

# CHEM 1105L: GENERAL CHEMISTRY I LAB

Summer Session I

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| <b>Instructor:</b> Dr. Jesse L. Kern    | <b>Term:</b> Summer I                      |
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**Required Lab Materials:** Lab kits may be purchased from [esciencelabs.com](http://esciencelabs.com) or from the campus bookstore. The kit for this course is *2nd Edition General Chemistry – Version 1* (SKU: Kit4251). Students intending to take the entire General Chemistry Lab sequence (1105L and 1106L) in a single summer may consider purchasing *2nd Edition General Chemistry – Version 3* (SKU: Kit4253) instead, as it contains all material needed for both courses at a reduced cost.

**Supplemental Textbook:** *Chemistry* at openstax, [openstax.org/details/books/chemistry-2e](https://openstax.org/details/books/chemistry-2e). Chemistry by OpenStax is licensed under Creative Commons Attribution License v4.0.

**Course Objectives:** The purpose of this course is to provide an introduction to the basic techniques and methods of chemistry. This objective will be met primarily through the use of hands-on experiments. There will also be a few computer activities to reinforce topics such as safety, chemical nomenclature, and data analysis.

**Corequisite:** The lecture course CHEM 1105 is a corequisite for CHEM 1105L. You may take the lab course without the lecture course if you already have credit for the lecture.

**Lab Manual:** The online lab manual will be accessible from [esciencelabs.com](http://esciencelabs.com) or from the course Moodle page.

**Grading:** Formal lab reports (20%), oral lab reports (20%), data submission (50%), final survey (10%). Late policy: 20% docked per day, and all material not received by the last day of the term will receive a zero.

**Access Services:** Randolph College is committed to providing learning experiences that are accessible for all students and will make reasonable accommodations for individuals with documented disabilities. If you have a learning difference or a disability—mental health, medical, or physical impairment—please contact Diane Roy, Coordinator of Access Services, in the Academic Services Center, 4th floor, Lipscomb Library; at (434) 947-8132; or at [droy@randolphcollege.edu](mailto:droy@randolphcollege.edu).

**Advising Statement:** It is ideal that students intending to major in chemistry take MATH 1149 and 1150 in the first year in addition to CHEM 1105/1105L and 1106/1106L. We highly recommend that chemistry majors take the two-semester general physics sequence (PHYS 1115/1115L and 1116/1116L) no later than their second year. First-year pre-med students who plan to study abroad should plan on taking CHEM 1105/1105L/1106/1106L in their first year as well. Early consultation by the student with the Department Chair is strongly recommended, particularly for students transferring in CHEM 1105/1105L credit.

**Inclusivity Statement:** It is personally important to me to create a learning environment that encourages educational equity and respects the identities (race, color, religion, national origin, age, ability, veteran status, political beliefs, gender/sexuality/relationship diversities) of all students. Please feel free to contact me with feedback in pursuit of this endeavor.

**Lab Schedule:** Lab experiments or related activities will be assigned on Mondays, Wednesdays, and Fridays. Due to the asynchronous nature of online courses, the due date for all graded work will be the following Sunday at 9:00 PM EDT, with the exception that the final week is due the final day of the summer term.

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| Week 1, Wednesday | Introduction to Science                  |
| Week 1, Friday    | General Chemistry Lab Safety             |
| Week 1, Sunday    | <i>Due date for Week 1 material</i>      |
| Week 2, Monday    | Chemical Nomenclature                    |
| Week 2, Wednesday | Google Sheets and Data Analysis activity |
| Week 2, Friday    | Compound Formulas                        |
| Week 2, Sunday    | <i>Due date for Week 2 material</i>      |
| Week 3, Monday    | Qualitative Analysis of Reactions        |
| Week 3, Wednesday | Gas Laws                                 |
| Week 3, Friday    | Gravimetric Analysis                     |
| Week 3, Sunday    | <i>Due date for Week 3 material</i>      |
| Week 4, Monday    | Acid-Base Titrations                     |
| Week 4, Wednesday | Enthalpy and Specific Heat               |
| Week 4, Friday    | Electron Configurations                  |
| Week 4, Sunday    | <i>Due date for Week 4 material</i>      |
| Week 5, Monday    | Molar Mass and Freezing-Point Depression |
| Week 5, Wednesday | Chemical Bonding                         |
| Week 5, Friday    | Molar Volume of Gases                    |
| Week 5, Sunday    | <i>Due date for Week 5 material</i>      |
| Week 6, Monday    | Molar Mass and Vapor Density             |
| Week 6, Wednesday | Final survey and course "checkout"       |
| Final Day of Term | <i>Due date for remaining material</i>   |