**General Chemistry I, CH 115**

Stevens Institute of Technology, School of Engineering and Sciences (SES)

Fall 2022

TENTATIVE Course Syllabus for this coordinated course...Any changes will be posted on Canvas

Course Schedule by section:

| Lecture | Time | Instructor | Room Assignment |
|---|---|---|---|
| A | MWF 8-8:50 AM | Paliwal | Burchard 111 |
| B | MWF 8-8:50 AM | Garay | Babbio 104 |
| C | MWF 9-9:50 AM | Garay | Gateway South Room 216 |
| D | MWF 10-10:50 AM | Muisener | Gateway South Room 216 |
| E | MWF 11-11:50 AM | Khade | EAS 330 |
| F | MWF 11-11:50 AM | Raab | Burchard 111 |
| H | MWF 12-12:50 AM | Muisener | Kidde 360 |
| I | MWF 1-1:50 PM | Khade | Burchard 103 |
| J | MWF 1-1:50 PM | Raab | McLean 106 |
| K | MWF 2-2:50 PM | Alluri | Gateway South Room 216 |
| S | MWF 12-12:50 PM | Sharma | McLean 104 |

**NOTE: You need to attend your assigned lecture to receive credit**

Instructor Contact Information and Office Hours.

| Name | Email | Sections | Office Hours as indicated or by appointment | Office Location |
|---|---|---|---|---|
| Dr. Patricia Muisener | pmuisene@stevens.edu | D, H **Course Coordinator** | M 2-3<br>T 10-11<br>Hybrid Office hours (In person or via zoom) https://stevens.zoom.us/j/97463110626) | McLean 511B |
| Dr. Sunil Paliwal | spaliwal@stevens.edu | A | M 4-5 PM<br>Via Zoom<br>https://stevens.zoom.us/j/92877384871 | McLean 205 |
| Dr. Julio Garay | TBA | B, C | Online, T 3 to 5 pm, W 2-4 pm and Thursdays 11 am by appointment | Online |
| Dr. Rahul Khade | rkhade@stevens.edu | E, I | M 12-12.55 PM and<br>W 2-3 PM<br>Hybrid office hours (in person or via zoom) https://stevens.zoom.us/meeting/93023436293 | EAS 410 |
| Dr. Jeffrey Raab | jraab@stevens.edu | F, J | T 1-2, W 2-3<br>In person | McLean 431 |
| Dr. Sesha Alluri | salluri@stevens.edu | K | F 11-12<br>In person | McLean 315 |
| Dr. Anju Sharma | asharma@steven.edu | S | **In-person and Virtual Office Hours***: WF 9:30-10:30 am (Hybrid: I will also be logged in via Zoom for the duration)<br>Zoom Link: https://stevens.zoom.us/j/95306196583 | McLean 313 |

**NOTE:** All instructors are available for office hours via appointment as well. Please email your instructor when you want to meet, with several dates/times to meet if the ones listed above do not work for you.

CH 115 Course Assistants Students who have taken chemistry previously, are assigned to sections of CH 115 to help facilitate. Course Assistant Information to post by September 7

Canvas Course Address: https://sit.instructure.com/courses/49568

Prerequisite(s): None

Corequisite(s):General Chemistry I lab, CH 117

Cross-listed with: None

**COURSE DESCRIPTION**

This course is an introduction to important concepts and principles of chemistry with a focus on the following topics: atomic structure and periodic properties, stoichiometry, properties of gases, thermochemistry, chemical bond types, intermolecular forces, liquids and solids and a brief introduction to chemical kinetics, organic chemistry and materials chemistry.

**STUDENT LEARNING OUTCOMES**

**OVERALL COURSE AIMS**

**After successful completion of the course students will be able to:**

1. Explain, understand, and recognize the relationship between experiment and theory in science in general and chemistry in principle
2. Describe the modern theoretical basis for understanding important areas of chemistry including atomic structure, chemical bonding, and molecular structure.
3. Demonstrate quantitative problem solving skills in many aspects of chemistry, including stoichiometry, thermochemistry, and reaction kinetics
4. Use your knowledge of molecular structure and properties in describing and solving real technological problems

**CONTENT SPECIFIC LEARNING OBJECTIVES**

**At the end of the semester, students will be able to:**

1. Describe the composition of matter on atomic and molecular scales in terms of chemical formulas and structures
2. Use the periodic table and predict the properties and behavior of elements based on their position
3. Identify the properties of common chemical reactions and predict the quantities of reactants consumed and products produced using balanced chemical equations
4. Understand the nature and types of chemical bonding and its consequences in establishing molecular shape
5. Predict key physical properties of gases, liquids and solids and relate these properties to molecular shape and interactions between atoms, ions and molecules
6. Determine energy changes that occur in chemical reactions in terms of thermodynamic properties of reactants and products
7. Identify the intramolecular forces that can exit between atoms within a chemical compound or molecule and the intermolecular forces that occur between molecules
8. Gain an introductory knowledge of kinetics and the real world applications,
9. Understand the nature of organic compounds, polymers and natural polymers and how they relate to material properties

**Learning objectives ("Skills to Master")** for the specific material covered each week will be listed in the pre-class notes and question/discussion notes.

