

Basic Course Information University Web Site Link Instructor-Personalized Information

**WILMINGTON UNIVERSITY
COLLEGE OF ARTS AND SCIENCES
(Personalized Current) SCI-105 SEN03 SYLLABUS**

FACULTY MEMBER: Dr. Ernest Linsay **TERM:** Fall, 2009

COURSE TITLE: Physical Science (with Lab)

COURSE NUMBER: SCI 105 SEN03 (Thurs 9:00AM-1:00PM, Peoples Bldg, Rm 222)

TEXTBOOK: **TITLE:** Physical Science, Physics and Chemistry
Sections
AUTHOR: Tillery, Bill W.
TITLE: Laboratory Manual, SCI 105, Physical
Science
AUTHOR: Elliot P. Hertzberg, Editor

If you would like more precise information regarding the textbook(s) for this class, please visit the bookstore website at <http://bookstore.wilmu.edu>

OFFICE HOURS OR METHOD OF CONTACT: W: 302-356-6728
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Email: ernest.c.linsay@wilmu.edu

64 TOTAL HOURS OF INSTRUCTION: 56 Contact Hours
8 Hours Structured External Assignment

PREREQUISITE: None

I. COURSE DESCRIPTION:

The relationship between matter and energy and the principles governing this relationship are examined in this course. It sets forth the basic concepts of physics and chemistry, including the physics and chemistry of materials (their properties, the process by which they are changed, and how they are used) and energy (what it is, why it is important, and how it is used.).

II. COURSE OBJECTIVES:

The student will demonstrate a basic understanding of the following:

Laboratory Safety and the Scientific Method.

Basic Physics

Laws of Motion

Matter and Energy

Electricity and Magnetism

Wave Energy (Light and Sound)

Basic Chemistry

Atomic Structure

Chemical Bonds and Reactions

Ions and Solutions

Chemistry of Life

III. **STRUCTURED EXTERNAL ASSIGNMENT:** Paper on a current scientific issue affecting us today. Details and specific assignment will be given during class.

IV. METHODOLOGY:

A. Teaching Methods– Lectures, discussions, demonstrations, laboratory experiments.

B. Students must read the textbook assignments ***prior*** to class, ***including Chapter 1 for the first class on September 4.***

C. Basis of Student Evaluation

| Factor | Points Per Item | Total Points | Approx % of Final Grade |
|---------------------|-----------------|--------------|-------------------------|
| Tests (4) | 110 | 440 | 45 |
| Quizzes (9) | 11 | 99 | 10 |
| Labs (13)* | 20 | 260 | 25 |
| Paper (1) | 150 | 150 | 15 |
| Class Participation | 50 | 50 | 5 |
| TOTAL | - | 1000 | 100 |

* See Attendance Policy below

V. ATTENDANCE POLICY:

Regular and prompt class attendance is an essential part of the educational experience. Wilmington University expects students to exercise good judgment regarding attendance. Students accept full responsibility for ensuring that work does not suffer from absences. All students are expected to attend every scheduled meeting of each class on time. Exceptions may be made for Wilmington University-sponsored or work-related activities, illness, or valid emergencies.

Since a student must be present to do the laboratory portion of each class, a missed laboratory will be graded as **zero (0)**. In calculating the final course grade, the lowest laboratory grade will be dropped.

VI. STUDENTS WITH SPECIAL NEEDS:

Wilmington University actively supports the rights of students with disabilities to have equal access to education. Such students need to self identify by contacting the Office of Student Affairs and furnish documentation verifying the need for special services and/or accommodations. For additional information, please call (302) 356-6940 or go to: <http://www.wilmu.edu/studentlife/disabilityservices/index.html>

VII. COURSE OUTLINE: (see next page)

VII. COURSE OUTLINE (subject to change as may be necessary):

| Class Date | Discussion Topic | Text Chapters | Laboratory Topic | Expt # |
|---------------------|---|---------------------------|---|---------|
| 9/10 | Metric System, Density & Scientific Method | 1 | Metric System Activities & Problems | 1 |
| 9/17 | Motion | 2 (pg 25 – 40) | Rate of Acceleration Due to Gravity | 8 |
| 9/24 | Motion (continued) | 2 (pg 40 – end) | Clothespin Launcher | 16 |
| 10/1 | Energy | 3 | Bouncability | Handout |
| 10/8 | Test 1, Chapters 1 - 3 Heat and Temperature | 4 (pg 91 – 103) | Who Has an Elephant – teams can work on this lab | 4 |
| 10/15 | Wave Motions and Sound | 5 | Tin Can Calorimeter – Heat Produced by Burning Food | 29 |
| 10/22 | Electricity and Magnetism | 6 (pg 139 – 157) | Magnetism | 30 |
| 10/29 | Reading Week – No Class | | | |
| 11/5 | Test 2, Chapters 4 – 6. Lab Expt #4 due. Atoms and the Periodic Table | 8 (pg 203-211, 216 - end) | Density of CO ₂ | 24 |
| 11/12 | Atoms and the Periodic Table (Continued) Draft of Independent Paper Due | 8 (Continued) | Air Is Needed for Burning | 43 |
| 11/19 | Chemical Bonds | 9 | Structure of Molecules – Molecular Models | 40 |
| 11/26 | Thanksgiving – No Class | | | |
| 12/3 | Test 3, Chapters 8 – 9 Chemical Reactions | 10 | Simple Chemical Reactions | 42 |
| 12/10 | Water and Solutions Independent Paper Due | 11 | Acids and Bases | 48 |
| 12/17 | Organic Chemistry | 12 Not nomenclature | Preparation of “Flubba” | 52 |
| Monday 12/21 | Test 4, Chapters 10 – 12 | | | |

Note: Text Chapters 7 and 13 will not be covered