Course Description

Why study science? Science helps us understand the world around us. Everything we know about the university, from how volcanoes form to what an atom is made up of, is the result of scientific research and experimentation. The Earth is fundamental to life as we know it today. How we got here, the mountain, oceans, organisms, and our interaction with one another is the focus of this course. In addition, for many there is a natural curiosity about how Earth processes work and how humans may or may not be responsible for changing those processes in ways that will alter our lives forever.

This course is designed to give you a survey of the various topics of the geological sciences. This course will reinforce the concepts in science
and how it affects your everyday life. Some topics will illustrate scientific observations of our own environment while others, will be experiments and using scientific techniques.

**Catalog Description:** SCIENCE 1310 is an introductory-level course suitable for non-majors intended to acquaint students with the basic principles of math and science and also general scientific methods of research through a survey of planet Earth. The course emphasizes concepts, general scientific principles, facts and vocabulary. Even though the course is largely non-mathematical, some calculations and problem solving will be necessary throughout the course. Students will learn the inquiry is the process by which science and mathematics are done and reflect how this process can enhance their learning. The empirical results of cognitive science will be used to illustrate the importance of understanding preconceptions, cognitive frameworks, and metacognition. Students will be able to apply this inquiry based framework to research, scholarship, and learning.

**Textbook:** None

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**Course Objectives**

- The student will learn concepts and vocabulary related to science by completing the various activities. Students will explore several important concepts that are of concern to us as citizens, educators, and scientists. They will do this by completing class activities which may include collecting visual data as photographs.
- The student will properly apply the scientific method to research a problem and formulate conclusions. All sciences share a common methodology of attaining knowledge that sees to eliminate bias and prejudice in research. You will learn the difference between a hypothesis and a scientific theory.
- The student will synthesize information from external sources and personal observations and incorporate them into class activities. Learn how scientists think. Scientists observe, question, and analyze, and you will be expected to do the same.
- The student will investigate real world examples by completing a variety of activities. Students will be investigating soil, biota, and associated issues from the El Paso area.
- The student will practice independent thinking. Students will critically evaluate the information they receive regarding environmental issues so they can make informed and independent decisions.
- The student will communicate and defend their methodology and
results using writing, graphical, and electronic forms in the class.
  
- The student will demonstrate their ability to download and use electronic resources and digital software such as Excel, various browser plugins and animations to support learning.

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**Course Expectations**

This course is 100% on-line component that incorporates active learning. Active learning may require a more intensive effort on the part of the student because you will have to gather information on your own as directed by the instructor instead of listening to a lecture.

Coursework is laid out in Learning Modules and should be accessed via the Learning Module link. The Learning Module page includes not only links to each individual module and graded work but also to the assignment and discussion introduction.

You correspond with the instructor and with other students via the Email link when not in class. Your e-mail message will only go to those people you designate. In contrast, postings using the Discussion link are posted so that everyone in the class can read the posting and respond. The Discussion tool will be used in each Learning Module. Feel free to initiate discussions if you have questions or see something of interest to the class as a whole. I may edit and organize discussion postings as needed. If you have questions, there are several means in which to get an answer: send the instructor a message, or, if you are having technical difficulties, contact the Help Desk.

We will be taking advantage of internet resources and software in this course, so expect to download and install needed software and to use programs such as Excel, your computer imaging processing program (such as Paint or Preview), take digital photographs, and install web browser plugins as needed. If you aren’t comfortable with your computer please expect the activities to take extra time while you are learning. Don’t hesitate to contact the Help Desk for technical assistance. They are trained in answering those types of questions. The computer labs in the library and UGLC have the latest software and browser plugins.
Assessment

Grades will be based on the following criteria and will be assigned using the scale:

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

Procedures

- Class work will be posted and should be accessed under the Learning Modules tab. Each Learning Module will include: an introduction to the topic and class activities. Due dates are given on the schedule. **DO NOT MISS CLASS**. It is important to log in every week.
- You should access each Learning Module as soon as you can and note what needs to be done and plan your work accordingly. If you have any questions, please don’t hesitate to ask.
- I will typically visit the electronic classroom daily and will try to acknowledge all e-mails within 2-4 hours during the workweek until 5pm. Questions and messages posted after 5 pm or over the weekend may not be acknowledged until the following day.
- Extra credit, if/when offered, is offered to the entire class, not to individuals.
- For technical difficulties please contact the Help Desk. I may also be able to help you trouble-shoot. Send screen shots so I can see what is going on.
- I make every attempt to present this class free of errors, but they do happen. If you see an error (due date, quiz question, etc.) please email me and let me know so I can fix it ASAP.

