



IS-351-01 W, Science Inquiry I

COURSE SYLLABUS

INSTRUCTOR INFORMATION

Instructor: Hilary Kakanis, M.S.

Office Location: *Online* → Zoom

Office Hours: *TBD: Class vote for best availability*

University Email Address: Hilary.Kakanis@tamuc.edu

Preferred Form of Communication: Email through D2L

Communication Response Time: 24-48 hours, weekdays

COURSE INFORMATION

- **Materials** – Textbooks, Readings, Supplementary Readings
- **Textbook(s) Required** Course-specific lab manual **IS 351** available only from the campus bookstore.
 - ISBN: 978-1-64565-153-6 3rd Edition
- Software Required: MS Office or Google Docs (with DocHub)
- Other Materials:
 - simple calculator
 - notebook
 - note taking materials
 - printer / printer access



Course Description

Science topics and themes are chosen to emphasize broad concepts highlighted in the Texas and National Science Standards. Topics will include conservation laws, systems in nature, the nature of scientific inquiry and presentation of scientific information. The course will be taught using an inquiry-based method when possible, modeling instructional techniques proven effective by current educational research. This course is designed for interdisciplinary education majors.

Science is an interesting and diverse subject that spans a broad range of topics, from biology to geology to astronomy. More than just a collection of facts, science provides a way of learning about and understanding the world. Science is what allows mankind to function in a productive manner. We will explore the question, “What is Science?” and help each individual grasp an understanding of his/her own teaching philosophy.

Scientific study leads to many technological advances. Science can be both fun and interesting to learn. In this course, the nature of science and the scientific method are introduced. Critical thinking is emphasized. Primarily physics and earth science related topics are covered. These topics include forces and motion, energy, waves, and earth and space science. This course models inquiry based teaching methods.

The syllabus/schedule are subject to change.

Topics Covered

Interactions and Energy Conservation

This module deals with energy in the context of different types of interactions, kinetic and potential energy, and conservation of energy. Throughout the course, students will explore energy concepts in various interactions, including contact interactions (pushes, pulls, and friction), heat interactions, and wave movement and forms. Giver/Receiver Energy diagrams are used to describe the transfer or transformation of energy. Conservation of energy is introduced early in the case of two objects interacting, and then expanded to account for more complex chains of interactions between multiple objects (including the surroundings). The potential energy in the context of elastic objects builds to introduce potential energy associated with non-contact forces: magnetism, static electricity, electromagnetism, and gravity. The concept of fields is used as a model for action at a distance and the associated potential energies.

Interactions and Forces

This module treats interactions, force, and motion for single forces, and then combinations of forces. Students will begin with the introduction of forces and their relationship with interactions and energy. The connection between force and motion is explored for short-duration forces, continuous forces, and backward forces; later the effects of mass and force strength are included. These are synthesized into Newton's second law. The unit ends with a treatment of the vertical motion of falling objects (ignoring air resistance).

Students examine force combinations, including balanced and unbalanced forces, exploring the net force concept. This includes a treatment of the horizontal motion of objects experiencing frictional forces, and the vertical motion of falling objects with air resistance; culminating with Newton's third law.

Interactions between Earth's Spheres

This module explores the interesting and multifaceted nature of Earth's systems and spheres and the energy transformations within them. We will begin with an overview of Earth's spheres and their interrelated facets and effect on ecology, and the recycling of energy throughout various Earth cycles, such as the rock, water, carbon, and nitrogen cycles. Then, we will describe forces and processes that change the surface of earth, making earth a "living planet".

Following, the focus will be shifted to changes in energy within earth's atmosphere, as we study the characteristics of weather patterns and causes, the driving force of wind, and climate zones across the globe, culminating in an overview of the study of climate change and global warming.

