CHEM 101-01
General Chemistry

CheM 101-01 Syllabus   Fall 2022
SSMB 129   TR 10:50 AM - 12:05 PM

Dr. James P. Deavor
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843.953.8095
Office: SSMB 144

Drop In Hours:
TR 9:00-10:30
W 11:00-12:30
and by appointment- in
person or by Zoom

Revised 08/22/2022

The syllabus is subject to
change by the professor.
All changes will be
announced in class and
posted on OAKS.

COVID-19
The College of Charleston has a voluntary-only face mask policy. Be respectful of
others. Please be safe outside of class for your benefit and for the benefit of the entire
CofC community. The current campus policy regarding vaccination, testing, isolation, and
quarantining is available at https://cofc.edu/back-on-the-bricks/

COURSE PREREQUISITES OR CO-REQUISITES:
Corequisite: Chemistry 101L. You must either be concurrently
enrolled in the lab or else have already passed the lab. If either is dropped, both must be dropped. The two courses
(CHEM 101 & 101L) are graded independently of each other. The last day to drop with a grade of "W" is Friday October
28, 2022.

PLEASE NOTE: CHEM 101 LABS START Tuesday August 23

COURSE DESCRIPTION
A course designed for both non-science majors and 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.

IS THIS THE RIGHT COURSE FOR YOU? If you are getting a BA in BIOL or simply wanting to meet the natural science
requirement of the General Education requirements for graduation this is a great course for you. However, if you wish to
receive a BS in BIOL, CSCI, GEOL or a BA or BS in CHEM, BS in BIOC or planning on becoming a physician, physician’s
assistant, pharmacist, dentist, or veterinarian, you need to be taking CHEM 111. Completion of CHEM 101-102 does
NOT meet the requirements for subsequent enrollment in CHEM 231-232, organic chemistry. CHEM 101 is not an
acceptable pre-requisite for CHEM 111. If you have any questions as to whether or not this course meets your needs,
please see me as soon as possible.

REQUIRED MATERIALS

- Chemistry in Context, 10th edition, McGraw-Hill, with access code for Connect online
  homework

- Scientific calculator that can perform exponents and logarithms (~$10); bring this calculator
to all class meetings

- A laptop or desktop computer and reliable internet access

The section code for the e-book is:
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?

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 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.

STUDENT LEARNING OUTCOMES FOR NATURAL SCIENCES GENERAL EDUCATION COURSES are assessed in the second semester of the two-course sequence CHEM 101/102.
1. Students apply physical/natural principles to analyze and solve problems.
2. Students demonstrate how science impacts society.

MATH COMPETENCY
Competency is assumed at the level of MATH 101 which includes basic algebra and graphing.

ACADEMIC SUPPORT SERVICES
The Center for Student Learning (CSL), is located on the first floor of Addlestone Library, and offers a wide variety of tutoring and other academic resources. Make use of the Math Lab and the Science Lab as needed. All services are described, and lab schedules are posted on the CSL website (http://csl.cofc.edu).

ATTENDANCE POLICY
You are expected to attend every class meeting. You are responsible for the material covered in class whether you are present or not. Do not come to class if you are in quarantine or isolation or if you do not feel well. If you miss class reach out to classmate for notes from the class.

MODE OF INSTRUCTION
In real time, in class, in person.
ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES Any student eligible for and needing accommodations because of a disability is requested to speak with the professor during the first two weeks of class or as soon as the student has been approved for services so that accommodations can be arranged.

INCLEMENT WEATHER, PANDEMIC, OR SUBSTANTIAL INTERRUPTION OF INSTRUCTION If in-person classes are suspended, the instructor will announce a detailed plan for a change in modality to ensure the continuity of learning. All students must have access to a computer equipped with internet access. Students are responsible for taking course materials with them to continue with course assignments.

HONOR CODE AND ACADEMIC INTEGRITY 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://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php.

