapter, but you will not be required to turn them in. However, knowing how to do the problems is *essential* to doing well on the exams.

Grading

Four exams – 100 points each, 400 points total
Attendance – 25 points
TOTAL = 425 points
Exam grades will be curved, based on grade distributions from regular semester classes. For all exams, you are responsible for information given out in class that may not be in the text or lecture outlines. Plus and minus grades will be assigned at the end of the term.

Class Schedule

Thursday, May 12

- Chapter 12
- Chapter 13

Friday, May 13

- Chapter 13
- Chapter 14

- Homework and review

Monday, May 16

- *Exam #1 (Chapters 12-14)*
- Chapter 15

Tuesday, May 17

- Chapter 15
- Chapter 16

Wednesday, May 18

- Chapter 16
- Homework and review

Thursday, May 19

- *Exam #2 (Chapters 15 and 16)*
- Chapter 17

Friday, May 20

- Chapter 18
- Homework and review

Monday, May 23

- *Exam #3 (Chapters 17 and 18)*
- Chapter 19

Tuesday, May 24

- Chapter 19
- Chapter 24

Wednesday, May 25

- Chapter 24
- Chapter 25
- Homework and review

Thursday, May 26

- Homework and review
- *Exam #4 (Chapters 19, 24, and 25)*

Office hours

I will have no formal office hours. Ample time will be provided during the day to address any questions. Emailed questions are also welcome.

Other Information

- Make-up exams will only be given under special circumstances. Social obligations or lack of preparation is not an acceptable excuse for missing an exam.
    - If you miss an exam due to an illness, you will need to provide an Absence from Class Form (see SMU policy below).

- If you miss an exam due to any other emergency, you will need to sign and submit a written note explaining the circumstances.
- If you know in advance that you will have to miss at least one day of class, *you should not sign up for this class.*

- All students are expected to abide by the SMU Honor Code.

Instructor bio

Dr. David Son is a professor in the department of chemistry at SMU. Dr. Son holds a Ph.D. from M.I.T., and has taught at SMU for 20 years. At SMU, Dr. Son has taught general chemistry for 15 years, and has additionally taught lecture and laboratory courses in organic and advanced inorganic chemistry. Dr. Son has experience teaching CHEM 1304 at an accelerated pace, having taught CHEM 1304 every year during the Jan Term and May Term since their inception. Dr. Son was recognized by SMU students as a HOPE honoree (Honoring our Professors' Excellence) in 2003, 2011, 2012, and 2014, and in 2011 was named a Ruth Altshuler Distinguished Teaching Professor by SMU. Dr. Son conducts research in the areas of organometallic and polymer synthesis. His webpage is http://faculty.smu.edu/dson.

SMU policies

Disability Accommodations: Students needing academic accommodations for a disability must first contact Ms. Rebecca Marin, Coordinator, Services for Students with Disabilities (214-768-4557) to verify the disability and establish eligibility for accommodations. They should then schedule an appointment with the professor to make appropriate arrangements. (See University Policy No. 2.4.)

Religious Observance: Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities: Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)

SMU Medical Class Excuse Policy: Question: I missed class because I was ill. Can I get a medical excuse? A: We are sorry to hear that you were ill and hope that you take advantage of Memorial Health Center when you have a problem. However, we do not provide medical excuse forms. If you are interested in finding a medical excuse form, you may download Absence From

Class Form (on SMU website). Each of your professors will have his or her own attendance policies. If you are absent for illness, you should talk to your professor about how you might catch up with the material you missed. If you are seriously ill and require hospitalization or an extended absence, talk to your professors and the Office of Student Life to decide how to deal with the interruption in your studies.