Interactions between Earth and Space

Much of weather is affected by Earth's position and orientation in space; in this module, we will study earth's relationship with the sun and its consequences, including the day/night cycle and the seasons. We will then turn our attention to other celestial bodies – such as the moon, where we will learn about its phases and the effect of its gravitational force on our oceans, causing the tides. From there we will explore further, learning about the Terrestrial and Jovian planets, the Asteroid and Kuiper Belts, the Oort Cloud, and beyond, learning about stars like our sun before turning our attention to the structure of galaxies and our findings about the universe itself - where it came from, where it's going, and how we are just one tiny piece of it, striving to learn as much about itself as possible.

Student Learning Outcomes

1. Students will be better prepared to achieve success in completing the TExES exam and teaching science in the EC-6 Classroom.
 - a. Students will understand the basic methodology of science through experimentation.
 - b. (From Standard VIII) Students will know and understand... **Physical Science**
 - i. 8.2k concepts of force and motion
 - ii. 8.3k concepts of heat, light, electricity and magnetism
 - iii. 8.4k conservation of energy and energy transformations
 - iv. 8.5k the relationship between force and motion
 - v. 8.7k energy and energy transformations
 - vi. 8.8k the conservation of energy
 - c. (From Standard X) Students will know and understand... **Earth and Space Science**
 - i. 10.1k properties of Earth materials
 - ii. 10.2k changes in Earth systems
 - iii. 10.3k characteristics of the sun, moon, and stars
 - iv. 10.4k the structure and function of Earth systems
 - v. 10.5k cycles in Earth systems
 - vi. 10.6k the role of energy in weather and climate
 - vii. 10.7k characteristics of the solar system
 - viii. 10.8k the history of Earth
 - d. (From Standard XI) Students will know and understand... **What Teachers Know**
 - i. 11.1k how systems and subsystems can be used as a conceptual framework to organize and unify the common themes of science and technology;
 - ii. 11.2k how patterns in observations and data which explain natural phenomena allow predictions to be made;
 - iii. 11.3k how the concepts and processes listed below provide a unifying framework across the science disciplines:
 1. systems, order, and organization
 2. evidence, models, and explanation;
 3. change, constancy, and measurements;
 4. evolution and equilibrium; and
 5. form and function;
 - iv. 11.4k properties and patterns of systems can be described in terms of space, time, energy, and matter;
 - v. 11.5k how change and constancy occur in systems (e.g., conservation laws, symmetry, stability, cyclic variation, rates of change);
 - vi. 11.6k the complementary nature of form and function in a given system; and
 - vii. 11.7k how models are used to represent the natural world and how to evaluate the strengths and limitations of a variety of scientific models (e.g., physical, conceptual, mathematical).
 - e. Students will prove content mastery through taking and passing exams, participating in class discussions, and planning an experiment or exploration for a course topic for their students.

2. Students will gain a better pedagogical understanding.
 - a. Students will identify and practice different teaching methods.
 - b. Students will identify different learning styles.
 - c. Students will be able to determine how teaching and learning styles complement or support material in various situations.
 - d. Students will better understand the NGSS/TEKS alignment and how that process applies to content delivery.
3. Students will assist the instructor through cooperative learning to provide interesting and practical scientific knowledge and skills for taking instruction into the classroom and everyday life.
 - a. Students will identify student-centered versus teacher-centered instructional methods.
 - b. Students will practice student-centered instruction.
 - c. Students will develop a plan for laboratory safety and classroom management.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

D2L will be used for the entirety of course parameters; it will be used to house notes, videos, assignments, quizzes, discussion forums, and exams. All grading will be done through D2L, and all assignments must be submitted digitally through the proper channels within the D2L shell - **I will not be accepting assignments via email.**

The following formats are approved for turning in assignments: **.pdf**, .doc, .docx, and .odt.

- If using google suite, please convert the document to one of those formats through their “file > download” menu.
- The following formats are not to be used and, if submitted, will not be graded: .pages, .jpb, and .png.
- Students should have a basic understanding and ability to manage fundamental computer skills such as MS Word, Excel, & PowerPoint (or similar)
 - Please note: any assignment given via pdf can be edited for free by downloading it into your google drive, opening the preview, and selecting “open with v DocHub” from the dropdown menu.
 - Once completed, go to ‘download/export’ and select ‘google drive’ and hit the blue button, and your edits will be saved and replace the original pdf file.
 - it will then be ready for downloading to the computer, and uploading to D2L.
 - I can provide a video walkthrough for this process upon request.

