



**IS352 Inquiry Science
COURSE SYLLABUS: FALL, 2022**

Instructor: Melinda Ludwig

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

Office Hours: N/A

Class Time: 5:00 – 7:30 p.m. Thursday

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)**

**** (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 a new copy 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.

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.

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 be entirely hands-on 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. Late arrival may result in a 5 point deduction from your class participation grade.

THERE ARE NO MAKE-UPS FOR LAB ACTIVITIES THAT YOU MISS. A ZERO WILL BE RECORDED FOR ANY LAB ACTIVITY MISSED BECAUSE OF ABSENCE, REGARDLESS OF REASON. 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. ONLY AN ABSENCE DUE TO EXTRAORDINARY CIRCUMSTANCES WILL BE CONSIDERED IN ALLOWING A MAKE-UP TEST. PROPER DOCUMENTATION FOR OF THE REASON FOR THE ABSENCE MUST BE PROVIDED.
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 9/1 | Intro to course. Introduce Aquatic WILD curriculum and Picture Perfect Science Lessons curriculum. Video clip on WILD curriculum. Activity: Are You Me? (K-3) Activity: Hiding in Plain Sight (K-2) | Read pp. 61-67, 87-89, and 93-96 in Reviewing Science. Complete Review Questions, Part 1, on pp. 67-69, 87-89, and 97-98. Due next class. | 1,2,3,4 |

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| Th 9/8 | <p>Begin Moon Journal. Review Forms of Energy. Explore some properties of light and sound. LAB: 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 handout on Roller Coasters.</p> | 1,2,3,4 |
| Th 9/15 | <p>Review Force, Motion, Gravity, Acceleration, and Newton's Laws of Motion. 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 9/22 | <p>Review Matter, the Periodic Table, and Physical Properties. 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 Michael Faraday's Candle.</p> | 1,2,3,4 |
| Th 9/29 | <p>Review Physical and Chemical Changes in Matter. LAB: Chemistry of a Candle.(3-5) LAB: Acids, Bases, and pH (6-8)</p> | <p>Read pp. 175-177 in Aquatic WILD. Read handout on water quality. Dress for outside.</p> | 1,2,3,4 |
| Th 10/6 | <p>Discuss Riparian Zones, freshwater ecosystems, and water quality indicators. Visit the campus pond to observe plants and animals; collect a water sample and return to class. Use Pond Water Tour Kit to test for levels of four water quality indicators in a sample from the campus pond. LAB: Test for 4 water quality indicators with Lamotte Pond Water Tour Kit. Turn in Moon Journal.</p> | <p>Read pp. 222-234 in Reviewing Science. Complete Review Questions, Part 1, on pp. 227-228 and pp. 236-240. Read handouts on Barn Owls and Owl Pellet dissection. Study for Test #2</p> | 1,2,3,4 |
| Th 10/13 | <p>Discuss predator/prey roles in an ecosystem, food chains/food webs, and trophic levels in a food chain. LAB: Owl Pellet Dissection (4-8) Take Test #2.</p> | <p>Read handout on coral reefs. Read handout on the Flower Garden Banks.</p> | 1,2,3,4 |
| Th 10/20 | <p>Discuss saltwater ecosystems, specifically coral reefs and their inhabitants. Activity: Ocean Animal Sorting (K-2) Worksheet and Read-Aloud on <u>Over in the Ocean</u> (K-2) Visit the Flower Garden Banks website to learn about the reefs in the Gulf of Mexico.</p> | <p>Homework: Read <u>One Plastic Bag</u>. Read pp. 189-195 and pp. 246-250 in Aquatic WILD.</p> | 1,2,3,4 |
| Th 10/27 | <p>Plastics Pollution. LAB: Plastic Voyages (6-8) LAB: Plastics in the Water Column (6-8) Activity: Turtle Hurdles (6-8)</p> | <p>Read pp. 284-288. Complete Review Questions, Part 1, on pp. 290-293. Due next class.</p> | 1,2,3,4 |

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| Th 11/3 | Plate Tectonics, Sea Floor Spreading. LAB: Solving the Puzzle Under the Sea (3-5) Google Earth Field Trip: Earth's Mountain Ranges. (3-6). | Read handouts on The Senses. Study for Test #3. | 1,2,3,4 |
| Th 11/10 | Discuss the Five Senses: Sight, Hearing, Smell, Taste, and Touch. LAB: Investigating the Five Senses (6-8) Take Test #3. | 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 |
| Th 11/17 | Discuss GLOBE at Night Project. Discuss fossil types, fossilization process, methods of analysis of 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 displays and model displays to identify claws, teeth, dinosaurs, and non-dinosaurs. | Complete your observation of the constellation Pegasus for the GLOBE at Night project. Upload your data to the website. Make a copy of the reply that you get. Turn in the copy of the reply on 12/1. | 1,2,3,4 |
| Th 11/24 | Thanksgiving (no class) | Read handout about stars and their characteristics. | ----- |
| Th 12/1 | Turn in the copy of the GLOBE reply. Discuss stars and their characteristics. LAB: Star Light, Star Bright! (3-5) Read-Aloud: Star Stuff Activity: Constellations | Read pp.98-102 in Aquatic WILD. Bring map colors. | 1,2,3,4 |
| Th 12/8 | Discuss body characteristics that increase chances for survival of fish species. Activity: Fashion a Fish. (3-5) | Prepare for FINAL | 1,2,3,4 |
| Th 12/15 | FINAL EXAM | ----- | ----- |

***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: Autumn Equinox September 22
Cross Quarter Day November 7
Winter Solstice December 21

