



**IS351 Inquiry Science
COURSE SYLLABUS SPRING 2024**

Instructor: Melinda Ludwig

Office Location: No office, but I will be available in Room 205 for 1 hour (4:00-5:00 p.m.) on Tuesdays

Class Time: 5:00 – 7:30 p.m. Tuesdays

Office Hours: N/A

Office Phone: 903-875-7618 (Navarro College Partnership Office)

Office Fax: N/A

University Email Address: Melinda.Ludwig@tamuc.edu

COURSE INFORMATION

Materials – Textbooks, Supplementary Readings:

**Texts: Reviewing Science 2nd Ed. Cohen/Deutsch/Sorrentino (2009)
Project WILD Manual (NEW EDITION – 2018)**

**** (For Navarro Partnership students, both books are available in the Navarro College bookstore. A used copy of *Reviewing Science* is o.k., but you will need a new copy (2018) of the Project WILD manual.**

Additional Supplies: Notebook or paper for notes, lab reports; pencils; map colors.

Course Description:

Science Inquiry is a course with minimal lecture. The bulk of the course consists of a variety of hands-on, inquiry science activities that target science instructional strategies in grades Pre-K through 8.

Student Outcomes:

- 1. Through participation in the inquiry science activities, students will gain experience and knowledge that will help them prepare for the science section of the Generalist exam.**
- 2. Students will gain practical and interesting science knowledge and skills appropriate for science instruction in grades Pre-K through 8.**
- 3. Students will increase their own science literacy by participating in the inquiry science activities.**
- 4. Students will gain experience in a variety of laboratory techniques, which are used as part of teaching science as inquiry.**

COURSE REQUIREMENTS

“This course consists of a selection of hands-on, inquiry science activities from a variety of disciplines/sources and is designed to enhance your skills in teaching science to elementary and middle school students. Each week you will participate with members of your group in completing one, or more, inquiry science activities.”

Grading

Grading Scale: (90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; Below 60% = F)

ALL GRADES WILL HAVE EQUAL VALUE, BASED ON 100 POINTS.

Lab Reports/other classwork/homework/projects

Three Major Tests

FINAL EXAM

TECHNOLOGY REQUIREMENTS

N/A

ACCESS AND NAVIGATION

N/A

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement: You may contact me about class-related matters at the e-mail address listed on Page 1. I will respond in a timely manner. Check your University e-mail frequently for class-related messages.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures:

Academic Honesty Policy:

Texas A&M University – Commerce does not tolerate **plagiarism** and other forms of **academic dishonesty**. Conduct that violates accepted standards of academic honesty is defined as academic dishonesty. “Academic dishonesty” includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one’s own), **cheating on exams or other course assignments**, collusion (the unauthorized collaboration with others in preparing course assignments), and abuse (destruction, defacing, or removal) of resource material.

Disciplinary action for these offenses may include any combination of the following:

1. Point deduction on an assignment.
2. Failure for an assignment.
3. A grade of zero for an assignment.
4. Failure for the course.
5. Referral to the Academic Integrity Committee or department head for further action.
6. Referral to the Dean of the College of Education and Human Services, Business and Technology, Arts and Sciences, or Graduate School as appropriate.
7. Referral to the University Discipline Committee.
8. Communication of the student’s behavior to the Teacher Certification Office and/or the Dean of the College of Education as constituting a reason to bar the student from entering into or continuing in a teacher certification program. Procedures A 13.04, 13.12, 13.31. and 13.32.

AI Use in Course (Draft 2, May 25, 2023)

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

Any such 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.R0.3 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

Examination Policy:

Major Tests and the FINAL EXAM will have the same format:

1. Items that refer to reading assignments in the textbook and handouts.
2. Items that refer specifically to hands-on laboratory activities in the form of actual hands-on activities or analysis of results of activities, or both.
3. Items that address Critical Thinking Skills as they relate to understanding the analysis of hands-on activities and how they relate to each other or to real world situations.
4. Point value for each item will be in parentheses at the end of the section or item. Total value of the Test or EXAM is 100 points.

Attendance Policy:

It is the prerogative of the instructor to drop students from courses in which they have accrued excessive absences (three or more). However, a student wishing to drop the course should do so. Failure to do so may result in a failing grade.

You are expected to attend each class meeting and to arrive on time.

There are no make-ups for Lab Activities that you miss, and a zero will be recorded. You are still responsible for the content and experimental results of any Lab Activity that you miss. NOTE: If you miss a deadline for an out-of-class assignment (homework, citizen science projects, etc.), you may turn in those assignments when you return to class.