Instructional Methods

The instructional methods for this course will vary with the topic being explored, but due to the nature of online courses, will typically take the course of a video lecture with accompanying notes or questions in an assignment. Students will be required to access course lectures, online labs, and tutorial videos through internet access. Stable internet access will be a must for the successful completion of this course.

Labs/Activities

Grade Scale: Assignment, 1 pt each

Students will be working at home to complete (online) labs and activities throughout the semester. Regular online attendance is necessary to ensure understanding of the material. Online labs are a critical part of this course and cannot be made up if not turned in by posted due dates. For clarification purposes, there are NO make-up assignments.

The syllabus/schedule are subject to change.

Assignments

Grade Scale: Assignment, 1 pt each

Students will be answering questions or completing notes or thought experiments about the topic under study through assignments attached to the video content within each module. Assignments are used as formative assessments, and, as such, are taken as participation grades rather than graded objectively. Upon successful completion of an assignment, students will gain access to the assignment key, which they can then use to grade their own work objectively and learn what they missed, that they may go back and review the material for answers, else use the discussion threads, email, or office hours to better understand what they missed. This provides a timely and pointed method of gaining feedback for efforts.

While taken for participation points only, Assignments are mandatory, and must be completed to access the topic Quiz.

Quizzes

Grade Scale: Assignment, 10 pts each

When an assignment or lab is successfully submitted, a Quiz over the topic's material will open, ready to be completed within a week of becoming available. The quizzes are open notes, open assignments, and reflect vocabulary and skills used to complete the assignments for that week. They are a reflection of what can be expected on the Module's Exam.

Exams

Grade Scale: Exam, 10% of course grade each.

The Module Exam comes at the end of each module and tests mastery of skills and knowledge gained within the module, as based on the Standards of the topic. For each module, the exam will be posted automatically, but will only open for students upon completing the module's quizzes. Students will have a 4-day window to complete the exam. Exams have a 90-minute time limit, and once a student begins an exam, it must be completed in one sitting. Ensure that you have enough time to complete the exam prior to beginning

Discussion Posts

Grade Scale: Discussion Posts, 5 pts each

Each week students are required to participate in discussions with their classmates about the material for the topic. Posts may discuss the concept, themes, ideas for student exploration, ask questions, summarize key points, or review the instruction provided for clarity, usefulness, and whether the video could be used in an elementary school classroom or best remain for elementary teacher review purposes.

Expectations: At a minimum, students will need to post 2 original posts in two separate topics, and 3 responses to other classmates' posts in any topic every week. The goal is to keep up class discussion and be exposed to thoughts and ideas that may be beneficial to understanding or future endeavors in the classroom. *Note: One post counts as 100 words or more on topic. Posts with fewer words or posts not addressing the week's class topics will not be considered for grading. Of course, the discussion should be allowed to flow naturally, and shorter posts will naturally occur, including one-word posts of the type "Yes!" and "I agree!" or "No!". This is fine, and indeed necessary - it is just that the grading will be based upon posts of 100 words or more.*

Reading Reflections

Grade Scale: Assignment, 10 pts each

Reading reflections are also part of this course. Some weeks, you will be given experiments to analyze where you will identify the variables of the experiment, the goal of the experiment, the form in which the results are best illustrated, and align it to the Science TEKS for a specific grade level. Some reading reflections are an essay format and should consist of 150 words or more, explaining the required objectives for each assignment; others will be in the form of a quiz about the variables of example experiments.

