CHEM 1414 – General Chemistry for Engineers

# Instructor

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Instructor’s Office Hours:

**Virtua**l: Monday and Tuesday 11:00 am-12:00 pm via Canvas Conference

Other times by appointment

I prefer to be contacted by email and please include **CHEM 1414 Online** in the subject line.

# Wellness Statement

**You are important to me.** If at any time you feel that you need to talk or that there is something you are unable to manage about this class, please see me. We can discuss your struggles, and if you need additional help I can refer you to the appropriate service. You are a valuable member of the OSU community. Do not let your physical or mental health suffer because of this class or anything else you might encounter during your time here at OSU. ***You got this!***

# Description

***This is an online course.*** All lectures, resources, assignments, and correspondence are accessed entirely online through Canvas at canvas.okstate.edu. You must use your campus email and password to access the course.

***CHEM 1414*** is a terminal, one-semester general chemistry course for engineers covering the general principles of thermodynamics, atomic structure, solid state, materials, equilibria, acids and bases, and electrochemistry.

# Prerequisites

MATH 1483 or MATH 1513 or the equivalent or acceptable AP credit.

# Goals

* Introduce students to structure and bonding, thermodynamics, equilibria, nomenclature, use, properties, and reactivity of materials. This will allow students to recognize the role of the chemistry in many areas of engineering and technology.
* Develop students’ problem solving, critical thinking, information processing, and data interpretation skills which are essential for careers related to health, agriculture, science, engineering and technology

# Textbook

*Chemistry for Engineering Students* (4th Edition) byBrown and Holme **REQUIRED** - Prior Editions are Acceptable

# Additional Course Fees

# The services below are at an additional cost and not included in your course tuition and fees.

*Sapling Learning Online Homework* will be used for quizzes and homework assignments. **REQUIRED** ([Link to student registration instructions](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmacmillan.force.com%2Fmacmillanlearning%2Fs%2Farticle%2FStudents-Register-for-Sapling-Learning-courses-via-your-school-s-LMS&data=02%7C01%7Ctoby.nelson%40okstate.edu%7Cd9b6b647acf84ffe4dcb08d771c757d0%7C2a69c91de8494e34a230cdf8b27e1964%7C0%7C0%7C637102973294284661&sdata=PArvgWcOdopTgKMXeAmXf8NqojWkarjhq8Gjyz%2FLjDY%3D&reserved=0) (approx. cost: $42)

# Instructor Response Time

The instructor will respond to all student inquires *generally* within 48 hours. Assignments and exam grades will be posted in Canvas within 2 weeks of the assignment/exam due date.

# Participation Expectations

During this online course, students are expected to engage in the material on a regular basis. I expect all students to watch the videos, as this is the lecture portion of the class that provide the information necessary to be successful in this course.

# Grading Policy

Your grade in this course will be calculated according to the completion of the following assignments:

|  |  |  |
| --- | --- | --- |
| **Assignment:** | **Value in Points** | **Percentage of Total Grade** |
| Homework | 100 (4 total at 25 points each) | 17.9% |
| Quizzes | 60 (2 total at 30 points each) | 10.7% |
| Exams | 200 (2 total at 100 points each) | 35.7% |
| Final Exam | 200 | 35.7% |
| **Total** | **560** | **100%** |

Final grades will be assigned according to the following standard scale:

|  |  |
| --- | --- |
| **Grade** | **Percentage Earned** |
| A | 88 – 100% |
| B | 76 – 87.9% |
| C | 64 – 75.9% |
| D | 55 – 63.9% |
| F | 0 – 54.9% |

# Assignment Descriptions

The course will be conducted within Canvas and posted in weekly modules, which will open on Sundays at 2 pm. Weekly videos, reading assignments, quizzes and homework will be posted in each module. Important information, updates and reminders will be posted in the Canvas class website. Please check in regularly for information.

# Examinations:

Two one-hour exams and a cumulative Final exam. **No** make-up exams are available. Hour exams and Final exam will be taken as a timed-multiple choice exam in Canvas.

**Homework:**

There are 5 homework assignments, plus an extra credit prep assignment in Sapling Learning Online Homework and the lowest homework assignment with be dropped. All homework will be completed in Sapling. Assignments and due dates are and will be listed in the class schedule, Canvas module and in Sapling. Assignments will be open for 5 to 7 days until 11:59 p.m. on the due date. Late homework will be penalized by 20% each day past the due date. *\*Note: Sapling grades are sent to Canvas once per day*. If your scores in Sapling and Canvas do not match, please wait 24 hours and check again.

