# BIOL G205: BIOLOGY LABORATORY LEARNING SKILLS

| Item | Value |
|---|---|
| Top Code | 040100 - Biology, General |
| Units | 1,2 Total Units |
| Hours | 54,108 Total Hours (Lab Hours 54,108) |
| Total Outside of Class Hours | 0 |
| Course Credit Status | Credit: Degree Applicable (D) |
| Material Fee | No |
| Basic Skills | Not Basic Skills (N) |
| Repeatable | No |
| Grading Policy | Standard Letter (S) |

## Course Description

This is a course in which students will help peers in lab sections of Biology classes. After successfully completing a lab course, students will assist lab instructors by monitoring lab safety, clarifying lab skills and techniques, and explaining experiments that are presented. Students will prepare and present one or more oral and/or written presentations of topics not covered in lecture. This course is recommended for students interested in teaching science. PREREQUISITE: Instructor permission. Transfer Credit: CSU.

## Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Explain the core concepts and methods in the sciences, including cell theory, basic biochemistry, animal physiology and anatomy, microscopy, and the scientific method, as appropriate.
3. Apply critical thinking and analytical skills to correctly interpret data including grade analysis and analysis of experimental data.
4. Practice and monitor adherence to all lab safety rules.
5. Explain scientific techniques, experiments, and exercises.
6. Formulate and evaluate critical biologically related questions.

## Course Objectives

- 1. practice and monitor adherence to all lab safety rules.
- 2. write and critique quiz questions and lab practical questions.
- 3. demonstrate the ability to explain scientific concepts, techniques, experiments and exercises.
- 4. exemplify successful laboratory demeanor, study skills and professional decorum.
- 5. lead study and review groups.

## Lecture Content

A. Laboratory Safety 1. Equipment 2. Materials 3. Disposal procedures 4. Protective clothing/gear/personal grooming 5. Adherence to safety rules and regulations B. Assessment Techniques 1. Quiz Questions 2. Directed study 3. Discussion questions 4. Lab Practical questions C. Scientific Method 1. Hypothesis development 2. Experimental design 3. Data collection 4. Data analysis 5. Control groups 6. Troubleshooting D. Laboratory Demeanor 1. Proper lab clothing/gear/personal grooming 2. Maintenance of equipment and materials 3. Respectful interaction with professors, lab assistants and students 4. Adherence to attendance/tardy rules 5. Supervisory help or advice -when to seek 6. Response to challenges by students in the lab

## Lab Content

A. Laboratory Safety 1. Equipment 2. Materials 3. Disposal procedures 4. Protective clothing/gear/personal grooming 5. Adherence to safety rules and regulations B. Assessment Techniques 1. Quiz Questions 2. Directed study 3. Discussion questions 4. Lab Practical questions C. Scientific Method 1. Hypothesis development 2. Experimental design 3. Data collection 4. Data analysis 5. Control groups 6. Troubleshooting D. Laboratory Demeanor 1. Proper lab clothing/gear/personal grooming 2. Maintenance of equipment and materials 3. Respectful interaction with professors, lab assistants and students 4. Adherence to attendance/tardy rules 5. Supervisory help or advice -when to seek 6. Response to challenges by students in the lab

## Method(s) of Instruction

- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

## Reading Assignments

Websites

## Writing Assignments

Possible activities could include: oral and/or written presentations on a topic not covered in lecture and contribution of potential questions for quizzes and lab practicals.,

## Out-of-class Assignments

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## Demonstration of Critical Thinking

Critical listening to instructor presentations in order to develop appropriate quiz and lab practical questions. Ability to: answer student questions about lab exercises, techniques and concepts presented by the instructor, identify student needs (academic and instructional) and communicate those needs to instructor, observe and evaluate adherence to lab safety rules, identify and correct inappropriate laboratory behavior and apprise instructor if necessary.

## Required Writing, Problem Solving, Skills Demonstration

Possible activities could include: oral and/or written presentations on a topic not covered in lecture and contribution of potential questions for quizzes and lab practicals.,

## Eligible Disciplines

Biological sciences: Masters degree in any biological science OR bachelors degree in any biological science AND masters degree in biochemistry, biophysics, or marine science OR the equivalent. Masters degree required.

## Textbooks Resources

1. Required John Lammert. Techniques in Microbiology, A Student Handbook, ed. Benjamin Cummings, 2006 Rationale: .