If you miss a major test, you must check with the instructor regarding a possible make-up test. Only an absence due to EXTRAORDINARY CIRCUMSTANCES will be considered in allowing a make-up test and only after proper documentation of the reason for the absence has been provided. BEST ADVICE: Show up on time, prepared to work, for every class.

**NOTE: THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY ANY COURSE-SPECIFIC POLICY/PROCEDURE IF EXTRAORDINARY CIRCUMSTANCES EXIST, AND THE INSTRUCTOR WILL DETERMINE THE DEFINITION OF "extraordinary".

University Specific Procedures:

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 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148 Email: Rebecca.Tuerk@tamuc.edu

Internship Requirements:

All students applying for internship must attend a mandatory meeting the semester prior to the internship beginning. If you are interning in the fall, the meeting will be in January. If you are interning in the spring, the meeting will be in August.

All students must complete an application for internship. Students must meet the following requirements:

- a) Reading THEA score of 250 or Accuplacer Reading Score of 88 or COMPASS reading score of 90 or ACT score of 23 or SAT Verbal score of 550.
- b) Math THEA of 230, ACT score of 19 or SAT Math Score of 500, grade of C or better in College Algebra.
- c) Writing THEA of 220, grade of C or better in College English
- d) 2.75 GPA overall
- e) 2.5 GPA Interdisciplinary Studies Courses
- f) 2.5 GPA Specialization Courses
- g) 2.5 GPA Professional Development Courses
- h) Completion of all of the following courses: ELED 200, 300, RDG 350, 360,370, PSY 300, 310, SPED 346, IS351 OR 352, MATH 350
- i) Students may not lack more than 9 hours on entering internship. The following may be lacking: MusArtThe 305, one of the IS courses, Math 351, 1 specialization course. All other courses must be complete.
- j) Failure to meet the above requirements will result in not entering internship on time.
- k) Students will not be permitted to take the generalist exam, if they are missing content courses.

Graduation – All students should meet with their advisor 1 semester prior to graduation to ensure that all requirements are met.

Completion of all requirements for degree (check degree evaluation for errors)

Successful completion of JLE (see advisor)

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.

You are expected to conduct yourself as a responsible adult. You are expected to show respect to the instructor and to your classmates. Behavior that deviates from this model and that disrupts the educational process can result in your removal from the class. You must follow health safety guidelines currently in place, due to the COVID-19 pandemic.

Nondiscrimination Notice

A&M-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

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

(<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC46.035, the open carrying of handguns is prohibited on all A&M – Commerce campuses. Report violations to the University Police Department at 903-886-5658 or 9-1-1.

Please be aware of the new campus concealed carry policy issued by Navarro College effective August 1, 2017. **You are responsible for reading and knowing this information.** Please see the link below:

<http://navarrocollege.edu/boardpolicies/section-gj-1/>

COURSE OUTLINE / CALENDAR

DISCLAIMER: The instructor reserves the right to make changes to the schedule of the class. Any alterations will be announced by the instructor in the class or via email. Students who do not attend class or check their email assume full responsibility for missing changes to the course.

Date	Activities	Assignments for next class session	Student Outcomes Addressed
T 1/16	Intro to Course Video: Educating the Educators Activity: Wildlife is Everywhere (K-2) Activity: My Kingdom for a Shelter (3-5)	Read pp. 123-137 in Reviewing Science. Complete Review Questions, Part 1, on pp 130-132. Due next class. Read Handouts.	1,2,3,4
T 1/23	Review Force, Motion, Friction, Gravity, Inertia, and Laws of Motion. LAB: Ride, Newton, Ride! (K-2) LAB: Sheep in a Jeep (3-6)	Read <u>again</u> pp. 133-137, and pp. 43-46 in Reviewing Science. Read Handouts.	1,2,3,4