Course Outline
<table>
<thead>
<tr>
<th>Topic Description</th>
<th>Activities &amp; Due Dates</th>
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<tbody>
<tr>
<td><strong>Learning Module 1</strong></td>
<td></td>
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<tr>
<td>What is Science?</td>
<td>Discussion 1: Initial post: Jan 18, replies: Jan 19</td>
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<td></td>
<td>Assignment 1: Jan 20</td>
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<td></td>
<td>Discussion 2: Initial post: Jan 23, replies: Jan 24</td>
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<td></td>
<td>Assignment 2: Jan 25</td>
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<td></td>
<td>Discussion 3: Initial post: Jan 26, replies: Jan 27</td>
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<td></td>
<td>Science Project 1: Jan 29</td>
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<tr>
<td><strong>Learning Module 2</strong></td>
<td></td>
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<tr>
<td>How Science Works</td>
<td>Survey: Jan 30</td>
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<td></td>
<td>Assignment 3: Jan 31</td>
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<td></td>
<td>Discussion 4: Initial post: Feb 1, replies: Feb 2</td>
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<tr>
<td></td>
<td>Assignment 4: Feb 7</td>
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<td></td>
<td>Discussion 5: Initial post: Feb 8, replies: Feb 9</td>
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<tr>
<td><strong>Learning Module 3</strong></td>
<td>Assignment 5: Feb 14</td>
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<tr>
<td>Doing Science</td>
<td>Discussion 6: Initial post: Feb 15, replies: Feb 16</td>
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<td></td>
<td>Assignment 6: Feb 21</td>
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<tr>
<td></td>
<td>Discussion 7: Initial post: Feb 22, replies: Feb 23</td>
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<tr>
<td></td>
<td>Science Project 2: Feb 24</td>
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<tr>
<td><strong>Learning Module 4</strong></td>
<td>Assignment 7: Feb 28</td>
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<tr>
<td>The Process of Science</td>
<td>Discussion 8: Initial post: Mar 1, replies: Mar 2</td>
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<tr>
<td></td>
<td>Assignment 8: Mar 7</td>
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<tr>
<td></td>
<td>Discussion 9: Initial post: Mar 8, replies: Mar 9</td>
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<tr>
<td><strong>Learning Module 5</strong></td>
<td>Assignment 9: Mar 21</td>
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<tr>
<td>Ideas in Science</td>
<td>Discussion 10: Initial post: Mar 22, replies: Mar 23</td>
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<tr>
<td></td>
<td>Assignment 10: Mar 28</td>
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<td></td>
<td>Discussion 11: Initial post: Mar 29, replies:</td>
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</table>
Each Learning Module will have an accompanying assignment. These assignments are intended to provide examples of the concepts covered and how scientists work.

Assignments will be graded on a 10 point scale. The grade will be based both on content and on completeness of the response (see below). Assignments are due on the indicated due dates. If you want your work reviewed, turn it in early and you can then revise. Must turn in by the due date in order to earn full credit.

<table>
<thead>
<tr>
<th>Assessment &amp; Grading Criteria</th>
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<td>Assignments: 45%</td>
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<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>9-10</td>
<td>The activity is complete and correct. It shows insight and careful reflection on the topic. It is well written with complete sentences that respond to the questions.</td>
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<tr>
<td>8-9</td>
<td>The activity is essentially complete. The learner shows understanding of the topic although there are minor errors they are not conceptual in nature.</td>
</tr>
<tr>
<td>7-8</td>
<td>The activity is missing one or two answers or there are complete or there are errors in the work that reflect a misconception or lack of understanding.</td>
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<tr>
<td>6-7</td>
<td>The activity is lacking more than one answer. Work is poorly done or displayed and does not demonstrate understanding of topics.</td>
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<tr>
<td>&lt;6</td>
<td>Does not effectively address the activity, major portions are missing.</td>
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</table>
Discussions: 45%

Each Learning Module will have an accompanying class discussion. Discussions will provide you with an opportunity to:

- discuss topics and issues with classmates,
- ask questions of the instructor or fellow classmates, and
- will be used by the instructor to assess your attendance and participation.

