Given the fluid nature of this semester, course specifics are 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: Online, asynchronous
Office Hours: Office hours on Zoom (Meeting ID: 407 254 0070)
   Tuesday: 2 – 3 p.m.
   Wednesday: 10 – 11 a.m.
   Thursday: 3 – 4 p.m.
   Friday: 12 – 1 p.m.

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
This class is an introductory course in chemistry designed primarily for students who would like an overview of chemistry as it relates to the world at large. This course aims to use topics of environmental, biochemical, and industrial relevance to introduce students to atomic structure, chemical bonding, stoichiometry, equilibria, acid-base chemistry, and nuclear chemistry.

Student Learning Outcomes:
1. Critique and give examples of how understanding and applying chemistry is a means to address global 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.

**Online courses are academically rigorous**
We will be covering the same amount of material as would be done in a traditional face-to-face class. Although often perceived otherwise, online courses are sometimes even more challenging than face-to-face courses because students must have a higher degree of self-discipline. It is essential you develop a weekly routine so you can ensure you make steady progress and can meet all deadlines in the course. You should expect to log into OAKS at least 3 – 4 days a week for this course.

**Weekly Road Map**
The course will be organized into weekly modules. Important days and times include:
- Monday: new module opens
- Thursday: discussion posts due by 11:59 pm
- Sunday: Online homework due by 11:59 pm
- Monday: Online quiz due by 11:59 pm (available for 48 hours)

Each module will have a checklist of requirements to be completed each week, summarized in the suggested order below. Additional suggestions on how to be successful along the way are included.

**Grading:**
- Attendance 5%
- OAKS Discussions 10%
- Homework 10%
- Weekly quizzes 60% \( \text{ (lowest quiz grade dropped) } \)
- Final Exam 15%

100%
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.

Office hours: My office hours will be held over Zoom (meeting ID 407 254 0070) at regular times throughout the week (see previous page). If you would like to meet with me but cannot make my regularly scheduled office hours, email me with some suggested times and we can set up a meeting that works with both of our schedules.

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).

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. 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 in a face to face class. At the end of the semester your lowest quiz grade will be dropped.

Final Exam: The final exam will be a cumulative test administered online using the OAKS Quiz function. Details will be announced closer to the time of the final exam in December.

Recorded Lectures: I will post video content weekly, broken up into short topics. Treat these sessions as you would a lecture course, taking notes while you watch. There will be an open OAKS discussion forum each week on which you can ask any questions that arise as you watch. Your “attendance” will be noted by checking your progress on OAKS.

OAKS Discussion: A weekly discussion prompt related to the content of the week will be provided by the instructor, usually looking at how the topics of that week can be related to sustainability. You will participate in these discussions among a small group, assigned by me. 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 in the same thread, are unfocused, difficult to understand or otherwise make no meaningful contributions (e.g., “I agree!” or “Good point!”).

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 with their responses.
- 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:

- Log-in often. Log into OAKS and participate at least three times per week. Failure to participate for 10 days in a row will results in a grade of F due to excessive absences.
• Engage in OAKS Discussions. Make two thoughtful contributions to the open-ended discussion threads each week.

• 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.

• Don’t procrastinate. One of the best features of an online course, that you can work through material at your own pace, is also one of its greatest challenges. Don’t fall victim to thinking you can watch the lectures, complete the online homework and submit weekly discussion posts within one day.

• Show respect for your instructor and classmates. For everyone to learn, students must feel free to share their ideas and ask questions in a non-judgmental environment. Read and benefit from others that may have different experiences and viewpoints than your own. You are welcome to disagree, but please do so respectfully.

### Technology tools that will be used in this course

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<thead>
<tr>
<th>Tool</th>
<th>Purpose</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>OAKS</td>
<td>Course management and communication, assessment</td>
<td><a href="http://blogs.cofc.edu/sits/tutorials/oaks_tutorials/">http://blogs.cofc.edu/sits/tutorials/oaks_tutorials/</a></td>
</tr>
<tr>
<td>Book/eBook</td>
<td>Textbook explaining materials and practice problems.</td>
<td>The book and homework can be purchased as a bundle or individually, at the bookstore or online. The same textbook and online homework system is used in CHEM 102 so consider a one-year access.</td>
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<tr>
<td>McGraw Hill Connect</td>
<td>Online homework system</td>
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<tr>
<td>Zoom</td>
<td>Recorded video lectures, office hours</td>
<td>Integrated into OAKS or I will share a link for office hours (Meeting ID: 407 254 0070)</td>
</tr>
<tr>
<td>Email</td>
<td>When you cannot find your answer in the general course Q&amp;A on OAKS, or you need to discuss something personal/specific to you.</td>
<td><a href="mailto:mullaghkm@cofc.edu">mullaghkm@cofc.edu</a></td>
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**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:** 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/](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](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](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](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](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](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.