**COURSE FORMAT AND STRUCTURE**

**COURSE OVERVIEW: This course is a coordinated course with one central Canvas website and will be held in person.**

**Class sessions will take place three days a week M, W, F for 50 minutes at your regularly scheduled time.**

**You must attend your assigned section at your specific time to receive credit.**
Please note:

- Class time and slides are **not** envisioned to summarize the content of the textbook or substitute independent study of the material.
- To fully take advantage of the class, learn the material and succeed, you will need to **review the content covered before class, which can include doing the assigned reading, watching videos or reviewing notes and answering question.**
- Class time will be used to discuss those aspects of the material that may be more challenging, and to address students' questions and comments.
- **GROUP WORK The design of this course is intended to create a collaborative learning environment where participants will interact and work together in small groups (~4 members) for periods of time during most class meetings,** Besides being an effective learning strategy, group work in this class counts towards your In-Class Assignments grade. It is encouraged that you participate actively during class.
- This course is **not** graded on a curve so your performance is NOT being judged against anyone else in the class. You need to develop proficiency in understanding chemistry and your grade is based on how well you meet the course objectives.
- Since will be working in groups throughout the semester you should strongly consider finding one or more people you want to study with outside of class. Research on learning shows that students who study together often get higher grades than students who study alone.

**Course Logistics**
You are responsible for checking the Canvas site frequently to receive announcements and receive instructions concerning the assignments Here you will also find the syllabus; regularly updated schedule; lecture notes; lecture note outlines, preclass worksheets, preclass notes, videos, skills to master for each exam; the exam answer keys; your grade; email addresses to communicate with the instructors and other students in your class; useful links; among other things.
**COMMUNICATION: Please read all announcements posted on Canvas and any emails your instructor sends to you.**

- When you send an e-mail to ask a question use your Stevens e-mail address as the junk e-mail filter may filter out any other e-mail addresses. **Send your email to both your instructor and your course assistant(s). Please place in the subject line the course number/section and the topic of the email (i.e. CH 115 A , Mastering Chem week 1).**
- **For questions about grades, please contact your Instructor ONLY**
- ***Expect responses to e-mail within 48 hours at the latest.*** Please keep in mind if you email Friday night or over the weekend you may not receive a response until Tuesday. **If you do not hear back please follow up with your instructor**

**NOTE: For quizzes or assignments, please do not post comments within the assignment as we cannot review them immediately and sometime never see the comments. Send an email with screen shots where appropriate.**

**General Course Policies:**

- BE PREPARED and ON TIME for class! Study and review course materials before class!
- Be prepared to use the response system (Poll Everywhere) in class starting in the third week and submit answers only for yourself.
- Participate actively and ask questions during class if you don't understand something, can't hear, etc.
- Be respectful of others in class and help create a pro-learning environment. If any disruptions continue to occur in class the student will be asked to leave the classroom and will not receive points for the day.
- When working in groups please be respectful of others

**Make use of all the Office hours available. Feel free to visit the instructors and reach out to the course assistants when you have questions or need additional help!!!**

**COURSE MATERIALS**

Required to bring a laptop/tablet, periodic table and calculator to every class period and all exams.

Recommended Textbook(s):

Chemistry A Molecular Approach, Sixth Edition, by Nivaldo J. Tro, Publisher Pearson

Other Textbook for Reference:

Chemistry 2e, Open Stax https://openstax.org/details/books/chemistry-2e

**Required Modified Mastering Chemistry with access to the Pearson text Chemistry A Molecular Approach 6th edition by Nivaldo Tro.** You can ONLY purchase this code from the bookstore or directly through Pearson. Do not purchase code through a third party source or use a code from the year before.

**To register for the FIRST TIME use the Mylab/Mastering Link in the CH 115 Canvas Site only. You can enter your access code from the Bookstore or purchase a code from Pearson.** ***If you are asked to provide a Course id, something is wrong with your registration, first contact Pearson technical support (link) for help and then if you are still stuck email your instructor.***

**Purchase Options for Required Mastering Chemistry Online access and Recommended Textbook: Chemistry A Molecular Approach 5th Edition by Nivaldo Tro**

1. **Purchase at the Stevens bookstore.** https://stevens.bncollege.com/shop/stevens/page/find-textbooks

Note: Once you buy the access code go to the MyLab and Mastering link in the left hand navigation bar of the CH 115 Canvas site and register. 24 month access is recommended.

