PHYS 1415 Physical Science I Syllabus
Eastfield College

Instructor Information
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Course Information
Course Title: Physical Science I
Course Number: PHYS 1415
Section Number: 45780
Semester/Year: SUMMER – I
Credit Hours: 4
Class Meeting Time/Location: INET -- M T W R F S U
Certification Date June 08 (Monday), 2020
Last Day to Withdraw: June 24 (Monday), 2020

Course Prerequisites
College level ready in Reading.

Course Description
Course designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy, and meteorology. It is a study of the basic principles and concepts of physics and chemistry, showing the relationship of these two sciences to the physical world at an introductory level. (3 Lec., 3 Lab.)
Coordinating Board Academic Approval Number 4001015103
Student Learning Outcomes

Upon successful completion of this course, you will be able to:

- Demonstrate knowledge of the basic laws of Physics that pertain to the study of motion, forces, energy, waves, electricity, magnetism, and light.
- Demonstrate knowledge of the basic laws of modern Physics that pertain to the study of elementary particles, nuclei, and atoms.
- Demonstrate knowledge of the Periodic Table of the Elements and chemical reactions.
- Apply the principles of Physics and Chemistry to explain everyday phenomena.
- Relate the contributions of important scientists and describe methods used by them to explain their observations.
- Perform lab experiments and exercises that illustrate important principles of Physics and Chemistry, gather and analyze data and reach conclusions.
- Develop the ability to work together in collaborative groups while performing labs and other classroom activities.

Texas Core Objectives

The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
5. **Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making
6. **Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Required Course Materials

• Computer w/ Internet access, Internet browser, CamScanner App
• A scientific calculator (one that does trigonometric and logarithmic functions, as well as scientific notation) and a ruler.
• Lecture notes and lab manual can be found on eCampus.

Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**Graded Work**

The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

**Summary of Graded Work**

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Approx. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation Quiz</td>
<td>1%</td>
</tr>
<tr>
<td>Chapter Quizzes</td>
<td>14%</td>
</tr>
<tr>
<td>Discussion Boards</td>
<td>5%</td>
</tr>
<tr>
<td>Labs</td>
<td>20%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Tests</td>
<td>40%</td>
</tr>
</tbody>
</table>

**TOTAL: 100 %**

**Final Grade**

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
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</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>
Description of Graded Work

Orientation Quiz: This is worth 10 points and it is to be done before you submit Quiz 1. It will help you navigate the website and find all the components of the course.

Quizzes: There is a quiz for each chapter, which is graded for 10 points. Late assignments will not be graded, unless you have made arrangements with the Instructor. A 10-point orientation quiz is also required, to familiarize you with the various components of the website.

Homework: The homework problems for this class will be accessed online via the MasteringPhysics assignment system. There will be homework every week. Each homework will be on chapter/material covered in class. Late assignments will not be accepted. Once you have purchased your MasteringPhysics HW account, you will be able to access your assignments. Upon start of class, a MasteringPhysics course ID will be posted in eCampus, which is required to access assignments for this course.

Completing homework assignments thoroughly and on time is very important. The best way to study for tests in this course is to understand the concepts/material covered and complete the homework by yourself. Test problems will reflect an understanding of both homework problems and examples worked in the lecture. Solving problems with understanding and confidence plays an important role in learning Physics. Please plan to spend lots of time on problem-solving as it is vital to your success. You are encouraged to form a study group. However, you should not copy others’ work or let your study group copy your work.

Labs: All the labs will be done online. Lab handouts will be posted on eCampus every week. You will answers the questions included in the lab and submit the completed lab via eCampus. Lab is worth 20% of the grade. If you have any difficulty completing any of the labs, please email the instructor for help. A student must make a passing grade in lab to pass the course. This course satisfies the core curriculum requirement for scientific discovery and sustainability. A minimum lab average of 60 is required in order to pass the course. If your lab average is below 60, regardless of your course average, your course grade will be changed to be equal to your lab average.

