GENERAL CHEMISTRY
CHEM 101-01  Spring 2022

This syllabus is subject to change. Please check OAKS for the most up-to-date syllabus and announcements.

Instructor: Dr. Katherine M. Mullaugh (she/her)
Email: mullaughkm@cofc.edu
Office: SSMB 310
Phone: 843.953.6587
Lecture Meeting times: Tues./Thurs., 12:15 – 1:30 pm
Lecture Meeting place: SSMB 127

Student Hours: SSMB 310 or Zoom https://cofc.zoom.us/j/4072540070 (Meeting ID: 407 254 0070)

Co-requisite: CHEM 101L
Required Materials: Chemistry in Context, 10th edition, ACS
Access code for Connect online homework
Scientific Calculator

Questions this course will cover
- What are the important sources and types of air pollution?
- Where do colors come from?
- Will the ozone layer recover?
- Why are some gases greenhouse gases?
- What makes water such a vital resource?
- How can polluted water be purified?
- Where does our power come from?
- Should we look to nuclear to solve our energy needs?
- What are the barriers and limitations of renewable energy?

Course Description
A course designed for both non-science majors and students entering allied health fields. Basic chemistry concepts (atomic structure, chemical bonding, stoichiometry, kinetics, equilibria, acids and bases, and nuclear chemistry) are emphasized, giving the student a strong chemical basis to understand pressing environment and public health issues such as climate change and pollution. Topics include sources and types of air pollution, ozone layer chemistry, the molecular basis of the greenhouse effect, water pollution and purification, and energy systems.

Student Learning Outcomes:
1. Critique and give examples of how understanding and applying chemistry is a means to address sustainability, including the important issues of: the air we breathe; the water we drink; protection of the ozone layer; global climate change; alternatives for energy sources and storage; and the threats of acid rain and ocean acidification.
2. Demonstrate the ability to solve a range of chemistry problems by applying the skills of mathematical problem solving and understanding of the metric system, significant figures, unit conversion factors, symbols for chemical reactions, and chemical principles.
3. Describe how energy changes in a chemical system are quantified as the substances in the system change state or temperature or undergo chemical reactions.
4. Define the atomic structure and energy levels of an element and explain how they are represented.
5. Explain how the information in the Periodic Table can be used to predict polarity of chemical bonds and the geometry and polarity of chemical substances.
6. Explain how nuclear reactions change elemental structure and discuss how nuclear chemistry is important in medicine, energy production, and warfare.
Sustainability: Sustainable practices meet current needs without compromising the ability of future generations to meet their own needs. As a sustainability-related course, a significant portion of our discussion (including student discussions on OAKS) will apply our knowledge of chemistry to support and inform our understanding of sustainability challenges. Students will be assessed on the following sustainability-related student learning outcomes:

- Students can identify various elements of sustainability and the relationships between them (social, economic and environmental).
- Students can identify policies and practices that have led to unsustainability.

Course Structure and Weekly Road Map
The course will be organized into 14 modules, each following the same weekly schedule, represented in the table below. See OAKS for details about the topics covered by each module and due days (all due times are 11:59 pm).

<table>
<thead>
<tr>
<th>Tuesday - Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Monday</th>
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<tbody>
<tr>
<td>Attend class and/or watch online lectures</td>
<td>Read module book sections</td>
<td>Participate in online discussion boards – two posts by Friday</td>
<td>Complete online homework (Connect) – due Sunday</td>
<td>Complete quiz – due Monday</td>
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Grading: Weekly quizzes 60% (lowest quiz grade dropped)  
Homework 10%  
OAKS Discussions 10%  
En-ROADS Assignment 5%  
Final Exam 15%  
100%

(Optional) Online Lectures: I will post video content from my asynchronous version of this course, which can be used as a substitute or supplement to in person lectures. The same content covered by the videos as what will be lectured on in person. If you prefer to treat this as an asynchronous class, or need to treat it as such sometimes, that is acceptable. When using the videos as a substitute for lecture, treat these sessions as you would a lecture course, taking notes while you watch, giving you full attention and viewing at a normal pace. Alternatively, students attending lecture in person may like to use the videos as a resource for studying.

Communication: Communication with me can occur in many different forms, including email, the OAKS discussion board and over Zoom. While I am happy to answer any questions about the course or the material we cover, please check that your question cannot first be answered elsewhere. If your question cannot be answered by the syllabus, past class emails or announcements/discussions on OAKS, consider first asking another student in the class. Only after trying to find the answer elsewhere should you contact me over email.

Email: When emailing, please include “CHEM 101“ in the subject line. Include a respectful greeting, use complete sentences and sign off the email with your full name. Most importantly, proofread your emails. Typically, I will respond within 24 hours during the week, but responses over the weekend may take longer.

Student hours: My office hours are “open door” times when I will be available in my (SSMB 310) or over Zoom (meeting ID 407 254 0070) at regular times throughout the week (see previous page). If you plan to come to office hours via Zoom, please send an email in advance so I know to sign on. If you would like to meet with me but cannot make my regularly scheduled office hours, contact me with some suggested times and we can set up a meeting that works with both of our schedules.
Quizzes: There will be weekly quizzes throughout the semester, available for completion at any time during a 48-hour window from Sunday morning through Monday evening (completed quizzes due at 11:59 pm Mondays). Quizzes will be administered using the quiz function in OAKS and will be timed (typically 30 minutes for 10 questions). Although quizzes will be open book and open notes, it will be difficult to complete the quiz if a student is searching through their course materials for every question. It is therefore recommended that you study for the online quizzes in the same manner as you would a quiz or test taken in person. At the end of the semester your lowest quiz grade will be dropped.