T 1/30	Review Laws of Motion. LAB: Float Your Boat (3-6) LAB: Secrets of Flight (4-6) Go over instructions for GLOBE at Night observation of Orion. (1/31 – 2/9)	Read pp. 27-36 in Reviewing Science. Complete Review Questions, Part 1, on pp 37-39. Due next class. Read Handouts. Study for Test #1	1,2,3,4
T 2/6	Review Periodic Table and Changes in Matter LAB: Science Mysteries (K-3) LAB: Chemistry of a Candle (3-5) Take Test #1	Read Handouts on Physical and Chemical Changes	1,2,3,4
T 2/13	Discuss physical and chemical changes, and the Law of Conservation of Matter. LAB: Observing Phase Changes LAB: Observing Physical and Chemical Changes (3-6)	Read pp. 331-336 and pp. 342-350 in Reviewing Science. Complete Review Questions, Part 1, on pp. 339-341 and pp. 352-354. Due next class.	1,2,3,4
T 2/20	.Discuss Solar Energy, Electromagnetic Spectrum, Earth's Orbit, and the Seasons. Activity: Happy Birthday! (K-2) LAB: Investigating Solar Energy and the Visible Spectrum, plus UV and IR. (6-8) LAB: Feel the Heat. (K-2)	Read pp. 26-35 and pp. 195-199 in Project WILD guide.	1,2,3,4
T 2/27	Discuss survival of animals in the wild, based on Adaptations, Carrying Capacity, and Limiting Factors. Activity: How Many Bears...? (6-8) Activity: What Bear Goes Where? (K-5)	Read pp. 295-304 and pp. 309-315 in Reviewing Science. Complete Review Questions, Part 1, on pp. 304-308. Due next class. Read Handouts. Study for Test #2.	1,2,3,4
T 3/5	Discuss atmospheric composition, weather instruments and what they measure. Make simple weather instruments to use in recording weather data. Take Test #2	Use weather instruments you made, plus others that are supplied to record weather data for 5 consecutive days during Spring Break. Completed Data Sheet due on 3/19. Read handouts.	1,2,3,4
T 3/11 – 3/15	SPRING BREAK	Remember to complete the weather data sheet. Also, be sure to read the handouts.	1,2,3,4
T 3/19	Discuss the important role of trees in the environment. Go outside and examine characteristics of several species of trees. LAB: Analyzing a Tree Cookie (3-8) LAB: The Peppermint Beetle (K-6)	Read pp. 229-235 in Reviewing Science. Complete Review Questions, Part 1, on pp. 236-240. Due next class. Read pp. 82-93 in Project WILD guide and handout on energy transfer in living things.	1,2,3,4

T 3/26	Discuss Photosynthesis, Energy Transfer in a Food Chain, and Trophic Levels in an ecosystem. Activity: Show Me the Energy! (K-2) Activity: Which Niche? (4-8)	Read pp. 36-41 and pp. 42-50 in Project WILD.	1,2,3,4
T 4/2	Discuss value of knowledge of animal tracks, effect of Limiting Factors on wildlife populations. Activity: Tracks! (5-8) LAB: Oh Deer! (4-8) Discuss Total Solar Eclipse on 4/8.	Read pp. 18-21 in Project Wild. Study for Test #3.	1,2,3,4
T 4/9	Discuss the life cycle and migration behavior of the Monarch Butterfly. Various activities relating to discussion topics. (5-8) Begin Moon Journal Project. Take Test #3.	Read pp. 2-6 and pp. and handout on camouflage from Project WILD and Growing Up WILD.	1,2,3,4
T 4/1	Discuss characteristics of various species of Arthropods and the value of camouflage in the survival of living things. LAB: Insect Inspection (2-4) LAB: Hiding in Plain Sight (3-5)	Read pp. 243-252 in Reviewing Science. Complete Review Questions, Part 1, on pp. 253-255. Due next class. Read handout on properties of minerals, rocks, and the Rock Cycle.	1,2,3,4
T 4/23	Review properties of minerals and rocks. Go over the Rock Cycle. LAB: Identifying Selected Minerals and Rocks (physical properties) (5-8)	Read pp. 264-268 in Reviewing Science. Complete Review Questions, Part 1, on pp. 269-270. Due next class.	1,2,3,4
T 4/30	Discuss maps and their uses. Focus on uses of Topographic Maps and how they are different from other maps. Activity: Working with Topographic Maps (6-8) LAB: Creating a Topographic Map from a 3-D Landform model.	PREPARE FOR FINAL EXAM Also, turn in your Moon Journal.	N/A
T 5/7	FINAL EXAM (Turn in your Moon Journal.)	N/A	N/A

CHILDREN'S LITERATURE BOOKS REFERENCED:

Germes Make Me Sick by Melvin Burger

Sheep in a Jeep by Nancy Shaw

How People Learned to Fly by Fran Hodgkins

Captain Kidd's Experiments with Sinking and Floating by Mark Weakland

The Moon Book by Gail Gibbons

Newton and Me by Lynne Mayer

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Rocks: Hard, Soft, Smooth, and Rough by Natalie M. Rosinsky

Weather Forecasting by Gail Gibbons

Jump into Science: Sun by Steve Tomecek

The Sun: Our Nearest Star by Franklyn M. Branley

Solving the Puzzle Under the Sea by Robert Burleigh

IMPORTANT ASTRONOMICAL DATES for SPRING, 2024

February 4	Cross Quarter Day
March 19	Vernal Equinox
May 5	Cross Quarter Day

A Cross Quarter Day is a day halfway between a Solstice and an Equinox or halfway between an Equinox and a Solstice.