**Quizzes:**

There are 3 quizzes in Sapling Learning Online Homework and the lowest quiz will be dropped. All quizzes will be completed in Sapling. Assignments and due dates are and will be listed in the class schedule, Canvas module and in Sapling. Assignments will be open for 1-2 days until 11:59 p.m. on the due date. Late quizzes will be penalized by 20% each day past the due date. No make-up quizzes are available.

# Best Practices for Success in this Course

* Read all appropriate text material and announcements
* Watch all lecture and exam review videos and write additional notes on the provided lecture notes or exams.
* Rewrite information learned from lecture videos and text readings into a separate notebook. Transcribed notes should be in clear outline form, with examples.
* Prepare notecards of general reactions. Place starting materials and reagents on front of card, and product on back.
* Work all suggested problems.
* Review notes at least twice a week.
* Study in small groups or pairs virtually. Ask questions and get help in virtual office hours.
* Keep up with the material covered in class -**don’t get behind**.
* If a score of less than 64% is obtained on an exam, contact the instructor.

# Technical Requirements

Material in this class is designed to be platform-friendly: any desktop or laptop computer equipped with a modern internet browser such as Chrome and Firefox will be sufficient to fulfill the requirements of the course. We will be using a Canvas Videoconference for virtual office hours, but no personal account is required to join the Videoconference. In order to get the maximum benefit from the virtual office hours, a computer equipped with a microphone and webcam is highly recommended.

# Netiquette

A melding of the words "network" and "etiquette,” netiquette refers to the manner in which communication is conveyed in an electronic environment. Here are some guidelines for communication within this course:

* Please address me as Dr. Nelson or Prof. Nelson.
* REFRAIN FROM USING ALL CAPS. It is considered SHOUTING when communicating online.
* Do not post or forward offensive or racially insensitive jokes or comments.
* Be careful with humor and sarcasm.
* Don’t respond to personal attacks: Contact the instructor for action and referral.
* Always add in the subject line a concise statement describing the email or discussion post.
* Respect others' opinions. If you disagree with what another has said, post your thoughts in an objective, respectful manner. Do not make remarks that can be taken personally.
* Reflect upon the text you have entered before posting.
* Keep the discussion within the scope of the course material except in non-course related discussion boards. Example name: Watercooler.
* Communication should be grammatically correct. Adhere to correct sentence structure, grammar, and spelling conventions. Proofread for errors before posting a message.
* Before you respond to a threaded message, read all the messages related to that message that have been previously posted.
* Send out an email to a group using the blind carbon copy field – BCC does not allow your recipients to view who received the email.

# Course Schedule

|  |  |  |
| --- | --- | --- |
| **Week of** | **LECTURE** | **Assignments Schedule** |
| June 8 | Chapter 1: Introduction to Chemistry  Chapter 2: Atoms and Molecules  Chapter 3: Molecules, Moles, and Chemical Equations | **Prep Work**: Sapling training assignments/videos  Due: 6/7  **Homework 1**: Due: 6/14  **Online Quiz 1**: Due: 6/15 |
| June 15 | Chapter 4: Stoichiometry  Chapter 5: Gasses  **Exam 1 Review**  **Exam # 1 -** (**Ch. 1, 2, 3, 4, 5)** | **Exam 1**  **6/19 – 2/20** |
| June 22 | Chapter 6: Periodic table and atomic structure  Chapter 7: Chemical Bonding and Molecular Structures | **Homework 2**: Due: 6/28  **Online Quiz 2**: Due: 6/29 |
| June 29  **4th of July 7/3** | Chapter 9: Energy and Chemistry Chapter 10: Thermodynamics and the Direction of Change | **Homework 3**: Due: 7/5 |
| July 6 | **Exam 2 Review**  **Exam # 2 - (Ch. 6, 7, 9 10)** | **Exam 2**  **7/10 – 7/11** |
| July 13 | Chapter 11: Kinetics  Chapter 12: Chemical Equilibrium | **Homework 4**: Due: 7/19 |
| July 20 | Chapter 13: Electrochemistry | **Homework 5**: Due: 7/26  **Online Quiz 3**: Due: 7/27 |
| July 27 | **Final Exam Review**  **Final Exam - (Ch. 11, 12, 13)** | **Final Exam**  **Friday, July 31** |

# University Syllabus Attachment

You will find this semester’s syllabus attachment through the following link: https://academicaffairs.okstate.edu/sites/default/files/Summer%202020%20Syllabus%20Attachment.pdf