2. **Purchase access to Mastering Chemistry through Pearson.** To do this, go in the **Canvas course page go to MyLab and Mastering link in the left hand navigation bar and follow the prompts.**

NOTE: There is a 14-day free trial for the Mastering Chemistry homework system that you can opt for on the Pearson site but you are responsible for making sure you are properly enrolled before the trial period expires.

***Note: This same text and homework system will be used in General Chemistry II, CH 116.***

**REQUIRED CALCULATORS:** You will need a working graphing or scientific calculator (any model) to use in class and on the exams. Make sure it always has a working battery and you know how to use it. You cannot use a calculator on your phone or computer.

**Required Response System:** Poll Everywhere will be used to answer questions in class. This system is provided by Stevens (i.e. free to use) and we will start using it the third week. More details posted on Canvas.

**COURSE REQUIREMENTS**

**CLASS GRADE: Attendance and participation is strongly encouraged and a way to receive points.** To receive credit you must attend the section that you are assigned to. **Work done on in class assignments cannot be made up and you will receive a set number of points if you complete the assignments in their entirety. The class grade will consist of the following:**

**Pre Class Worksheets,** which will post on Canvas at least a week early and will be due the following Friday. To complete these worksheets, please read the assigned sections of the text, review the notes posted on Canvas and/or watch the videos. Each worksheet will be worth 5 points

**In-class Group and Independent worksheets** that will be submitted during class. Answers to the worksheets will be available on Canvas after the week has ended. Each worksheet will be worth 5 to 10 points based on attendance and participation.

**Attendance:** Class attendance will be taken at some points during the class period. If you do not have an excused absence and are not present when attendance is taken you will not receive credit for being present.

**In-class questions: Starting in week 2,** Questions will be asked during class on Monday and Wedneday. . You will earn full points for answering at least 80 % of the questions for 5 or more question or 1/2, 2/3 or 3/4 for less than five questions for each day of the week (Monday and Wednesday). If you answer less than 80% when there are more than 5 question or less than the following 1/2, 2/3, or 3/4 you will not receive points, NO EXCEPTIONS. Each week in class questions will be worth 10 points (5 points/day) except when noted otherwise.

**Approved excused absences from classes and exams include: documented illness, urgent doctor visits, deaths in the immediate family and other documented crises, call to active military duty, court-imposed legal obligations (jury duty, subpoenas), religious days, special requirements of other courses and university sponsored event. NOTE: employment schedules, scheduled interviews or Career Center Co-op or Internship sessions, oversleeping and athletic training/practice schedules are not valid excuse for absences.**

**EXCUSED ABSENCE:** When you miss a class for an excused absence, the points you miss in class will not count against you and you do not need to submit the in class assignments or the preclass worksheet. However, you are strongly encouraged to review all assignments/class notes, which are posted on Canvas and see the instructor or course assistant to discuss what you missed.

**To receive an excused absence you need to e-mail your Instructor and *ONLY your instructor with your documentation ASAP***

**REQUIRED HOMEWORK FROM RECOMMENDED TEXTBOOK**

Modified Mastering Chemistry/MyLab, Publisher: Pearson, Online Interactive Homework . Cannot purchase code through a third party source or use a previously code from the year before. First week of class, **Need to register for the first time and/or purchase through the Mylab/Mastering link in Canvas.** You do not need a course id to register if you go through Canvas. The weekly homework will release at least a week in advance and due the following Monday at midnight (except for Monday holidays when it will be due Tuesday). ***It is recommended that you complete the homework within the week and before you take the quiz.*** You will have 6 attempts to complete each question. Some of the questions will be practice or extra credit questions and will be noted as such. The homework will be synced to Canvas and you will see the assignment when it releases and your grade will regularly update ***(can take 24-48 hours sometimes)*** until you submit assignment.

**All homework assignments will be open for LATE submission with a penalty of 2% per day past the due date.**

If you have an excused absence for a long time period, you can discuss with the instructor an excuse for a particular assignment so the points do not count against you.

NOTE: After you have submitted the assignment, the assignment will be available for you to practice, but you will not receive extra points.

Canvas homework: Short library video on literature searching and 2 one paragraph assignments on a journal article more information to follow. (dates to be announced).