Homework: Homework problems will be assigned weekly using the Connect online homework program. Follow the link within OAKS to get your online homework set up. Note you will either need to purchase an access card from the bookstore (as part of a bundle with the book or eBook), or you may purchase it online. Typically, homework will be due every Sunday evening (11:59 pm).

OAKS Discussion: I will provide weekly discussion prompt related to the content of the week, usually looking at how the topics of that week can be related to sustainability. The goal of the discussions is to help you draw connections between course material and the world at large. You must engage in the weekly discussion two times by either responding directly to my prompt or to another student’s response (at least one of your two posts must be a response to another student). In addition to demonstrating professionalism in your posts (see below), discussion participation will be evaluated based on relevance to the topic and novel contributions. Reduced or no credit will be given for posts that reiterate a point already made, are unfocused, difficult to understand or otherwise make no meaningful contributions (e.g., “Good point!”).

Final Exam: The final exam will be a cumulative test administered in person. Details will be announced closer to the time of the final exam in April. The En-ROADS assignment (details forthcoming) will be due at the time of the final.

Online Professionalism: Please abide by the following rules pertaining to online OAKS discussions:

- Tend your threads. If you start a conversation in an OAKS discussion forum, reply to those who contribute.
- Do not type in all capital letters aside from acronyms.
- Think before you post. Once posted, it can’t be unposted.
- We do not have to agree on everything, but we can all remain professional and collegial.
- Be forgiving. Anyone can make a mistake. We are all learning together.

How to be successful in this class:

- *Engage with course material regularly.* By having material broken up into small “chunks” in the form of weekly modules, we can avoid the anxiety that can come with high stakes assignments and exams. Try to deepening this practice by doing a little bit of chemistry every day, whether it is attending lecture, reading the book, doing homework problems, viewing videos and completing practice problems. As much as you can help it, avoid waiting until right before the deadlines to submit work to avoid extra stressful situations.

- *Do not undermine your own learning.* That means, do not split your attention between class videos and other things and do not watch videos at faster speeds. Do not skip class and the videos all together. Don’t overlook the value of your textbook. Don’t fall into the trap of thinking you don’t need to learn anything before attempting an online quiz.

- *Engage in OAKS Discussions.* Make two thoughtful contributions to the open-ended discussion threads. By taking time to draw new connections between course material and your other interests, you will deepen your learning and appreciation of chemistry.

- *Establish a rhythm.* We will follow the same general schedule each week. Make sure you have a good understanding of due dates so nothing falls through the cracks. I will post checklists to help keep you on track. Some students find it helpful to schedule reminders in their phones for important deadlines.

Disability Services: Any student eligible for and needing accommodations because of a disability is requested to speak with me during the first two weeks of class, or as soon as the student has been approved for services so that reasonable accommodations can be arranged. Extended time for online quizzes is an example an accommodation, but please secure the necessary documentation before requesting it.
Academic Dishonesty: In this course, the most serious form of academic dishonesty would be getting assistance on an online quiz from another individual, whether they are in this course or not. Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when suspected, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student’s actions are related more to misunderstanding and confusion will be handled by the instructor. The instructor designs an intervention or assigns a grade reduction to help prevent the student from repeating the error. The response is recorded on a form and signed both by the instructor and the student. It is forwarded to the Office of the Dean of Students and placed in the student’s file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This status indicator will appear on the student’s transcript for two years after which the student may petition for the XX to be expunged. The F is permanent.

Students can find the complete Honor Code and all related processes in the Student Handbook at: http://deanofstudents.cofc.edu/honor-system/studenthandbook/.

Academic Support Services—The Center for Student Learning: The Center for student Learning’s (CSL’s) academic support services provide assistance in study strategies, speaking & writing skills, and course content. Services include tutoring, Supplemental Instruction, study skills appointments, and workshops. Students of all abilities have become more successful using these programs throughout their academic career and the services are available to you at no additional cost. For more information regarding these services please visit the CSL website at http://csl.cofc.edu or call (843) 953-5635.

Mental & Physical Wellbeing: At the College, we take every students’ mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges, please consider contacting either the Counseling Center (professional counselors at http://counseling.cofc.edu or 843.953.5640) or the Students 4 Support (certified volunteers through texting "4support" to 839863, visit http://counseling.cofc.edu/cct/index.php). These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

Food & Housing Resources: Many CofC students report experiencing food and housing insecurity. If you are facing challenges in securing food and housing, please contact the Dean of Students for support (http://studentaffairs.cofc.edu/about/salt.php). To learn about food and housing assistance available to you, go to http://studentaffairs.cofc.edu/student-food-housing-insecurity/index.php. In addition, there are several resources on and off campus to help. You can visit the Cougar Pantry in the Stern Center (2nd floor), a student-run food pantry that provides dry-goods and hygiene products at no charge to any student in need.

Inclement Weather, Pandemic or Substantial Interruption of Instruction: If in-person classes are suspended, faculty will announce to their students a detailed plan for a change in modality to ensure the continuity of learning. All students must have access to a computer equipped with a web camera, microphone, and Internet access. Resources are available to provide students with these essential tools.

Inclusion: The College of Charleston offers many resources for LGBTQ+ students, faculty and staff along with their allies.

- Preferred Name and Pronoun Information
- On Campus Gender Inclusive facilities
- Campus Resources
- College of Charleston Reporting Portals
- National Resources for Faculty & Staff
- GSEC Reports
- Documenting LGBTQ Life in the Lowcountry (CofC Addlestone Library Special Collections Project)
- College of Charleston Quality Enhancement Plan (QEP)
- Articles about CofC and LGBTQ+ Issues