- The use of any wireless communication device during a quiz, test, or final exam is prohibited and will be considered a violation of the Honor Code.

OAKS OAKS is the Learning Management System used by the College of Charleston. OAKS, including Gradebook, will be used for this course throughout the semester to provide the syllabus and class materials and grades for each assignment, which will be regularly posted. It is where you may find the syllabus and ancillary course material that supplements the text and lecture (PowerPoint slides, answer keys, etc.) You should check the “News” section at least once between every class meeting.

EMAIL ✉️ This is the best way to contact me: deavorj@cofc.edu. Please start the subject line of all emails to me with “CHEM 101” and then add any further descriptor that you wish. Except on weekends, if you do not receive a response from me within 24 hours that means that most likely I did not receive your e-mail or that it got lost in the daily tsunami of emails, so please try again. Weekend emails may not be answered until Monday. Email via your CofC-issued email account is considered an official method for communication at the College of Charleston. Students are expected to check their College of Charleston official email on a daily basis. Students have the responsibility to recognize that certain communications may be time-critical. “I didn’t check my email”, error in forwarding email, or email returned to the College with “Mailbox Full” or “User Unknown” are not acceptable excuses for missing official College communications via email.

MEET WITH THE PROF Times for meeting with me are posted in the header on page 1. During Drop In times you can do just that, drop into my office without an appointment. Realizing that everyone is not available during those times, you may also set up an appointment to meet either in person or by zoom. Please take advantage of these opportunities.
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<thead>
<tr>
<th>Percentage</th>
<th>Letter Grade</th>
<th>Grade Point</th>
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<tbody>
<tr>
<td>92-100</td>
<td>A</td>
<td>4.0</td>
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<tr>
<td>90-92</td>
<td>A-</td>
<td>3.7</td>
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<tr>
<td>85-90</td>
<td>B+</td>
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<tr>
<td>68-70</td>
<td>C-</td>
<td>1.7</td>
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<td>66-68</td>
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<td>62-66</td>
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<td>1.0</td>
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<tr>
<td>60-62</td>
<td>D-</td>
<td>0.7</td>
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<tr>
<td>Below 60</td>
<td>F</td>
<td>0</td>
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**Connect**
10%

CONNECT is a required purchase and will be used throughout the semester. You may purchase a copy of the printed book if you like, but it is not required.

**Quizzes**
20%

Quizzes will mostly be administered via OAKS and those quizzes will be open note/open book, but you are prohibited from consulting with another human being about the quiz while taking it. Each quiz will be timed, and you will have only one opportunity to take the quiz during the time frame that the quiz is open. Some quizzes may be administered in class. The lowest quiz grade will be dropped.

**Tests**
50%

Three tests will be administered. Failure to take the test when scheduled will result in a zero. It is possible to take a test early. Accommodations can be made for athletes and college-sponsored travel.

**Final Exam**
20%

The final exam will be comprehensive over the entire semester. If you score higher on the final exam than your lowest test score, it will replace that test score. Do *NOT* be late. You should be on campus at least 30 minutes before the start of the final and should plan on being in your seat at least 5 minutes prior to the start of the final exam. If you arrive late you will not be given additional time and instructions may not be repeated. Final grades will be posted on mycofc.edu. Requests for an alternate final exam time must be processed per college regulations no later than 5 p.m. on the last day of class. Failure to take the final exam will result in a grade of "F" for the course.

**EXTRA CREDIT**
0%

Your grade is based solely on the items listed above.

CUMMULATIVE KNOWLEDGE

Each quiz/test will primarily be focused on the material covered in class since the last quiz/test. However, knowledge and skills from previous quizzes/tests will still be needed to succeed on subsequent quizzes/tests.