**QUIZZES** There will be weekly online Canvas quizzes and quizzes occasionally during class. The weekly online quizzes will release Friday at 3PM and be due Tuesday at 11:59PM (except where indicated) and will focus on the material covered that week. You will usually have two attempts to complete each quiz and only the highest score will count. NO LATE QUIZZES ACCEPTED! NOTE: Lowest quiz grades will be dropped.

On three Fridays: 9/30, 10/28, 11/18 there will be a short group problem solving quiz during class and the grade will go towards the quizzes.

**EXAMS Three one hour individual exams** offered during the D110 Quiz period, Tuesday 5:00-6:00 PM EST on Canvas and in person.

Individual Exam 1: Tuesday,10/4 from 5:00-6:00 PM EST in person and on Canvas (Room TBA)
Individual Exam 2: Tuesday, 11/1 from 5:00-6:00 PM EST in person and on Canvas (Room TBA)
Individual Exam 3: Tuesday, 11/29 from 5:00-6:00 PM EST in person and on Canvas (Room TBA)
Optional Exam 4: Tuesday 12/13 from 5:00 - 6:00 PM EST in person and on Canvas (Room TBA)

Final Exam: TBA during final exam period on Canvas
Semester Exams:

- Individual Exams consist of typically ~18 multiple choice, fill in the blank and short answer/problem solving questions. Material for exams taken from class, problems worked in class, worksheets, end of chapter problems, and homework assignments.
- Study material will be available on Canvas at least two weeks before and include previous exams and review materials.
- For the individual exams, you have the option to use **ONE SIDED** handwritten sheet of notes written in pen on a white page of letter sized paper with your name and honor pledge written on top. You will submit this with the exam.
- If you have disability accommodations, submit your paperwork and you will take the exams in the library or another distraction free environment.
- After each exam, exam grades will be posted on Canvas by the following Monday at the latest.
- Students will have the opportunity to submit post exam survey and exam reviews to improve their exam score that will be due the following week after the exam.

**Exam Review sessions sponsored by Academic Support Center (ASC) and CH 115** (2 reviews per exam: one via zoom and recorded and one in person).
Dates of exam review sessions will post by the second week of the semester.

- **Make up Exams for an approved excused exam absence**. **A student wishing to take the make-up exam for an approved excused absence need to email the instructor and *Dr. Muisener (course coordinator) if at all possible the day before the exam*. It is the student's responsibility to contact to make the arrangements. NOTE:** Reasons for approved absences and the procedure are listed ABOVE.

**Make ups for individual exams will normally be given the following Thursday from 5:00-6:00 PM EST.**
**Makeup Individual Exam dates: exam 1: October 6; exam 2: November 3; exam 3: December 1. Exam 4 and Final Exam during exam week.**
**NOTE:** If you cannot take the make up exam at this time, you need to provide an excuse and the exam will be scheduled during the final exam period (most likely same day as final).
**Make up exams for the group problem solving exams 1 and 2 will be given during the final exam period (most likely same day as final.). Please note you may work alone when doing the make up.**
**Final exam is mandatory and comprehensive.** The final exam may likely consist of two parts: 1. The American Chemical Society General Chemistry I Concept exam (timed for 50 minutes) 2. 25 questions written by the Instructors which should take an hour and five minutes
**Missing the final constitutes a failing grade in the class.** If you have an approved excused absence OR a conflict with another final exam, you will be able to make up the final exam AFTER the scheduled date. **You need to contact Dr. Muisener, the course coordinator and your instructor to schedule the final exam as soon as you as you are aware of the conflict.**

- *Extensive absences in the lectures or exams may result in a failing grade*

**GRADING PROCEDURES** Grades will be based on the following:

| | |
|---|---|
| Class grade: Pre-class worksheets, in class group worksheets, In class questions /attendance (Poll Everywhere) | **18 %** |
| Homework: Mastering chemistry and 2 writing assignments | **15 %** |

| | |
|---|---|
| Weekly Quizzes (on Canvas)<br><br>Note: Dropping lowest quiz grade. | **12 %** |
| EXAMS: T3 1 hour individual exams (12 % each) Includes post exam reviews | **35 %** |
| Final exam | **20 %** |

**GRADING SCALE:** Tentative Percentages and grades are shown below. If there are any modifications, it will only be to improve grades and will post on Canvas. Note: No grades will be rounded up and any modification to the scale will be done for the entire class.