Most discussion assignments will require you to look up a topic on the internet and see what's happening in the science world. You will write a couple of paragraphs about the topic and submit it on Blackboard in the discussion forum. You will then be asked to comment on several classmate's discussion entry. The rubrics below will help to guide you through the discussion.

<table>
<thead>
<tr>
<th>Criteria for 1st Posting</th>
<th>Outstanding</th>
<th>Proficient</th>
<th>Basic</th>
<th>Below Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>Each paragraph &gt;5 sentences</td>
<td>Each paragraph has 3-4 well written sentences</td>
<td>1-2 well written sentences</td>
<td>One word response</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Rich in content that demonstrates critical thinking, insight, and analysis</td>
<td>Substantial information which demonstrates some thought, insight, and analysis has taken place</td>
<td>Generally competent comments but information is thin/limited</td>
<td>Very basic statements with minimal or no analysis / insight expressed</td>
</tr>
<tr>
<td>Connections</td>
<td>Clear connections to previous or current content to real-life situations</td>
<td>Connections are made but are not well defined</td>
<td>Limited, if any connections to topic questions. Vague generalities used</td>
<td>No connections are made or are off topic</td>
</tr>
</tbody>
</table>

Topic related Question is provided for a classmate with initial posting

Responds to student's posted question in a manner that demonstrates some thought, insight, and analysis has taken place. At least five well-written sentences.

Points are taken off for the following:

- The use of “I” instead of “You” when referring to yourself
- No punctuation
- Incomplete sentences
- Use of “text talk” as a response (e.g., btw, fyi, OMG)
- Abbreviating the names of states
- Not capitalizing states, first names, the beginning of sentences

Discussion Guidelines:

- Discussions are to be posted within the Message window, including images (embedded). No attachments unless otherwise instructed.
- Use the Edit feature to make changes to your discussion post
instead of generating a new discussion.

- Read all postings and respond to a variety of classmates. If you see someone has not gotten a response to their posting, please respond to them before posting to anyone else.
- Quote the relevant parts of any posting to which you are replying.
- There are no verbal or facial cues in our discussion area so be aware that what you type may not be what your classmates may think you are trying to convey. The use of ?!!! or ??? may be viewed as anger or aggression.
- Flaming (i.e. deliberate rudeness, curse words, put-downs) will not be tolerated and will result in a -0- for the discussion. A good rule of thumb is: it you wouldn't say it to the person face-to-face, don't type it.
- Please don't type your message in all caps. This is considered SHOUTING.
- Think before typing or taking offense at what a classmate has written. This is where the use of emoticons may help. Emoticons are faces such as: ;-), ;(, :-@, or LOL (laughing out loud). These, however, do not count as sentences!

Science e-Project: 10%

You will be expected to participate in a Zooniverse project, which is a citizen scientist web portal. You will pick out a project from the provided list and provide follow-ups on your volunteering for your project throughout the semester via a website you create. As a final submission you will then present your project website, using Google Slides (or equivalent) to the discussion forum. Your website should be set up in a systematic manner. It will be posted in the discussion forum and reviewed by your classmates. Presentation will be important!

Guidelines rubric:

4=Quality, 3=acceptable, 2=Could Use Work, 1=Needs Additional Work

1. Shows knowledge of the Scientific Process
   4 pt.: Explains all elements (Title, Purpose, Hypothesis, Materials, Procedure, Results, Conclusions), shows understanding of conclusion.
   3pt.: Explains at least 6 elements, shows understanding.
   2 pt.: Explains most of the elements.
   1 pt.: Inadequate explanation of elements.

2. Shows use of the Scientific Process through the presentation.
   4 pt.: Presents steps of method clearly and completely with headings.
   3 pt.: Presents each step of method clearly.
   2 pt.: Has each step.
   1 pt.: Has some steps.