### TEST SCHEDULE AND IMPORTANT DATES

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Test #</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>T</td>
<td>Aug 23</td>
<td></td>
<td>First Day of Class/ CHEM 111 Labs begin</td>
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<tr>
<td>M</td>
<td>Aug 29</td>
<td></td>
<td>Last Day to Drop/Add</td>
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<tr>
<td>R</td>
<td>Sept 22</td>
<td>Test 1</td>
<td></td>
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<tr>
<td>R</td>
<td>Oct 20</td>
<td>Test 2</td>
<td></td>
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<tr>
<td>F</td>
<td>Oct 28</td>
<td></td>
<td>Last day to withdraw with a &quot;W&quot; from full semester classes</td>
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<tr>
<td>M/T</td>
<td>Nov 7/8</td>
<td></td>
<td>Fall break/Election Day. No classes.</td>
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<tr>
<td>T</td>
<td>Nov 22</td>
<td>Test 3</td>
<td></td>
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<tr>
<td>R</td>
<td>Nov 24</td>
<td></td>
<td>Thanksgiving Day</td>
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<tr>
<td>R</td>
<td>Dec 1</td>
<td></td>
<td>Last Day of Class for this course.</td>
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<tr>
<td>T</td>
<td>Dec 6</td>
<td></td>
<td>Reading Day</td>
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<tr>
<td>M</td>
<td>Dec 12</td>
<td>Cumulative Final Exam</td>
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LECTURE SCHEDULE  We will cover Chapters 1-8 in the text, in order. Check OAKS for continual updates.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
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<tbody>
<tr>
<td>1</td>
<td>Portable Electronics: The Periodic Table in Your Hand</td>
</tr>
<tr>
<td>2</td>
<td>The Air We Breathe</td>
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<tr>
<td>3</td>
<td>Radiation from the Sun</td>
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<tr>
<td>4</td>
<td>Climate Change</td>
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<tr>
<td>5</td>
<td>Water Everywhere: A Most Precious Resource</td>
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<tr>
<td>6</td>
<td>Energy from Combustion</td>
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<tr>
<td>7</td>
<td>Energy from Alternative Sources</td>
</tr>
<tr>
<td>8</td>
<td>Energy Storage</td>
</tr>
</tbody>
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TIPS FOR SUCCESS

1. Take responsibility for all material covered or assigned in class or assigned electronically.
2. Come to class. There are 168 hours in each week. You only have to devote 2.5 of them to coming to class.
3. Check the website in between each class for any updates.
4. Make at least one friend in the class with whom you can share notes if one of you is absent. Being part of a study group is an excellent strategy.
5. If no specific reading assignment is made in class, you should minimally read ahead at least 2 sections in e-book.
6. Keep current in your studies. Do *not* fall behind. Do not cram. You should do some Chemistry at least six days out of every week.
7. Quizzes and tests are cumulative. Failure to learn material at any point in the semester can negatively impact your performance later in the semester.
8. Check answer keys of quizzes and tests to see what and why you missed a question.
9. Please come see Dr. D if you have questions or concerns.
10. At a minimum, spend 2-3 hours of study for each hour that you are in lecture, which equates to 6-9 hours per week, spread out over six days each week and not crammed into a single day. It may require more time than the 6-9 hours to understand and master the material. In your admittance to CofC you have proved that you have lots of ability. If you are willing to invest the time, you will learn an amazing amount, and be extremely pleased with what you accomplish. If you chose not to invest the time, you will not do well in this course.
11. Think about your learning. This is called metacognition. Are you reading and working problems for understanding or just to get your grade and move on?

Some other random thoughts to keep in mind:

Unless you are in a vacuum, you are dealing with chemicals. Chemistry is everywhere!

The periodic table is your friend.

Chemical names and formulas are precise.

Does your answer make sense?

Write out all your units! If your answer does not have the correct units, it has to be wrong.

Significant figures are important.

Love may make the world go around, but intermolecular forces hold it together.

FACEBOOK  The Department of Chemistry and Biochemistry has a Facebook page. It is used to announce opportunities for students (https://www.facebook.com/#!/CofC.Chemistry).

TWITTER  The School of Sciences Mathematics can be followed @CofCSSM.