A (100-93.00%), A- (92.99-90.00%), B+(89.99-87.00%), B(86.99-83.00%), B- (82.99-80.00%), C+(79.99-77.00%), C(76.99-73.00%), C- (72.99-70.00%), D+ (69.99 to 67.00%), D (66.99 to 60.00%), F< 59.99%

**Late Policy <u>All homework assignments will be open for LATE submission with a penalty of 2% per day past the due date.</u>**

**Quizzes, Preclass worksheets (due at 8AM on Fridays) and Group worksheet assignments (due at end of class period) will not be accepted late for any reason! Note: The lowest quiz grade will be dropped at the end of the semester. Group worksheet assignments will be excused with an excused absence.**

**TUTORING AND SEEKING HELP WITH MATERIAL:**

The advice for General Chemistry I is to keep up with the material. Read the pre class notes, do the homework on time, come to class prepared complete the preclass worksheets actively participate, ask questions and understand and complete the in-class worksheets. **If you are struggling with any material, go to Office Hours and talk to your instructor and course assistant. ATTEND REVIEW SESSIONS. There will be review sessions via Zoom and in person throughout the semester. Schedule will post on Canvas.**

There is FREE tutoring services available through **the Academic Support Center in 2 different ways**

1. Request a free, personal student tutor using this link:
<u>https://www.stevens.edu/directory/undergraduate-academics/academic-support-center</u> Suggested to request tutors as early as possible in the semester.

**<u>2. Drop in free tutoring is also available on the first floor of the Library</u>** and starts September 19.

**RELIGIOUS OBSERVANCES/UNIVERSITY ACTIVITIES:** Students who anticipate the necessity of being absent from class due to a major religious observance or an approved university activity should send an email directly to their instructor for an excused absence. Follow-up documentation may be required.

**TECHNOLOGY REQUIREMENTS**
**Baseline technical skills necessary for course**

- Basic computer and web-browsing skills
- Navigating Canvas

**Technology skills necessary for this specific course**

- Web conferencing for zoom calls

**Required Equipment**

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed
- Microphone: built-in laptop or tablet mic or external microphone

**Required Software**

- Current or first previous major release of Chrome, Firefox, Edge, or Safari browser
- Microsoft Word, Excel, PowerPoint

**Academic Integrity**

**Undergraduate Honor System**

Enrollment into the undergraduate class of Stevens Institute of Technology signifies a student's commitment to the Honor System. Accordingly, the provisions of the Stevens Honor System apply to all undergraduate students in coursework and Honor Board proceedings. It is the responsibility of each student to become acquainted with and to uphold the ideals set forth in the Honor System Constitution. More information about the Honor System including the constitution, bylaws, investigative procedures, and the penalty matrix can be found online at http://web.stevens.edu/honor/

The following pledge shall be written in full and signed by every student on all submitted work (including, but not limited to, homework, projects, lab reports, code, quizzes and exams) that is assigned by the course instructor. No work shall be graded unless the pledge is written in full and signed.

***"I pledge my honor that I have abided by the Stevens Honor System."***

Reporting Honor System Violations

Students who believe a violation of the Honor System has been committed should report it within ten business days of the suspected violation. Students have the option to remain anonymous and can report violations online at www.stevens.edu/honor.

**EXAM CONDITIONS**

The following procedures apply to quizzes and exams for this course. As the instructor, I reserve the right to modify any conditions set forth below by printing revised Exam Conditions on the quiz or exam.

1. Students may use the following materials during quizzes and/or exams. Any materials that are not mentioned in the list below are not permitted.

| Material | Permitted? | |
|---|---|---|
| | Yes | No |
| Handwritten or Typed Notes<br><br>8 1/2 x 11 single sided sheet | X | |
| Textbooks/Online Sources | | X |

| | | |
|---|---|---|
| Other (specify): calculator (scientific or graphing) | X | |

2. Students are/are not allowed to work with or talk to other students during quizzes and/or exams.

## LEARNING ACCOMMODATIONS

Stevens Institute of Technology is dedicated to providing appropriate accommodations to students with documented disabilities. The Office of Disability Services (ODS) works with undergraduate and graduate students with learning disabilities, attention deficit-hyperactivity disorders, physical disabilities, sensory impairments, psychiatric disorders, and other such disabilities in order to help students achieve their academic and personal potential. They facilitate equal access to the educational programs and opportunities offered at Stevens and coordinate reasonable accommodations for eligible students. These services are designed to encourage independence and self-advocacy with support from the ODS staff. The ODS staff will facilitate the provision of accommodations on a case-by-case basis.

For more information about Disability Services and the process to receive accommodations, visit https://www.stevens.edu/office-disability-services. If you have any questions please contact: Phillip Gehman, the Director of Disability Services Coordinator at Stevens Institute of Technology at pgehman@stevens.edu or by phone 201-216-3748.