Netiquette reminder

A reminder that netiquette should be observed at all times: please make sure you visit and understand the following resources: <http://www.albion.com/netiquette/>
<http://www2.nau.edu/d-elearn/support/tutorials/discrubricts/netiquette.php>

Student Responsibilities or Tips for Success in the Course

Pre-service teachers need to incorporate technology into their learning so that they can take this knowledge and understanding into their classrooms as they facilitate learning. Throughout this course, students will be using tools and technology to complete laboratory procedures. Students will need computer and printer access or a pdf editor (check out docthub) to complete various assignments. All written work should be typed, including citations as needed. Emailing your assignments instead of uploading them to the class D2L Portal is not acceptable. Students may expect a large amount of printing through the duration of this course if uncomfortable with working through pdf editors.

This course is web-based and students will be participating through the D2L portal. Students must have access to a scanner or smartphone that takes quality images (.pdf only, no .jpg or .png or etc) to submit homework and assignments. I like/use Google Drive's [+] → [Scan] function to automatically be able to access the file from my computer, but most phone cameras have scanning capabilities built right in and ready to email.

- Students should have access to Zoom to participate in office hours. It can work through a web browser; I will email a link ahead of each office hour.
- Students will need to use the current Flash enabled browser. For PC users, the recommended browser is Google Chrome or Mozilla Firefox, and for Mac users; the most current version of Mozilla Firefox is recommended.
- Students will need regular access to a computer with broadband internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required-courses are video intensive
 - Video display capable of high-color 16-bit display (1024 x 768) or higher resolution
- Students must have:
 - A sound card, usually integrated into your computer
 - Speakers/headphones
 - For courses utilizing video-conferencing tools, and/or online proctoring solutions, a webcam and microphone are required.
 - For office hours, you may make use of the type-chat function if you do not have a webcam or microphone; I will be watching the chat.
- Students must have antivirus software installed, up to date, and enabled.
- Both versions of JAVA (32 & 64 bit) must be installed and up to date on your computer. Java 7, update 51 is required to support the learning management system. The most current version of Java can be downloaded at: <https://www.java.com/en/download/manual.jsp>
- Run a browser check through the Pearson LearningStudio Technical Requirements website.
Browser Check:
https://help.blackboard.com/Learn/Student/Ultra/Getting_Started/Browser_Support/Browser_Checker
Running the browser check will ensure your internet browser is supported.
 - Popups are allowed.
 - JavaScript is enabled.
 - Cookies are enabled.
- For additional information about system requirements, please see: System Requirements for Brightspace D2L: <https://secure.ecollege.com/ETAMU/index.learn?action=technical>
- Students will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - Adobe Reader: <https://get.adobe.com/reader/>
 - Adobe Flash Player (version 17 or later): <https://get.adobe.com/flashplayer/>
 - Adobe Shockwave Player: <https://get.adobe.com/shockwave/>
 - Apple Quicktime: <http://www.apple.com/quicktime/download/>

The syllabus/schedule are subject to change.

- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software.
 - Please note: Open Office is free.
 - Please additionally note: Using google suite software and downloading as an office product to upload as an office product works just fine if you are more comfortable in the Google suite.
 - If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.
- Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. Copying and pasting answers straight from the internet to complete assignments is not acceptable, however.

COURSE GRADING

The following scale will be used for determining final course grades:		Grade Scale	Tentative Exam Dates
Daily assignments/labs/quizzes	40 %	100% > A > 90%	1) Week 6
Discussion Posts	15 %	89% > B > 80%	2) Week 9
Exams	45 %	79% > C > 70%	3) Week 12
		69% > D > 60%	4) Week 16
		60% > F	

The syllabus and/or schedule are subject to change.

Plagiarism or cheating will not be tolerated for any reason and a violation will provide the individual(s) involved with a failing grade and a referral to the dean's office for further disciplinary action.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

The syllabus/schedule are subject to change.

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all coursework in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement

Students are welcome to come to virtual office hours. For a specific time outside of the scheduled office hours please feel welcome to send an email to schedule an appointment.

All written communication needs to be through email at this address: Hilary.Kakanis@tamuc.edu

Students will be expected to regularly check their email provided to/by the University through eCollege/myLeo as this address is provided to the professor. In **ALL emails**, students are required to include the following information in the subject line: **the course name, your name, and a (very) brief statement/inquiry.**

e.g. Subject: IS 352, Your Name, lesson #3 question

This will allow all inquiries to be answered as soon as possible. If a response is not received within 2 weekdays then assume there was a problem with the email and please follow up through other contact options.

