



IS 351.41E, 83073, Science Inquiry I

Course Syllabus: Fall 2021

Class meets: Tuesdays, 7:00 - 9:30 PM

Texas A&M Commerce Mesquite - Room 217
3819 Towne Crossing Blvd, Mesquite, TX 75150

INSTRUCTOR INFORMATION

Instructor: Holly Harrison

Office Hours: By appointment

University Email Address: Holly.Harrison@tamuc.edu

Preferred Form of Communication: Email

Communication Response: within 24 hours, Monday through Friday

COURSE INFORMATION

Materials - Textbooks, Readings, Supplementary Readings

- **Textbook(s) Required:** Course specific Lab Manual **IS 351B** available only from the campus bookstore (**ISBN: 978-1-64565-040-9**)
- **Software Required:** MS Office (or equal)
- **Other Materials:**
 - Simple calculator
 - Printer or printer access
 - Note taking materials



The required lab packet is specific for this course and is available only at the campus bookstore. Please verify that you are getting the one designated **IS 351B (ISBN: 978-1-64565-040-9)** at the time of your purchase. A calculator is recommended for each student; a simple inexpensive 5-function calculator will work. In addition to the text & class packet, students will need something for note taking, and computer/printer access. Make printing arrangements before you need them.

COURSE DESCRIPTION

Science topics and themes are chosen to emphasize broad concepts highlighted in the Texas and National Science Standards. Topics include conservation laws, systems in nature, the nature of scientific inquiry and presentation of scientific information. The course will be taught by an inquiry-based method,

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

modeling instructional techniques proved effective by current educational research. This course is designed for interdisciplinary education majors.

Science is an interesting and diverse topic; learning and teaching can be enjoyable as well as educational. 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 philosophy of teaching.

Students will participate in a cooperative learning environment through hands-on experiments and lectures. Pedagogy, methods and techniques, critical thinking, data analysis, proper handling of equipment, and content will be explored in this course.

TOPICS COVERED

Module Interactions: Forces & Energy

Module Interactions deal with energy in the context of different types of interactions, kinetic and potential energy, conservation of energy, and fields. Students explore energy concepts in various interactions, including contact interactions (pushes, pulls, and friction), heat interactions, and electric circuits. 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.

Potential energy will be explored in the context of elastic objects, which then 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.

The focus on interactions and forces treats interactions, force, and motion for single forces; then with combinations of forces. The unit begins by introducing 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 treatment of the vertical motion of falling objects (ignoring air resistance).

Students will examine combinations of forces, including balanced and unbalanced forces, arriving at the idea of net force. The unit includes a treatment of the horizontal motion of objects experiencing frictional forces, and the vertical motion of falling objects with air resistance. The unit culminates with Newton's third law.

Astronomy

The astronomy unit will focus on the planets and characteristics of the planets in our solar system. The material covered in this unit will originate from content delivered in class and will not require additional printed text or material.

STUDENT LEARNING OUTCOMES

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

-
1. Students will be better prepared to achieve success completing the TExES exam.
 - a. Students will understand the basic methodology of science through experimentation.
 - b. Students will prove content mastery by taking and passing a minimum of 2 of the 3 exams.
 - c. Students will understand the meaning, application, and concepts of force and motion: types of forces, Newton's laws of motion, conservation of energy, and historical contributors such as Aristotle, Galileo, and Newton.

 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 compliment 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 science 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 grades and as a venue/repository of review material and PowerPoints. All work to be graded will be printed by the student and turned in to the professor or teaching assistant. Students should have basic understanding and ability to manage fundamental computer skills such as MS Word, Excel, & PowerPoint (or similar).

Instructional Methods

This class will meet in MPLX from 7:00PM to 9:30PM on Tuesdays. The instructional methods for this course will vary with the topic being explored. Students will be attentive through any lecture, providing the instructor/presenter their full attention. Questions are welcomed and encouraged during lecture, however students will not engage in "personal discussions" thus disrupting class.

Students will be working in groups to complete labs throughout the semester. It is imperative that students do NOT miss class as their group will not have each member's contribution. Any missed classes will not be made up. For clarification purposes, there are **NO make-up labs**. This includes any lab section of a test.

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

Emailing, turning in work through D2L or any other digital means will not be accepted as work completed. ONLY printed work will be accepted as complete and graded, no exceptions made. Students may not email work to the professor, teaching assistant or peers to be printed on their behalf, each person is responsible for printing their work and turning in on time as assigned.

Student Responsibilities or Tips for Success in the Course

This class requires regular attendance as much of the content is delivered in a hands-on format that will build from one lesson to the next. If you miss a class you may miss the skills needed for the next and future lessons. Missing even one class can cause a significant gap in your learning and understanding. The best thing you can do to be successful in this class is to not miss class.