### Disability Services Confidentiality Policy

Student Disability Files are kept separate from academic files and are stored in a secure location within the Office of Disability Services. The Family Educational Rights Privacy Act (FERPA, 20 U.S.C. 1232g; 34CFR, Part 99) regulates disclosure of disability documentation and records maintained by Stevens Disability Services. According to this act, prior written consent by the student is required before our Disability Services office may release disability documentation or records to anyone. An exception is made in unusual circumstances, such as the case of health and safety emergencies.

## INCLUSIVITY

### Name and Pronoun Usage

As this course includes group work and class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect. This includes the ability for all students to have their chosen gender pronoun(s) and chosen name affirmed. If the class roster does not align with your name and/or pronouns, please inform the instructor of the necessary changes.

### Inclusion Statement

Stevens Institute of Technology believes that diversity and inclusiveness are essential to excellence in academic discourse and innovation. In this class, the perspective of people of all races, ethnicities, gender expressions and gender identities, religions, sexual orientations, disabilities, socioeconomic backgrounds, and nationalities will be respected and viewed as a resource and benefit throughout the semester. Suggestions to further diversify class materials and assignments are encouraged. If any course meetings conflict with your religious events, please do not hesitate to reach out to your instructor to make alternative arrangements.

You are expected to treat your instructor and all other participants in the course with courtesy and respect. Disrespectful conduct and harassing statements will not be tolerated and may result in disciplinary actions.

**MENTAL HEALTH RESOURCES**

Part of being successful in the classroom involves a focus on your whole self, including your mental health. While you are at Stevens, there are many resources to promote and support mental health. The Office of Counseling and Psychological Services (CAPS) offers free and confidential services to all enrolled students who are struggling to cope with personal issues (e.g., difficulty adjusting to college or trouble managing stress) or psychological difficulties (e.g., anxiety and depression). CAPS is open daily from 9:00 am – 5:00 pm M-F. Evening hours are available by appointment in the Fall / Spring semesters and up-to-date information regarding the availability of evening appointments can be found by visiting www.stevens.edu/CAPS. To schedule an appointment, call 201-216-5177.

Due to the pandemic, in-person appointments may be limited until further notice. Up-to-date information about the availability of in-person services can be found at www.stevens.edu/CAPS. Teletherapy (therapy via secure video platform) is available to registered students physically located in the states of New York or New Jersey. Students located outside of NY / NJ are encouraged to pursue local treatment through their personal health insurance. To learn more about the process of finding a therapist please visit the CAPS webpage on Seeking Help Off-Campus.

**EMERGENCY INFORMATION**

In the event of an urgent or emergent concern about the safety of yourself or someone else in the Stevens community, please immediately call the Stevens Campus Police at 201-216-5105 or on their emergency line at 201-216-3911. These phone lines are staffed 24/7, year round. For students who do not reside near the campus and require emergency support, please contact your local emergency response providers at 911 or via your local police precinct. Other 24/7 national resources for students dealing with mental health crises include the National Suicide Prevention Lifeline (1-800-273-8255) and the Crisis Text Line (text "Home" to 741-741). If you are concerned about the wellbeing of another Stevens student, and the matter is *not* urgent or time sensitive, please email the CARE Team at care@stevens.edu. A member of the CARE Team will respond to your concern as soon as possible.

**TENTATIVE COURSE SCHEDULE FOUND ON CANVAS**

**FALL 2022 TENTATIVE COURSE SCHEDULE**

Any deviations to this will be noted on the schedule that will be updated regularly on Canvas.

| Week | Date | Session | Chapter | Topic |
|---|---|---|---|---|
| 1 | Fri Sep 2 | 1 | 1 | Introduction; discuss course syllabus, groups |
| | Mon Sep 5 | | | NO CLASS LABOR DAY |
| | Wed Sep 7 | 2 | 1 | Chapter 1 "Matter, Measurement and Problem Solving", classification of matter, physical changes, unit conversions |
| | Fri Sep 9 | 3 | 2 | Structure of atom, isotopes(2.2 to 2.5) Atoms, Isotopes, Elements, and Concept Map |

- **By Fri Sep 9 at 11:59PM Complete Syllabus Quiz and Course survey on Canvas site**
- **First Pre-class worksheet due Friday Sep 9 at 8AM**
- **Homework: Beginning Knowledge Checkpoint and Mastering Chemistry Homework Set 1: Introduction due Monday Sept 12, 11:59 PM**
- **Online Quiz 1 releases Friday at 3PM and due Tuesday September 13**

| | | | | |
|---|---|---|---|---|
| 2 | Mon Sep 12 | 4 | 2 | Elements, ions, atomic mass(2.6 to 2.8) |
| | Wed Sep 14 | 5 | 2,3 | Molar Mass, moles, compounds (2.9, 3.2 to 3.5) |
| | **Thurs. Sep 15 Last Day to Withdraw without a W** | | | |
| | Fri Sep 16 | 6 | 2,3 | Group Worksheet on moles, compounds, formula mass |

