Effective Date: Fall 2016

I. Course Number: PHYS 1415

II. Course Title: Physical Science I

III. Semester Credit Hours: 4 credit hrs (4 contact hrs)

IV. Course Description:
Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy, and meteorology. This course includes a laboratory.

V. Course Delivery Method: Face to face.

VI. Required Textbooks/Resources:

A scientific calculator will be needed for this course.
VII. Student Learning Outcomes:
The objective of the study of a natural sciences component of a core curriculum is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories.

1. Critical Thinking Skills—to include creative thinking, inquiry and analysis, evaluation and synthesis of information.
The student will demonstrate proficiency of CCO #1 by evaluating and synthesizing source material and submitting a written critical analysis of a topic assigned by the instructor.

2. Communication Skills—to include effective development, interpretation and expression of ideas through written, oral and visual communication.
The student will demonstrate proficiency of CCO #2 by evaluating and synthesizing source material and submitting a written critical analysis of a topic assigned by the instructor.

3. Empirical and Quantitative Skills—to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
The student will demonstrate proficiency of CCO #3 by satisfactorily completing handwritten calculations and articulating accurate interpretations in response to prompts on exams and other assignments.

4. Teamwork—to include the ability to consider different points of view and work effectively with others to support a shared purpose or goal.
The student will demonstrate proficiency of CCO #4 by working with a team to write a case essay on a topic assigned by the professor and submitting individual written reflection papers focused on individual- and group-level obstacles encountered, strategies used, and achievements made while completing the case essay project.

Upon successful completion of this course, students should be able to:
(Followed by corresponding CCOs)
1. Understand simple qualitative and concepts of the “Science” (i, iii)
2. Enhance the scientific curiosity by course contents, as well as experiments (i, ii, iii, iii)
3. Describe and illustrate idealized model of phenomena (i, ii, iii)
4. Using problem solving skills and applying appropriate contents learned through this lecture, be prepared being a teacher in the elementary education stage (i, ii, iii, iii)
5. Gain more wider scientific perspective as for the elementary science educators, which will be based on the “19 TAC Chapter 112. Texas Essential Knowledge and Skills for Science and the Texas Education Agency Standard.” (i, ii, iii)
Texas Education Agency (TEA)
Standard I. The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.
Standard II. The science teacher understands the correct use of tools, materials, equipment, and technologies.
Standard III. The science teacher understands the process of scientific inquiry and its role in science instruction.
Standard IV. The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.
Standard V. The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.
Standard VI. The science teacher understands the history and nature of science.
Standard VII. The science teacher understands how science affects the daily lives of students and how science interacts with and influences personal and societal decisions.
Standard VIII. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in physical science.
Standard IX. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in life science.
Standard X. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in Earth and space science.
Standard XI. The science teacher knows unifying concepts and processes that are common to all sciences.

By the end of class, 70% of all students should demonstrate an average or better mastery of the subject matter.

VIII. Course Outline:
Following table provides estimated lecture dates and topics, and changes will be based on the course progress. The test dates could be moved one or two days up or down, or it will be conducted concurrently with lectures. The Final Exam date will be conducted through the BlackBoard system.

Students are expected to read ahead and prepared for the lecture.

<table>
<thead>
<tr>
<th>Week #</th>
<th>Date</th>
<th>Important Notes</th>
<th>Lecture Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>1/20/2016</td>
<td>Wednesday</td>
<td>Introduction, Lab safety</td>
</tr>
<tr>
<td>Week 2</td>
<td>1/25/2016</td>
<td>Monday</td>
<td>Introduction of Science</td>
</tr>
<tr>
<td></td>
<td>1/27/2016</td>
<td>Wednesday</td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>2/1/2016</td>
<td>Monday</td>
<td>Ch. 1 Patterns of Motion and Equilibrium</td>
</tr>
<tr>
<td></td>
<td>2/3/2016</td>
<td>Wednesday</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>2/8/2016</td>
<td>Monday</td>
<td>Ch. 2 Newton’s Laws of Motion</td>
</tr>
<tr>
<td></td>
<td>2/10/2016</td>
<td>Wednesday</td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td>2/15/2016</td>
<td>Monday</td>
<td>Ch. 3 Momentum and Energy</td>
</tr>
<tr>
<td></td>
<td>2/17/2016</td>
<td>Wednesday</td>
<td></td>
</tr>
</tbody>
</table>
### Methods of Evaluation:

<table>
<thead>
<tr>
<th></th>
<th>Homework</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test #1</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Test #2</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Test #3</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Test #4</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td></td>
<td>20%</td>
</tr>
</tbody>
</table>

Total 100%

### Homework

It will be several questions (e.g., multiple-choice, true-false, short essay questions, problem solving, and so on) on each homework assignment. Homework will be given in the end of Wednesday lecture, and it will be submitted in the beginning of next Monday class. Late submission will be taken off the points, but it is encouraging to submit the homework.

### Tests

Test will be selected from previously assigned homework problems, but it will include several additional problems. It will need to use the scientific calculator.
Final Exam

Final exam will be cumulative exam of this semester. Detail will be discussed in the class.

