

DEPARTMENT OF CHEMISTRY
Common Course Outline
CHEM106 – Chemistry and Society Laboratory

Course Description

Laboratory work deals with experiments that illustrate the significance of chemistry in our society and reinforces the principles discussed in CHEM 105. A combination of CHEM 105 and CHEM 106 must be taken to satisfy the NSLD General Education requirement.

PREREQUISITE(S): MATH 050. **PRE- or COREQUISITE(S):** CHEM 105.

Credits – 1 semester hour. *Three hours laboratory each week.*

General Education – Natural Science Distribution (NSLD)

CHEM106 will satisfy the Natural Sciences Laboratory Distribution (NSLD) requirement when taken with CHEM105 Chemistry and Society lecture. The General Education Program is designed to build skills, knowledge, and attitude necessary for success in work and personal life. This course provides multiple opportunities to develop two or more of the following competencies: written and oral communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy.

Course scheduling

In-person laboratory sections scheduled at the Rockville campus every Fall and Spring semesters. Distance Learning lab option offered Fall, Spring and Summer I sessions. Students in the DL section must pick up lab kit from the Rockville campus and regular internet access and the capability to take and upload digital photos is required.

Course Outcomes

Upon successful course completion, a student will be able to:

- Demonstrate safe laboratory practices.
- Successfully use chemistry laboratory techniques.
- Make observations and collect data.
- Interpret data, perform calculations and draw conclusions.

Laboratory Topics

Laboratory safety; measurements; density; actual yield, percent yield, titrations; acid/base determination; percent error, percent deviation; distillation; separation techniques; synthesis techniques.

Course Requirements

Grading procedures will be determined by the individual faculty instructor, but will include the following *minimum* criteria:

- Laboratory safety assessments
- Pre-laboratory assignments
- Post-laboratory assignments/reports
- Comprehensive Laboratory final examination

Grading Policy

The following letter grade policy will be used to determine the final course grade:

A 100 - 90% **B** 89 - 80% **C** 79 - 70% **D** 69 - 60% **F** <60%

Required Materials

- Experimental procedures available through Blackboard course management system
- Laboratory Goggles
- Laboratory Notebook

Laboratory Experiments (Subject to Change)

1. Laboratory Safety
2. Measurement and Density
3. Physical and Chemical Properties
4. Paper Chromatography
5. Preparation and Properties of Oxygen
6. Sugar Content of Sodas and Juices
7. Red Cabbage as a Natural Acid/Base Indicator
8. Water Hardness
9. Synthesis of Biodiesel
10. Preparation and Properties of Soap
11. Field Trip* TBD
12. Forensic Identification of Illegal Narcotics

*Examples of previous field trip locations include Montgomery County Recycling Center, Montgomery County Water Treatment Facility, Montgomery College Science Center Building (certified Gold LEED building), local winery

Attendance in laboratory is mandatory. Unexcused absence of three or more lab meetings will result in automatic failure.

Student Code of Conduct and Academic Honesty

Montgomery College Syllabus Information