Pre-class worksheet 2 due Friday September 16 at 8AM
Mastering Chemistry Homework Set 2 (Ch 1 and 2) due Monday Sept. 19 at 11:59 PM
Online Quiz 2 Releases Friday Sept 16 at 3 on Canvas and due Tues Sept 20 at 11:59PM

| | | | | |
|---|---|---|---|---|
| 3 | Mon Sep 19 | 7 | 3 | Formula Mass, nomenclature, balancing equations (3.5 to 3.8, 4.2) |
| | Wed Sep 21 | 8 | 4 | Composition of compounds, Stoichiometry/Limiting Reactants (3.9 to 3.10, 4.2-4.4) |
| | Fri Sep 23 | 9 | 4 | Group Worksheet on Limiting Reactants, Theoretical Yield and Percent Yield (4.4) |

Pre-class worksheet 3 due Friday September 23 at 8AM
Mastering Chemistry Homework Set 3 due Monday Sept. 20 at 11:59PM
Online Quiz 3 due Tuesday Sept 21 at 11:59 PM

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|---|---|---|---|---|
| **4** | Mon Sep 26 | 10 | 5 | Molarity, Dissolution of ionic compounds, Reactions in Solution (5.2 to 5.4, 4.5) |
| | Wed Sep 28 | 11 | 5 | Reactions in Solutions (4.5, 5.5 to 5.8) |
| | Fri Sep 30 | 12 | 5 | Group Worksheet on Reactions in Solutions |

Pre-class worksheet 4 due Friday September 30
Mastering Chemistry Hmwk. Set 4 due Mon Oct 3 at 11:59PM
Online Quiz 4 due Tues Oct 4 at 11:59 PM
**Review Sessions for Exam 1 this week**

| | | | | |
|---|---|---|---|---|
| **5** | Mon Oct 3 | 13 | 5 | Oxidation/Reduction (5.9), Review |
| | **Tue Oct 4** | **Exam 1 (5:00-6:00 pm) Chapters 1 through Chapter 5.8** | | |
| | Wed Oct 5 | 14 | 6 | Ideal Gas Laws, Stoichiometry (6.2 to 6.5, 6.7) |
| | Fri Sep Oct 7 | 15 | 6 | Group Worksheet on Gas Law Problems |

Pre-class worksheet 5 due Friday October 7
Mastering Chemistry Hmwk. Set 5 due Tue Oct 11 (Monday October 10 is Columbus Day)
Online Quiz 5 due Tue Oct 11 at 11:59 PM

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| **6** | **Mon Oct 10** | | **Fall recess (No class)** | |
| | Tue Oct 11 follows a Monday Class Schedule | | | |
| | Tue Oct 11 | 16 | 6 | Gas Mixtures, Partial Pressures, worksheet (6.6) |
| | Wed Oct 12 | 17 | 6 | Kinetic Molecular Theory/Real Gases (6.8 to 6.10) |
| | Fri Oct 14 | 18 | 6 | Group Worksheet on Gas Problems |

Pre-class worksheet 6 due Friday October 14
Mastering Chemistry Hmwk. Set 6 due Monday Oct 17 at 11:59PM
Online Quiz 6 due Tuesday Oct 18 at 11:59PM

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| **7** | Mon Oct 17 | 19 | 7 | Introduction to Energy, heat capacity (7.1 to 7.4) |
| | Wed Oct 19 | 20 | 7 | Energy, enthalpy and calorimetry (7.5 to 7.7) |
| | Fri Oct 21 | 21 | 7 | Group Worksheet on Methods for calculating enthalpy (7.4, 7.5 to 7.7) |

Pre-class worksheet 7 due Friday October 21
Mastering Chemistry Hmwk. 7 due Mon Oct 24
Online Quiz 7 due Tuesday Oct 25 at 11:59 PM

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| **8** | Mon. Oct 24 | 22 | 7 | Methods for calculating enthalpy (7.5, 7.7 to 7.9, 7.10) |
| | Wed Oct 26 | 23 | 8 | Properties of light, Electromagnetic Radiation, and wave nature of matter (8.2 to 8.3) |
| | Fri Oct 28 | 24 | 8 | Group worksheet on Energy problems and properties of light |

Pre-class worksheet 8 due Friday October 28
Mastering Chemistry Hmwk 8, due Mon Oct 31
Online Quiz 8 due Tuesday November 1 at 11:59PM
**Review Sessions for Exam 2 this week**

