



**IS352 Inquiry Science  
COURSE SYLLABUS: SPRING 2021**

**Instructor: Melinda Ludwig**

**Office Location: No office, but I will be available from 4-5:00 in Room 205 Thurs.**

**Office Hours: 4:00 – 5:00 p.m. Th    Class Time: 5:00 – 7:30 p.m. Thursday**

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

**Office Fax: N/A**

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<b>COURSE INFORMATION</b>
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**Materials – Textbooks, Readings, Supplementary Readings:**

**Texts: REVIEWING SCIENCE – 2<sup>nd</sup> Edition (Cohen, Deutsch, Sorrentino – 2009)**

**Aquatic WILD Manual (Blue Cover)**

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

Class Participation.....	10%
(Begin with 100 points; <b>10 points</b> deducted for each absence, regardless of reason.)	
Lab Reports/Homework (Average of all grades).....	40%
(Lab Reports will be primarily group reports; homework is individual.)	
Three Major Exams (each one worth 10%).....	30%
FINAL EXAM (COMPREHENSIVE).....	20%

**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 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/>

<b>COURSE OUTLINE / CALENDAR</b>
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**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
1/14	Intro to Course Intro to Aquatic WILD program: Video Clip on using WILD Curriculum. One more COVID-19 activity: Review of the Human Immune System mRNA and the Pfizer/Moderna vaccines – How Do They Work?	Read Ch. 2, pp. 61-100 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 73-74, pp. 84-85, and pp. 90-91. Due next class.	1,2,3,4
1/21	Discuss Forms of Energy. Rotation Lab: Exploring Forms of Energy.	Read Ch. 2, pp. 93-96 <u>again</u> . Complete Review Questions, Part 1, on pp. 97-98. Due next class.	1,2,3,4

1/28	<p>Focus on Light Energy and Electromagnetic Spectrum  LAB: Mirror, Mirror, Silly Spoons*(K-2)  Sunshine on My Shoulders*(K-6)  Activity: Visible Light vs. UV Light</p>	<p>Read pp. 192-193 in <i>Reviewing Science</i>. Complete Review Questions, Part 1, on pp. 193-195. Due next class. Also, read handout on Charles Darwin.  <b>Study for Test #1</b></p>	1,2,3,4
2/4	<p>Discuss Evolutionary Theory, Mutations, and Natural Selection.  Video Clip-How Does Evolution Work?  LAB-Bird Beaks &amp; Natural Selection  LAB-Beaks Are For The Birds*(K-2)</p> <p><b>Take Test #1 after Labs are finished.</b></p>	<p>Read pp. 152-159 and pp. 186-189 in <i>Reviewing Science</i>. Complete Review Questions, Part 1, on pp. 160-161 and p. 190.</p>	1,2,3,4
2/11	<p>Video Clip-DNA Structure &amp; Function  Review Basic Genetics &amp; introduce Founder Mutations and Inherited Diseases.  Activity: Human Genetics Survey (individual)  LAB: Isolating Strawberry DNA  <b>Begin Moon Journal</b></p>	<p>Read Handouts on the Brain, Nervous System, and the Senses.</p>	1,2,3,4
2/18	<p>Review the structure of the Human Brain and the general functions of its parts.  Concentrate on the Senses and how they help us interpret our world.  LAB-Exploring the Senses: Sight, Hearing, Smell, Taste, and Touch.</p>	<p>Read pp. 221-236 in <i>Reviewing Science</i>. Complete Review Questions, Part 1, on pp. 227-228 and pp. 236-240. Due next class. Read pp. 146-149 in your Project WILD Manual and the Handouts on Barn Owls.</p>	1,2,3,4
2/25	<p>Video Clip-Collecting and Analyzing Owl Pellets.  Discuss Trophic Levels, Food Chains, and Food Webs and their importance in Ecosystems.  LAB-Owl Pellet Dissection (Barn Owl)</p>	<p>Read pp. 175-179 and pp. 206-210 in Aquatic WILD Manual. Read handout on Water Quality.</p>	1,2,3,4
3/4	<p>Discuss Riparian Zones and Water Quality indicators. Use the Pond Water Tour Kit to test four chemical indicators of water quality. Complete separate activity: What's in the Water. <b>We may go to the campus pond, so dress for outside.</b></p>	<p>Read pp. 98-100 in Aquatic WILD Manual. This is your Out of Class assignment for next week.</p>	1,2,3,4
3/8-3/12	<p>Navarro College Spring Break  Out of Class assignment: Fashion a Fish drawing incorporating 4 specific adaptations for survival. Due 3/18. No exceptions.</p>	<p>Read pp. 257-260 in <i>Reviewing Science</i>. Complete Review Questions, <b>Parts 1 &amp; 2</b>, on pp. 261-263. Due next class.</p>	1,2,3,4

3/18	Discuss, fossilization, fossil types, methods of interpretation, and analysis of specimens. Activity-Make a plaster cast of a fossil specimen, using a mold. LAB-Observations and Analysis of real fossil specimens from areas of Texas. <b>Turn in Fashion a Fish drawing AND your completed Moon Journal.</b>	Read pp. 189-195 in Aquatic WILD Manual. Read Handouts on Plastics Pollution.  <b>Study for Test #2.</b>	1,2,3,4
3/25	Discuss the impact of plastics pollution on the environment and aquatic wildlife. Video Clip on Plastics Pollution in Texas. LAB-Plastic Voyages LAB-Plastics in the Water Column (from the Monterey Bay Aquarium in San Francisco). Read-Aloud Activity – One Plastic Bag <b>Take Test #2 after labs are finished.</b>	Read handout on coral reefs and their ecology.	1,2,3,4
4/1	Discuss importance of Coral Reefs and the animal community they support; consider threats to coral reefs caused by global warming, aquatic pollutants, and invasive species. LAB-Over In the Ocean*(K-2) <b>Begin GLOBE at Night: Leo</b>	Review handouts.	1,2,3,4
4/8	Continue activities on Coral Reefs. Concentrate on Coral Reefs in the Gulf of Mexico: The Flower Garden Banks National Marine Sanctuary. Explore this coral reef with online and hands-on activities.	Read pp. 75-78 and pp. 246-250 in Aquatic WILD Manual.	1,2,3,4
4/15	Video Clip on Salt Marsh Ecosystems. Activity: Marsh Munchers Activity: Turtle Hurdles <b>Turn in GLOBE at Night sheet.</b>	Read pp. 284-288 in <i>Reviewing Science</i> .	1,2,3,4
4/22	Discuss how the ocean floor was surveyed and what surprises scientists learned. Examine the Heezen-Tharp Map of the Ocean Floor Activities: Ocean Floor Discoveries*(3-5) <b>Take Test # 3 after Activities are finished.</b>	<b>STUDY FOR FINAL EXAM (Use whatever methods work for you)</b>	1,2,3,4
4/29	<b>TAKE FINAL EXAM(Comprehensive)</b>	----	----

**\*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 2021**

**February 3 – Cross Quarter Day**

**March 20 – Vernal Equinox**

**May 5 – Cross Quarter Day**