X. Grading Scale:

A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 0-59%

XI. Library/Media Resources Assessment:

A. Books/Periodicals/Electronic Data Bases/Software/Programs:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Available?</th>
<th>If &quot;No,&quot; Est.Cost</th>
<th>Signature, Library Director</th>
<th>Comments</th>
</tr>
</thead>
</table>

B. Computing/Multimedia/Online Media Resources:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Available?</th>
<th>If &quot;No,&quot; Est.Cost</th>
<th>Signature, Assoc. VP, IT</th>
<th>Comments</th>
</tr>
</thead>
</table>

XII. Student Participation:

a. Participation Policy: You are expected to attend all lab classes. Attendance is very important since many topics will be overlapped with the lectures. Taking good class notes is essential. Reading the chapter prior to coming to class is also recommended. You are expected to participate in all team project and/or exercises.

b. Course Etiquette: You are expected to be courteous towards the instructor and your classmates. You are expected to be on time for lecture. Cell phones should be turned off during lecture. You should not talk to your classmates while I am talking or while one of your classmates is asking a question.

XIII. Disability Accommodations: Students with disabilities may request reasonable accommodations through the A&M-Texarkana Disability Services Office by calling 903-223-3062.

XIV. Academic Integrity: Academic honesty is expected of students enrolled in this course. Cheating on examinations, unauthorized collaboration, falsification of research data, plagiarism, and undocumented use of materials from any source constitute academic dishonesty and may be grounds for a grade of ‘F’ in the course and/or disciplinary actions. For additional information, see the university catalog.

XV. A&M-Texarkana Email Address: Upon application to Texas A&M University-Texarkana an individual will be assigned an A&M-Texarkana email account. This email account will be used to deliver official university
correspondence. Each individual is responsible for information sent and received via the university email account and is expected to check the official A&M-Texarkana email account on a frequent and consistent basis. Faculty and students are required to utilize the university email account when communicating about coursework.

XVI. **Drop Policy:** To drop this course after the census date, a student must complete the Drop/Withdrawal Request Form, located on the University website ([http://tamut.edu/Student-Support/Registrar/Dropping.html](http://tamut.edu/Student-Support/Registrar/Dropping.html)) or obtained in the Registrar’s Office. The student must submit the signed and completed form to the instructor of each course indicated on the form to be dropped for his/her signature. The signature is not an “approval” to drop, but rather confirmation that the student has discussed the drop/withdrawal with the faculty member. The form must be submitted to the Registrar’s office for processing in person, email Registrar@tamut.edu, mail (7101 University Ave., Texarkana, TX 75503) or fax (903-223-3140). Drop/withdraw forms missing any of the required information will not be accepted by the Registrar’s Office for processing. It is the student’s responsibility to ensure that the form is completed properly before submission. If a student stops participating in class (attending and submitting assignments) but does not complete and submit the drop/withdrawal form, a final grade based on work completed as outlined in the syllabus will be assigned.

XVIII. **Technical Requirements:**

**Minimum Windows PC Requirements:**
- Pentium IV 1.5GHz+ (preferred: Core Duo)
- 1 GB RAM minimum (preferred: 2 GB)
- 128MB Video Card minimum - Sound Card is required for some courses
- 56K modem minimum (Cable or DSL required for some courses)
- Windows 2000, XP, Vista or 7
- Web browser (Internet Explorer 7.0+; Firefox 3.0+)
- Microsoft Word, minimum Office 97
  - Some courses will need plug-ins such as Flash player 10+, QuickTime player 7.0+, Adobe Reader 9.0+, Java Runtime Environment (Java 1.6.0_15), Windows Media Player 10+, RealPlayer, and Macromedia/Adobe Shockwave.

Some online courses may also require a CD ROM (8x minimum, higher recommended)

**Blackboard has certified the following browsers for computers running Windows Operating Systems:**
- Internet Explorer 8 or 9 (IE is not supported on Windows XP)
- Mozilla Firefox 3.6+
- Google Chrome

**Minimum Apple Macintosh Requirements:**
- Intel Core 2.0GHz+
- 1 GB RAM (preferred: 2 GB)
- 128MB Video Card minimum - Sound Card is required for some courses
- 56K modem minimum (Cable or DSL required for some courses)
- Web browser (Firefox 3.0+ ; Safari 3.0+)
- Microsoft Word, minimum Office 97
  - Some courses will need plug-ins such as Flash player 10+, QuickTime player 7.0+, Adobe Reader 9.0+, Java Runtime Environment, RealPlayer, and Macromedia/Adobe Shockwave.

Some online courses may also require a CD ROM (8x minimum, higher recommended)

**Blackboard has certified the following browsers for computers running Macintosh Operating Systems:**
- Mac OS 10.2 (Jaguar): (Safari 1 is compatible)
- Mac OS 10.3 (Panther): Safari 1.2 (Firefox 1.5 is compatible)
- Mac OS 10.4 (Tiger): Safari 2 and Firefox 1.5
- Mac OS 10.5 (Leopard): (Firefox 2.0 is compatible)

**I-OS and Android Devices**

These devices are currently supported using the Blackboard Mobile App, available for free from your App Store or scan the code below:
To access Texas A&M University - Texarkana, there is an individual license fee of $1.99 per year or $5.99 lifetime. This fee gives you access to the university from all your (same platform) devices; it is not necessary to pay the fee for each device you own.