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|---|---|---|---|---|
| **9** | Mon Oct 31 | 25 | 8 | Wave Nature of matter , orbitals, quantum numbers (8.3-8.6) |
| | **Tuesday Nov 1** | **Exam 2** | **Chapter 5.9, 6, 7** | |
| | Wed Nov 2 | 26 | 9 | Quantum mechanics and electron configurations, (9.3-9.5) |
| | Fri Nov 4 | 27 | 9 | Group worksheet on Electron configurations/ properties of ion (9.5, 9.7) |

Pre-class worksheet 9 due Friday Nov 4
Mastering Chemistry Hmwk 9, due Mon. Nov 7
Online Quiz 9 due Tuesday. Nov 8 at 11:59PM

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| **10** | Mon Nov 7 | 28 | 9,10 | Periodic trends, ionization energies, electron affinities (9.6-9.9) |
| | Wed Nov 9 | 29 | 10 | Introduction to Lewis Dot Structures (10.1 to 10.3) |
| | Fri Nov 11 | 30 | 10 | Group Worksheet on Lewis Structures |

Pre-class worksheet 10 due Friday November 11
Mastering Chemistry Hmwk 10, due Mon Nov 14
Online Quiz 10 due Tuesday Nov 15 at 11:59PM

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| **11** | Mon Nov 14 Charge | 31 | 10 | Electronegativity, Bond polarity, Resonance, Formal (10.6 to 10.8) |
| | Wed Nov 16 | 32 | 11 | VSPER, Molecular Geometries, Polarity (11.2 to 11.5) |
| | Fri Nov 18 | 33 | 10, 11 | Group Worksheet on Resonance, VSEPR, Molecular Geometries, Polarity |

**Review for Exam 3 this week and beginning of week 12**
Pre-class worksheet 11 due Friday, Nov. 18
Mastering Chemistry Hmwk11, due Mon Nov 21

Online Quiz 11 due Tuesday Nov 22 at 11:59PM

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| **12** | Mon Nov 21 | 34 | 11 | Valence Bond Theory and Hybridization, Bond Energies and Bond Length (11.6-11.7, 10.10) |

**Wed Nov 23-Sun Nov 27 THANKSGIVING BREAK**

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|---|---|---|---|---|
| **13** | Mon Nov 28 | 35 | 12 | Ionic Bonding/Born Haber Cycle, Intermolecular Forces (10.4, 12.2 to 12.3) |
| | **Tue Nov 29** | **Exam 3** | **Chapter 8, 9, 10 (except 10.4), 11 to 11.5** | |
| | Wed Nov 30 | 36 | 12 | Intermolecular Forces, Vapor Pressure (12.3-12.5) |
| | Fri Dec 2 | 37 | 12 | Group Worksheet Born Haber Cycle, intermolecular forces, and vapor pressure |

Pre-class worksheet 12 and 13 due Friday Dec 2
Mastering Chemistry Hmwk12 and 13, due Mon Dec 5
Online Quiz 12 and 13 due Tuesday Dec 6 at 11:59PM

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| 14 | Mon Dec 5 | 38 | 12 | Vaporization, Vapor Pressure, Phase Changes, Phase Diagrams (12.6 to 12.8) |
| | Wed Dec 7 | 39 | 13 | Crystallinity, Unit Cells, X-Ray Crystallography, (13.2 to 13.4 |
| | Wed Dec 7 Last Day to Withdraw from a Course | | | |
| | Fri Dec. 9 | 40 | 13 | Group Worksheet Phase Changes and Solids |

**Review for Exam 4 and Final Exam this week**
Pre-class worksheet 14 due December 9
Mastering Chemistry Hmwk14, due Monday Dec 12
Online Quiz week 13 and 14 due Tuesday Dec 13

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| **15** | Mon Dec 12 | 41 | 13 | Organic Chemistry and Polymers |
| | **Tue Dec 13** | **Exam 4 Cumulative Week 1-13 Optional Exam, Register week 14 through Canvas Survey. If take exam 4 lowest exam grade dropped. Make ups only offered for students with excused absences during Finals week** | | |

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|---|---|---|---|---|
| | Wed Dec 14 | 42 | 15 | Introduction to Kinetics |

**Last Pre-class worksheet due Wednesday December 14**
**Review for Final Exam**
Mastering Chemistry Hmwk 15, due day before Final
Online Quiz week 15 due day before Final

16 **TBA (between 12/15 and 12/22 as announced by Registrar) FINAL EXAM**

**Final exam will be comprehensive and cover all the material covered during the semester and include a section on your group project**

**There may be two parts: Part I the ACS Exam**
**Part II (18 questions written by instructors: 14 Multiple Choice and 4 open ended questions**