



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2003-2004
(i.e. 2003-2004)

NEXT REVIEW: 2008-2009
(i.e. 2008-2009)

STATUS: A
(A, I, D)

COURSE TITLE: General Physics with Calculus II Laboratory

COMMON COURSE NUMBER: PHY-2049L

CREDIT HOURS: 1

CONTACT HOUR BREAKDOWN
(per 16 week term)

CLOCK HOURS:
(Voc. Course ONLY)

Lecture: Lab: **32**

Clinic: Other:

PREREQUISITE(S): PHY-2048 and PHY-2048L with a minimum grade of C

COREQUISITE(S): PHY-2049L

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 characters, maximum): This is a continuation of laboratory experiences chosen to coincide with the topics of electricity, magnetism and optics. A special fee will be charged.*

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

UNIT TITLES

- 1. Data Collecting**
- 2. Data Analysis and Deductive Reasoning**



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EVALUATION:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes.

The students will be evaluated using s combination of reports, laboratory experiments, quizzes and exams.

**** Complete the following only if course is seeking general education status ****

GENERAL EDUCATION Competencies and Skills *:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Write clearly and coherently	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	2.5
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	3. mathematical: 2.1,2.2,2.3,2.4 4. scientific: all outcomes
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

** General Education Competencies and Skills endorsed by '05-'06 General Education Task Force*



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Common Course Number: PHY-2049L

UNITS

Unit 1 Data Collecting

General Outcome:

- 1.0 The student shall: be able to perform experiments correctly and collect data accurately.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Utilize basic measuring devices such as rulers, micrometers, vernier calipers, protractors, thermometers, balances, etc.
- 1.2 Assemble and use correctly the appropriate equipment for a given experiment.
- 1.3 Follow the correct safety procedures in performing experiments.
- 1.4 Collect and accurately record data.



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Unit 2 Data Analysis and Deductive Reasoning

General Outcome:

- 2.0 The student shall: be able to analyze the data collected using techniques of the Calculus for the purpose of forming conclusions based in deductive reasoning.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1 Identify and trace error propagation in mathematical operations.
- 2.2 Define and apply the concepts of % error, % difference, mean and standard deviation to analyze data.
- 2.3 Plot data, apply the method of least squares to find the best fit and analyze and interpret data to derive relationships among variable.
- 2.4 Analyze the answer for its reasonableness.
- 2.5 Perform calculations based on the equations from lecture topics.



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