Course Number: SCI 102

Name of Course: Matter and Energy

Delivery Mode: On-campus

Instructor Information: Tom R. Herrmann
Office: Science Center (Badgley Hall) 107D
Office phone: 541-962-3315 (on-campus this is X23315)
E-Mail: tom.herrmann@eou.edu

Prerequisites: MATH 070 or equivalent.

Course Description: The second term of a three-term introductory science course designed to provide students with a broad background in the physical sciences with emphasis on the scientific method, optics and motion. The curriculum stresses both theoretical principles and applications of concepts using experimentation as a vehicle for modeling scientific process. This course is especially suited for students preparing for elementary school science teaching and may be helpful to students seeking preparation for the National Teaching Examination in General Knowledge or General Science.

Required Text and Other Materials:  
  - A calculator with scientific functions.  
  - A looseleaf binder for laboratory work.  
  - A protractor, a straightedge, and a stapler.

Course Objectives. This course is designed to:

1. give students an introduction to science and to the scientific method as a tool to ask and answer questions about the physical world.
2. give a knowledge of general physics laws related to simple mechanics and optics.
3. stimulate critical thinking and active learning.
4. provide some basic skills in teaching science at the elementary level.

Grading Procedure: 34% of your final grade will be determined by the written exams, 33% by laboratory experiments and their write-ups, and 33% by chapter quizzes, homework group discussions, and papers. The second category includes attendance: you receive no credit for labs or discussion if you are not there, of course.

Letter grades will be assigned based on the following scale:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>86-100%</td>
<td>A</td>
</tr>
<tr>
<td>75-85%</td>
<td>B</td>
</tr>
<tr>
<td>65-74%</td>
<td>C</td>
</tr>
<tr>
<td>55-64%</td>
<td>D</td>
</tr>
<tr>
<td>&lt;55%</td>
<td>F</td>
</tr>
</tbody>
</table>
**Brief Outline of Course Content:**  1. Each lesson will consist of a reading assignment from the textbook. In SCI 102 we will cover chapters 3, 6, and 7. Before tackling Chapter 3, however, we will review some concepts contained in chapters 1 and 2.
   2. We will complete several laboratory exercises.
   3. Problems from the end of each chapter will be assigned.
   4. The URL for the course web page is
      
      http://physics.eou.edu/courses/sci102/sci102.html
      
      This page will contain links to a course schedule, the homework assignments, and some review sheets.

**Methods of Assessment:**  1. Homework will be graded and returned promptly.
   2. There will be quizzes over material from each chapter.
   3. There will be a mid-term exam and a final exam.
   4. Laboratory sessions are interactive. The instructor will be informally quizzes and interacting with students as they work through the “guided exploration” sessions. This provides the instructor with feedback as to which concepts and skills are well understood and which need more work.

**Course Requirements:**  1. Attendance. You have to do the labs to learn.
   2. Complete all text readings, on-line quizzes and laboratory assignments.
   3. You will be required to perform simple experiments and report them according to the guidelines provided.
   4. You will also be required to write one short paper (approximately 1500 words) on a scientist of your choice, subject to instructor’s approval. It will be a good idea to discuss the selected topic with me prior to starting the paper. A rough draft will be turned in initially for comments, followed by the final draft.
   5. There will be one mid-term exam and one (comprehensive) final exam. The exams mostly involve problem-solving.
   6. Bring a calculator to all classes and exams.

**Statement on Academic Misconduct:** The University of Eastern Oregon places a high value upon the integrity of its student scholars. Any student found guilty of an act of academic misconduct (including, but not limited to, cheating, plagiarism, or theft of an examination or supplies) may be subject to having his or her grade reduced in the course in question, being placed on program or suspended from the university, or being expelled from the university-or a combination of these. (Please see http://www.eou.edu/saffairs/handbook/honest.html and http://www.eou.edu/saffairs/handbook/sect2b.htm.

**Statement on Americans with Disabilities:** If you have a documented disability or suspect that you have a learning problem and need accommodations, please contact the Disability Services Program in Loso Hall 234. Telephone: 962-3081.

Syllabus prepared by Tom R. Herrmann.
Last revision: June 2005