



**IS352 Inquiry Science
COURSE SYLLABUS: SPRING 2024**

Instructor: Melinda Ludwig

Office Location: No office, but I will be available in Room 205 from 4:00-5:00 p.m. on Thursdays.

Office Hours: N/A

Class Time: 5:00-7:30 Thursdays

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

Office Fax: N/A

University Email Address: Melinda.Ludwig@tamuc.edu

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings:

Texts: REVIEWING SCIENCE – 2nd Edition (Cohen, Deutsch, Sorrentino – 2009)

Aquatic WILD Manual (Blue Cover with pictures)

**** (For Navarro Partnership students, both books are available in the Navarro College bookstore. A used copy of Reviewing Science is o.k., but you need to get the current copy (2013) of Aquatic WILD.)**

Additional materials: Notebook or paper for notes or lab reports, pencils, map colors, rigid metric ruler, scissors.

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 instruction 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 in preparation 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 day you will participate in completing a selection of 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.

1. Lab Reports/other classwork/homework/projects.
2. Three major tests.
3. FINAL EXAM (Comprehensive).

TECHNOLOGY REQUIREMENTS

N/A

ACCESS AND NAVIGATION

N/A

COMMUNICATION AND SUPPORT

You may contact me about class-related matters at the e-mail address listed on Page 1. I will reply 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 student's behavior to the Teacher Certification Office and/or 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 use of such software must be documented. Any undocumented uses 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 textbooks 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 the hands-on activities and how they relate to each other or to real world situations.
4. The Final Exam will consist of content and activities that incorporate 1-3 above.
5. 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 for the course.

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 MUST DISCUSS A POSSIBLE MAKE-UP FOR THIS ABSENCE WITH THE INSTRUCTOR. YOU ARE STILL RESPONSIBLE FOR CONTENT OF TESTS OR LAB ACTIVITIES THAT YOU MISS. NOTE: IF YOU MISS A DEADLINE FOR AN OUT-OF-CLASS ASSIGNMENT (homework, citizen science project, etc.), YOU MAY TURN IN THAT ASSIGNMENT WHEN YOU RETURN TO CLASS.

IF YOU MISS A MAJOR TEST, YOU MUST CONSULT THE INSTRUCTOR REGARDING A POSSIBLE MAKE-UP. IF YOU FAIL TO ASK ABOUT A MAKE-UP TEST, OR DON'T SHOW UP IF ONE IS SCHEDULED, A ZERO WILL BE RECORDED AS YOUR TEST GRADE.

BEST ADVICE: SHOW UP ON TIME 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.

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/policiesProcedures/StandardsStatements/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 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 class, on ecollege, or via email. Students who do not attend class, log into ecollege, or check their email assume full responsibility for missing changes to the course.

Date(s)	Activities	Assignments for next class session	Student Outcomes Addressed
Th 1/11	Intro to course. Video clip on WILD curriculum. Discuss Moon Journal Project and begin recording data Activity: Aqua Words (2-5) Activity: Aqua Charades (K-2)	Read pp. 61-67, 87-89, and 93-96 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 67-69, 90-91, 97-98. (all answers on a single page). Due next class.	1,2,3,4

Th 1/18	<p>Review Forms of Energy Explore some properties of Light and Sound.</p> <p>LABS: Mirror, Mirror and Silly Spoons (K-2) Rotation LAB: Sounds All Around (K-2)</p>	<p>Read pp. 123-136 in Reviewing Science. Complete Review Questions, Part 1, on pp. 137-140. Due next class. Read hand out on Roller Coasters. Use link in hand out to watch video clip of Apollo 15 astronauts on the Moon.</p>	1,2,3,4
Th 1/25	<p>Review Force, Motion, Gravity, Acceleration, and Newton's Laws of Motion.</p> <p>LAB: Roller Coaster! (K-4) LAB: Alka-Seltzer Rocket (3-6)</p>	<p>Read pp. 27-36 in Reviewing Science. Complete Review Questions, Part 1, on pp. 37-39. Due next class. Study for TEST #1.</p>	1,2,3,4
Th 2/1	<p>Discuss the Periodic Table and its uses; discuss Physical Properties of Matter.</p> <p>LAB: Physical Properties of Water (6-8) Take TEST #1</p>	<p>Read pp. 51-57 in Reviewing Science. Complete Review Questions, Part 1, on pp. 57-59. Due next class. Read handout on DNA.</p>	1,2,3,4
Th 2/8	<p>Review Physical and Chemical Changes in Matter.</p> <p>LAB: Acids, Bases and pH (6-8) LAB: Isolating DNA Turn in Moon Journal.</p>	<p>Read pp. 175-179 in Aquatic WILD book. Read hand out on water quality. Dress for outside.</p>	1,2,3,4
Th 2/15	<p>Discuss Riparian Zones., freshwater ecosystems, and water quality indicators. Visit campus pond to observe a riparian zone. Collect a sample of pond water. Return to class and use Pond Water Tour Kit to test sample for levels of four water quality indicators.</p> <p>LAB: Water Quality Testing (5-8) Then observe the simulated riparian zone and identify the role of each of the inhabitants in this ecosystem.</p>	<p>Read pp. 206-211 in Aquatic WILD book. Study for TEST #2</p>	1,2,3,4
T 2/22	<p>Continue discussion of water quality indicators' link to kinds of water pollution and various effects on wildlife.</p> <p>LAB: What's in the Water? (6-8) Take TEST #2.</p>	<p>Read pp. 189-195 and pp. 246-250 in Aquatic WILD book. Read hand out on coral reefs. Watch short video "The Majestic Plastic Bag" on YouTube.</p>	1,2,3,4
Th 2/29	<p>Discuss plastics pollution in the world's oceans and its effects on living things.</p> <p>LAB: Plastic Voyages (6-8) LAB: Plastics in the Water Column (6-8) LAB: Over in the Ocean (K-2)</p>	<p>Read pp. 284-288 in Reviewing Science. Complete Review Questions, Part 1, on pp. 290-293. Due next class.</p>	1,2,3,4