Course Specific Procedures/Policies

Course Specific Policies

Violation of any class policies will be reflected on the student's final grade for the course.

1. **Be professional.** You are completing your degree and preparing for the classroom as the facilitator of instruction. Your attitude should reflect your professionalism which should include the remaining class policies. The syllabus/schedule is subject to change.
2. **Be here** (virtually). Although this is a web-based class, regular login will be required to keep up with the week's assignments. Note: while this is an online course, it is still worth 3 credit hours. As such, expect to spend 3 hours per week on the course material, just as you would in your brick-and-mortar classes, with time set aside for assignments you may find difficult, similar to how homework is treated in in-person classes. Do not expect this course to be a breeze simply because it is online!
3. **Students will have all work completed no later than the assigned due date/time.** Late work is not accepted so do not be late with uploading your homework or discussion posts. As a teacher, you will be expected to turn in grades on time as well as meet other deadlines; again, be professional. Technology issues are not considered a "good reason" for seeking extensions for late assignments. All due dates are given in advance; take them seriously as LATE WORK IS NOT ACCEPTED.
4. **Be courteous.** Follow proper netiquette when interacting with the instructor and classmates in discussion boards.

Course Specific Procedures

1. Students are required to take all exams and exams must be completed by their due date. Exams are 40% of your grade; 10% each.
2. Students will be responsible for their learning and participate in all class activities with a positive attitude. Professionalism will be practiced in this course.
3. Students will have all work completed when due. Late work is not accepted so do not wait until the last minute to complete/upload assignments.
4. Students could be printing a large amount of material through the semester for regular assignments/homework. Students will need computer and printer access. Students will be responsible for their own printing needs. Emailing material to the professor (or TA) to turn in assignments is not an option.
5. Students are responsible for ensuring all work is submitted in an approved format. The following formats are approved for turning in assignments: **.pdf**, **.doc**, **.docx**, and **.odt**. The following formats are **not** to be used, and **if submitted, will not be graded:** **.pages**, **.jpg**, and **.png**. Links to a document on Google Pages are also not accepted. Please take the requirements for assignment submission seriously, as there are no exceptions to this policy. D2L does not support some of these formats and will not open them for grading, and others are resource-intensive if they must be printed out for any reason.

6. Students are welcome to contact me via email or make an appointment for a Zoom meeting if email cannot fit the need for assistance. If you are struggling, seek assistance early. Students have the option to earn an A for this class, however extra credit is not usually offered. Students have the ability to earn an A or the right to earn an F if they decide to not complete the work. I generally do not offer or approve drops/incompletes for poor effort and I don't drop a student for excessive absences.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.ETAMU.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

ETAMU Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.ETAMU.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.ETAMU.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.ETAMU.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.ETAMU.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact

Office of Student Disability Resources and Services

East Texas A&M University

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](http://www.ETAMU.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)

<http://www.ETAMU.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

A&M-Commerce Supports Students' Mental Health

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.ETAMU.edu/counsel

AI use policy [Draft 2, May 25, 2023]

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

COURSE OUTLINE / CALENDAR

The syllabus and/or schedule are subject to change.

Science

- 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 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.

Know Your Standards:

https://tea.texas.gov/sites/default/files/EC_6_Science_Final%283%29_o.pdf

https://tea.texas.gov/sites/default/files/4-8sci_o.pdf

In science, many of the concepts work in conjunction with others. The weekly outline is general and not specific. (list outline is for a long semester)

Module, Week		Topic
O	1	Syllabus, experiments, pedagogy, & expectations, introductions
I	2-5	Energy Test 1
II	6-8	Forces Test 2
III	9-12	Space Science Test 3
IV	13-15	Earth Science Final (non-cumulative)

Dates are approximate and may change according to the progression of course content.