3. Shows enthusiasm and interest in the project.
   4 pt.: The presentation is interesting to read and meets my expectations of a college student.
   3 pt.: The presentation is interesting to read.
   2 pt.: Students tells about the project.
   1 pt.: Student shows little enthusiasm or interest in the project.
4. Knowledge about the project
   4 pt.: Student eagerly presents many details of the experimentation.
   3 pt.: Student shows understanding of the project.
   2 pt.: Student know what the project is, giving minimal explanation.
   1 pt.: Student shows minimal knowledge of the project.

5. Presents scientific data in a well-organized, visually appealing presentation
   4 pt.: Presentation shows data in clear tables, charts, or pictures with headings.
   3 pt.: Presentation is neat and attractive, limited table, chart or pictures.
   2 pt.: Presentation has headings, using information stated.
   1 pt.: Presentation has headings and limited information.

6. Shows written evidence of research, experimentation and analysis
   4 pt.: Presentation has all the elements present.
   3 pt.: Presentation has most elements present.
   2 pt.: Presentation has some elements present.
   1 pt.: Presentation of elements are minimal or nonexistent.

Bosque del Apache Wildlife Refuge, San Antonio, NM. Photo by V. Harder

UTEP Policies for Students

Informed Consent: Some individuals may choose to disclose personal information during class. Therefore, it is important that all classmates agree not to discuss or write about what others have discussed in class.

Disability Statement: Services for students with disabilities are provided through the Academic Support Center’s Disability Services Office. Some examples of the assistance provided are: audio materials for the blind or dyslexic, note takers, readers, campus guides, audio recorders, a quiet testing area, and undergraduate academic tutors. In order to qualify for these services, documentation must be provided by qualified professionals on an annual basis. Disability Services forms are available in the Academic Support Center.

Military Statement: If you are a military student with the potential of being called into military service and/or training during the course of the semester you are encouraged to contact the instructor regarding these matters.

Professionalism: Students are learning professional skills and are expected to engage in classroom discussions, complete reading assignments and turn in assignments in a timely fashion as befitting professional behavior.
**Scholarly Writing:** Use clear college level writing with correct spelling and grammar for all assignments. If you need help in writing, check with the UTEP Writing Center.

**Integrated Use of Technology:** Because this is an online course, I am making the assumption that you are comfortable utilizing a computer, and navigating various software programs like Microsoft Word, Powerpoint. If you have any questions about computer requirements see the Student Resources in Blackboard.

**Need Help?**

1. Post a question to the Discussion Board. There is no such thing as a dumb question.
2. Post a question as a Blackboard email to your instructor.
3. Click on the Help button in Blackboard.
4. If the Blackboard system goes down or you have other technical questions, contact the UTEP Help Desk

**Academic Integrity Policy and Procedures:** Each student shall observe standards of honesty and integrity in academic work completed at UTEP. Students may be penalized for violations of the Academic Integrity policy. Please refer to the Academic Integrity section in the current UTEP Catalog. (Clearly specify what you consider to be violations of academic honesty.)

**Caveats:** The schedule and procedures in this course are subject to change in the event of extenuating circumstances.

**Code of Civility:** In order to promote a positive, professional atmosphere among students, faculty and staff, the following Code of Civility has been developed:

- **Respect:** Treat all students, faculty, staff and property with respect and in a courteous and professional manner. This includes all communications, whether verbal or written. Let your actions reflect pride in yourself, your university, and your profession.
- **Kindness:** A kind word and gentle voice go a long way. Refrain from using profanity, insulting slang remarks, or making disparaging comments. Consider another person’s feelings. Be nice.
- **Truth:** Exhibit honesty and integrity in your dealings with fellow students, faculty and staff members. Don’t lie, don’t cheat, and don’t steal.
- **Responsibility:** Take responsibility for your actions. This includes gracefully accepting the consequences of your behavior.
- **Cooperation:** Exhibit a cooperative manner when dealing with students, faculty and staff so we may all work towards our common goals and mission.
- **Acceptance:** Accept differences in others, as they accept differences in you. This includes diversity in opinions, beliefs and ideas and everything else that makes us unique individuals.
- **Professionalism:** Always conduct yourself in a manner that will bring pride to your profession, to the University of Texas at El Paso, and, most importantly, to yourself.