GRADING

The following scale will be used for determining final course grades:

Daily assignments/labs	35 %
Tests (10% each midterm, 15% final)	35 %
Attendance	5 %
Notebook	25 %

90% < A < 100%

80% < B < 89%

70% < C < 79%

60% < D < 69%

F < 60%

The syllabus and/or schedule are subject to change. **NO MAKE-UP LABS.**

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

ASSESSMENTS

Daily labs - There will be no make-up labs. If you are absent on a day we take a grade for a lab, you will receive a grade of zero; there is no way to make up for missed work.

Lectures - There will be a few lectures and some mini-lectures. If you miss notes, I recommend asking a couple of people for a copy of their notes so that you have a good coverage of the material missed. You will be responsible for all material at the time of the test.

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

Exams - If you know you are going to miss an exam, please make arrangements in advance to take it early. If you miss an exam it must be scheduled and completed before the graded exams are returned to the class, generally the next class day. For example, if the test is given on Tuesday, they should be returned to the class on the following class time, which will be the following Tuesday, allowing the week days in between for the makeup exam to be completed. It is your responsibility to schedule a time to make up the exam before the next class.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce 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>

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 course work 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 TAMUC 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:

community.brightspace.com/support/s/contactsupport

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

Interaction with Instructor Statement

Students are welcome to visit during office hours. For a specific time outside of the scheduled office hours please feel welcome to email to schedule an appointment, virtual or in person.

All written communication needs to be through email at this address: Holly.Harrison@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 351, Ms. Harrison, 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 AND UNIVERSITY PROCEDURES/POLICIES

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.
2. **Be here.** Absences will result in lowering your overall grade and counts as 15% of your grade for this course. If you know in advance that you are going to miss class, please inform me in writing, email is preferred. This class meets once weekly, missing even one class results in missing a large amount of material. Excessive absences may result in the student being dropped from class with a failing grade.
3. **Be on time.** Tardiness will be a direct reflection of your professional attitude. This class meets on Tuesday from 7:00PM to 9:30PM. This is a very short amount of time and must be utilized effectively. It is important that you arrive at class on time. Tardiness will result in a low participation grade for this course and the result will be reflected in the student's final grade. Tardiness is a bad habit, impolite, disruptive, and unprofessional. As a teacher, you will be expected to turn in grades on time as well as meeting other deadlines; again be professional. Absences are not considered a good reason for turning in late assignments. All due dates are given in advance; take them seriously as late work is not accepted.
4. **Be courteous.** Cell phones will be turned off; failure to comply will result in the student being excused from class. I will give you my undivided attention and I expect the same of each student.

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

Course Specific Procedures

1. Students will be required to take all exams and must prove content mastery by completing at least two tests with a grade of 70 or better to pass this course. It may be possible for students to complete all coursework with a high enough average to pass the overall class without completing any of the tests with a grade above 70. If fewer than 2 exams are not completed with a score above 70, the student will receive a failing grade for the course. Combined exams total 35% of the final grade.
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 homework completed/printed upon entering class. Late work is not accepted so do not be late to class. Students will not attempt to work on any material for another class.
4. Students will contribute to a grade specific notebook assignment which is strategically formatted to aid the student in planning lessons, locating appropriate supplementary curriculum/experiments, and becoming competent in the use and navigation of the NGSS & TEKS. Additional instructions will be provided. This assignment is 20% of the course grade.
5. Students will 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 print for you is not an option. All assignments will be graded in print format, turning in assignments via email will assure work is not counted late (provided it is emailed before the start of class) however you are still responsible for printing and turning in a print copy at the next class.
6. Students will participate and contribute equally in group activities; this includes cleaning the work area after class/labs. All collaborative assignments will have an individual grade for each student dependent upon their individual contribution, collaboration, content, and professionalism. Failure to comply will be reflected in the non-compliant student's grade and will not be a detriment to the remaining group members.
7. Students are welcome to visit during office hours, or make an appointment if the posted hours do not fit the need. If you are struggling, seek assistance early. Students have the option to earn an A for this class, however extra credit is not 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.

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

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.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

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

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#). <http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

Academic Integrity

Students at Texas A&M University-Commerce 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](#)

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

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

Texas A&M University-Commerce

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](#)

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**

Nondiscrimination Notice

Texas A&M University-Commerce 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.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

The syllabus and/or schedule are subject to change.

DOMAIN IV – SCIENCE

Competency 024	Safe and Proper Laboratory Processes
Competency 025	Scientific Inquiry
Competency 027	Unifying concepts and processes in science
Competency 028	Theory and Practice of Science Teaching
Competency 029	Assessments in Science Learning
Competency 030 - 034	Physical Science
Competency 035 - 037	Life Science
Competency 038 - 041	Earth & Space Science

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

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

The *syllabus/schedule* are subject to change. **NO MAKE-UP LABS.**