Discussion Board: Discussion topics will be posted on the Discussion Board at regular intervals. Post your frank and thoughtful responses to the original topic and to at least two other classmates. Follow the rules for online etiquette. Your participation on the discussion board will be 5% of your overall grade.
**Tests:** There will be four tests, each worth 100 points. Tests will be multiple choice, true false, short answers, and problem solving. All tests are taken on-line and are open-book, but are timed for 120 minutes. You will receive instructions and passwords prior to the test in the weekly emails.

**General Instructions for Taking Online Tests**
1. You will receive a password by email on the day the test begins. Please make sure you read the email and do not forget the password! If you miss the email you can find I under the Weekly Emails button.
2. You have two hours (120 minutes) to complete the test.
3. Once you enter the test the clock will start. If you take more than two hours, the test will continue, but I will be informed you took longer. After 10 extra minutes, I will use my judgment to deduct points.
4. The test is open-book and notes. However, you need to study before hand! Remember to review the essential things you learned in labs during the previous weeks.
5. You can enter the test ONLY ONCE. Begin the test only when you are ready.
6. Do not wait until the last minute to take the test! The test deadlines at 11:59 p.m. You must enter by 9:59 p.m. at the latest to give yourself the full two hours you are allowed.
7. If you do have problems, please send me an email.

No make-up exams will be given.

**Late Work Policy**
It is in each student's best interest to submit work in a timely fashion. As this is an accelerated course, late work will not be accepted without the instructor's permission.

**Other Course Policies**

**Incompletes**
An incomplete grade of "I" may be given when an unforeseen emergency prevents you from completing the work for this class. Make contact with the instructor immediately if there is a situation preventing you finishing the course.

**Communication**
The primary means of communication for this class is email. You are responsible for ensuring that your email address is correctly listed in the course (Check this on the first day!) and that you are receiving emails from the instructor. To ensure you receive all
notices from the instructor in a timely manner, check your email frequently (at least 3-4 times per week).
If you send the instructor an email with a technical problem or other request that requires a rapid response to meet a deadline, make sure to use the correct subject line and then check your email frequently between the time you send your request/problem and the due date. Extensions will NOT be granted in situations where the instructor responded before the due date with instructions, but the student did not check frequently enough to see the response.

The instructor will reply to all emails sent in the proper format within 24 hours, so double check your format and re-send your email if you do NOT hear back from the instructor within this time frame. Do NOT assume that an unanswered email was received – ALWAYS RE-SEND if you do not receive a reply in 24 hours!

**Required Subject Line Format**
When contacting the instructor, the SUBJECT LINE must contain the course ID (PHYS 1415-section 45780) AND the student’s first and last name. The email itself (the body/message) must ALSO contain course ID and the student’s first and last name at the end of the message. Emails sent without this format will either receive no reply or a reply telling the student to re-send in proper format, which slows down response time.

**Institutional Policies**
Institutional Policies relating to this course can be accessed using the link below. These policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.
Eastfield Institutional Policies (http://www.eastfieldcollege.edu/syllabipolicies)

**Course Schedule**
Listing of Topics by Week

<table>
<thead>
<tr>
<th>Readings &amp; Assignments</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Patterns of Motion and Equilibrium</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Newton's Laws of Motion</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Momentum and energy</td>
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<tr>
<td>Chapter 4</td>
<td>Gravity, Projectiles, and Satellites</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Fluid Mechanics</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>Thermodynamics</td>
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<tr>
<td>Chapter 7</td>
<td>Heat transfer</td>
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<tr>
<td>Chapter 8</td>
<td>Static and Current Electricity</td>
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<tr>
<td>Chapter 9</td>
<td>Magnetism and Electromagnetic Induction</td>
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<tr>
<td>Chapter 10</td>
<td>Waves and Sound</td>
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<tr>
<td>Chapter 11</td>
<td>Light</td>
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<tr>
<td>Chapter 12</td>
<td>Atoms and the Periodic Table</td>
</tr>
<tr>
<td>Chapter 13</td>
<td>The Atomic Nucleus and Radioactivity</td>
</tr>
<tr>
<td>Chapter 14</td>
<td>Elements of Chemistry</td>
</tr>
<tr>
<td>Chapter 15</td>
<td>How Atoms Bond and Molecules Attract</td>
</tr>
</tbody>
</table>