

## AS 030.105 Introductory Chemistry Laboratory I (1 credit)

## Summer Session I

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Lab will meet for 3 hours on M, Tu, and Th from 1-3:50 pm.

Office hours: Monday and Thursday 4-5pm.

TA help sessions will be scheduled the day before most assignments and before tests. Times and locations will be announced later.

**Co- or pre-requisite:** AS.030.101 must be taken concurrently or previously. AP credit may NOT be used.

### **Required materials:**

- Lab notebook with duplicate pages (available for purchase at the JHU bookstore or elsewhere)
- ANSI Z-87.1 compliant chemical splash safety goggles (available for purchase at JHU bookstore or elsewhere)
- Chem21Lab (<http://www.chem21labs.com>) available on-line **after** check-in. The cost will be \$25.00 for the session. This includes the manual and the on-line programs for pre-lab and post-lab assignments.

### **Course objectives:**

This course will provide students with some of the basic skills for a chemical laboratory, including safe handling and disposal of toxic and corrosive chemicals, vacuum filtration, accurate solution preparation, pH measurement, and accurate reporting of results, including the use of a laboratory notebook and appropriate use of significant figures. You will also gain experience with graphical analysis, the use of a spreadsheet program for data analysis, and automated data handling. Experiments are designed to support the topics taught in AS.030.101, providing students with a visual understanding of some of the key topics as well as practice applying concepts to experimental procedures, observations, and results.

### **Experiments:**

- 1 A. Check-in and Floating Egg
  1. B & C Scientific Measurement
  2. Synthesis of a nickel compound - stoichiometry
  3. Copper Chemistry
- Laboratory skills exercise - pipette skills and vacuum filtration
4. Molar mass using the Dumas method
  5. Calorimetry and Hess's Law
  6. Enthalpy of Vaporization of Water
  7. Acid/Base Titrations

### **Course policies on attendance:**

Students must attend lab for all scheduled experiments. Make-ups will only be permitted due to illness, not for vacations or because you have an exam the next day. A maximum of 2 make-ups per session will be allowed without grade penalties. Requests due to illness must be received **prior** to your regularly scheduled lab time. All assignments are due at the regular day/time even when you are making up a lab.

Students are expected to arrive on time, dressed appropriately for lab. Shoes that are closed-toe and cover the top of your feet are required. Food and drink (including gum) are not permitted in the lab. Cell phones must be turned off. Please also see the policies document on Blackboard.

**Homework:** See the schedule for due dates.

- *On-line pre-lab* assignments are required for all the laboratory experiments (through Chem21Labs). They are due at 12:30 pm on the scheduled day of the experiment.
- *Post-lab assignments* are required for all experiments (through Chem21Labs). They will be due as shown on the schedule, at 12:30 pm. Printed graphs are due at the beginning of your regularly scheduled lab period.

**Tests:** There will be two 50-minute written tests on June 13 and June 27. If you are ill, you must send an e-mail to Dr. Pasternack **PRIOR** to the time of the test and visit Health and Wellness (or another medical facility) within 24 hours of the exam time and e-mail official documentation to Dr. Pasternack.

**JHU e-mail:** This will be used for Chem21labs registration, Blackboard registration, and all communication with students.

**Blackboard:** The course website has important resources. It is used for announcements, course materials, discussion forums, grades, and on-line lectures.

- **Lectures:** The orientation and every experiment will have a recorded on-line pre-lab lecture. The material in the lectures is required. They will be posted on Blackboard.
- **Grades:** The gradebook on Blackboard will include grades from your Chem21Lab assignments, your notebook and in-lab worksheet grades, and your test grades.
- **Safety:** There is a required on-line safety module and safety test. Students must earn a grade of 90% on the safety test to be permitted to do experiments.
- **General and experiment-specific information:** There is information about graphing, significant figures, and error analyses as well as background information that will be helpful with your experiments.
- **Practice problems:** For each experiment, practice problems are available on Blackboard to help with the numerical calculations in the homework and on tests.
- **Videos:** Videos are posted on some of the techniques and experiments.

**Grading:** Grades will be based 10% on the sum of the pre-lab scores, which will include the safety test, 50% on the sum of the post-lab assignments, notebooks, and in-lab worksheets, and 40% on the sum of the tests (20% for each test). The only extra credit that will be given will be for grade improvement, based on grades for experiments 4-7 and the second test compared to grades for experiments 1-3 and the first test. This will be determined automatically for all students at the end of the session. An upward curve will be applied, if necessary, so that there is parity between summer and regular semester grades. Final grades will be determined on the following scale:

| Percent score | Final grade | Percent score | Final grade | Percent score | Final grade |
|---------------|-------------|---------------|-------------|---------------|-------------|
| 93+ %         | A           | 83-87 %       | B           | 73-77 %       | C           |
| 90-92.5 %     | A-          | 80-82.5 %     | B-          | 70-72.5 %     | C-          |
| 87.5-89.5 %   | B+          | 77.5-79.5 %   | C+          | 60-69.5 %     | D           |

Grades below 60% are failing.

**Ethics:** The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Collaboration, NOT copying is allowed on homework. Although students are encouraged to discuss concepts, writing must be done independently. Ethical violations include cheating on exams, plagiarism on homework from students from this year or prior years, improper use of the internet, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Please refer to the inside cover of your manual and the academic integrity statement posted on Blackboard with the syllabus and policies.

**Disability Services:** If you have a disability and need accommodations in this class, you must obtain an accommodation letter from Student Disability Services, 385 Garland, (410) 516-4720, [studentdisabilityservices@jhu.edu](mailto:studentdisabilityservices@jhu.edu). Please submit it to Dr. Pasternack at least one week before the test if you request test accommodations.

**Other Important Academic Policies and Services:** Students are strongly encouraged to consult the Academic Advising Office for information regarding student services that they offer. The Counseling Center at 3003 N. Charles St. can be reached at (410) 516-8278.

*The information in this syllabus is subject to change. Any changes will be announced on Blackboard and posted with the syllabus on Blackboard.*