Th 3/7	Video clips on plate tectonics and sea floor spreading. Discuss Theory of Continental Drift. LAB: Solving the Puzzle Under the Sea (4-8)	Read pp. 257-260 in Reviewing Science. Complete Review Questions, Parts 1 and 2 , on pp. 261-263. Due next class.	1,2,3,4
3/11-3/15	SPRING BREAK	Be sure to read the assignment above and do the homework.	1,2,3,4
Th 3/21	Review fossilization, fossil types, methods of analyzing specimens. Activity: Plaster cast of a fossil specimen using a mold. (4-8) LAB: Observation and Analysis of real fossil specimens from areas of Texas. (4-8) Look at fossil display and model displays to identify claws, teeth, dinosaurs, and non-dinosaurs.	Read pp. 229-235 in Reviewing Science. Complete Review Questions, Part 1, on pp. 236-240. Due next class. Read handouts on Owls and Owl Pellets.	1,2,3,4
Th 3/28	Video clip on Owl Pellets. Discuss predator/prey roles, food chains and food webs. LAB: Dissection of a Barn Owl Pellet (4-8) Go over instructions for GLOBE at Night observation of Leo. (3/31 – 4/9)	Read handouts on Darwin and Natural Selection. Read handout on Bird Beaks. Study for TEST #3.	1,2,3,4
Th 4/4	Review Evolutionary Theory and Natural Selection. Video Clip: How Does Evolution Work? LAB: Unbeatable Beaks (K-2) Discuss Total Solar Eclipse on 4/8. Take TEST #3.	Use materials provided to make a "Brain Hat". Notice the areas of the brain that control each of the five senses. Bring your brain hat to class on 4/11.	1,2,3,4
Th 4/11	Discuss the five senses and their importance to survival. LAB: Investigating the Five Senses (6-8)	Read pp. 98-102 in Aquatic WILD book. You will need a pencil and your map colors.	1,2,3,4
Th 4/18	Discuss specific body characteristics that increase chances for survival of fish species. Activity: Fashion a Fish (3-5)	Practice sorting and classifying living things, using a Venn Diagram and a Dichotomous Key.	1,2,3,4
Th 4/25	Work with additional Dichotomous Keys to classify an assortment of different plant and animal groups.	Read handouts on the night sky, stars, and light pollution.	1,2,3,4

Th 5/2	Video: Star Stuff – A Short Biography of Carl Sagan. Use the Sunspotter to look for sunspots. LAB: Star Light, Star Bright. Discuss the problem of Light Pollution and keeping dark skies.	Prepare for Final Exam	1,2,3,4
Th 5/9	FINAL EXAM (Comprehensive)	-----	-----

***Picture-Perfect Science Lesson Activities**

CHILDREN’S LITERATURE BOOKS REFERENCED:

The Sun is my Favorite Star by F. Asch

Beaks by Sneed B. Collard, III

Hello, Red Fox by Eric Carle

Butternut Hollow Pond by Brian J. Heinz

Barn Owl by Sally Tagholm

Boy, Were We Wrong About Dinosaurs! By Kathleen Kudlinski

Near One Cattail by Anthony D. Fredericks

Earth’s Landforms and Bodies of Water by Bobbie Kalman

Solving the Puzzle Under the Sea: Marie Tharp Maps the Ocean Floor by Robert Burleigh

How Mountains Are Made by Kathleen Weidner Zoehfeld

One Plastic Bag by Miranda Paul

Rain Fish by Lois Ehlert

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 that is halfway between a Solstice and an Equinox or halfway between an Equinox and a Solstice.