



IS351 Inquiry Science COURSE SYLLABUS: SPRING 2022

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 to 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. Both books are also available on Amazon. A used copy of *Reviewing Science* is o.k., but you need the NEW [2018] edition of Project WILD.)**

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.

Class Participation – a single grade awarded at the end of the semester, based on attendance and participation.

(Begin with 100 points; 10 points deducted for each absence, regardless of reason.)

Lab Reports/other classwork/homework/projects

Three Major Tests

FINAL EXAM (Covers the entire course content and may be Lab-based.)

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.

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.

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 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, and a zero will be recorded. An exception to this policy is if the absence is because have tested positive, or are in quarantine for COVID-19. 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 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 1/18	Intro to Course. Intro to Project WILD and Picture Perfect Science Curricula. Activity: Animal Charades (K-2) Activity: A Birthday is No Ordinary Day. (K-2)	Read pp. 43-46 and pp. 123-137 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 47-48, 130-132, and 137-140. Write ONLY the number of your answer choice for each item. Due next class.	1,2,3,4
T 1/25	Review Force, Motion, Friction, Gravity, Inertia, and Buoyancy. LAB: Ride, Newton, Ride (K-2) LAB: Sheep in a Jeep (3-4) LAB: Float Your Boat (3-5)	Read, again, pp. 133-136 in <i>Reviewing Science</i> to review Newton's Laws of Motion. Read handouts.	1,2,3,4
T 2/1	Review Laws of Motion and how they apply to lab activities. LAB: Factors Affecting the Motion of a Pendulum (7-8) LAB: Secrets of Flight (3-6) BEGIN MOON JOURNAL	Read pp. 27-36 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 57-59. Due next class.	1,2,3,4

T 2/8	Video clip from "COSMOS" Review the Periodic Table LAB: Phases of Matter/Phase Changes (6-8) LAB: Science Mysteries (K-2)	Read pp. 51-57 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 57-59. Due next class. Study for Test #1.	1,2,3,4
T 2/15	Review Physical & Chemical Changes. LAB: Observing Physical & Chemical Changes (3-6) Take Test #1 after Lab.	Read pp. 342-350 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 352-354. Due next class.	1,2,3,4
T 2/22	Discuss Solar Energy and the Electromagnetic Spectrum. Investigate Sundials and their role in science. LAB: Investigating Solar Energy (5-8) LAB: Feel the Heat (K-2) Activity: Make a Sundial Watch.	Read pp. 366-374 in Project WILD manual.	1,2,3,4
T 3/1	Video Clip "The Night's Watch" Activity: Lights Out! Discuss the issue of Light Pollution, its effects on people and animals. Video/Read-Aloud Activity: Star Stuff Weather permitting, go outside and compare the appearance of the sky in a relatively dark spot and a campus parking lot. Compare the appearance of the constellation "Orion" TURN IN MOON JOURNAL..	Read pp. 26-35 and pp. 361-365 in Project WILD manual.	1,2,3,4
T 3/8	Discuss factors that affect the survival of animals in a population and biomagnification of pesticides in food chains/webs. Activity: How Many Bears...?(6-8) Activity: A Dire Diet (6-8)	Read pp. 243-253 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 269-270. Due next class. Study for Test #2	1,2,3,4
3/14 – 3/18	SPRING BREAK	-----	-----
T 3/22	Discuss Minerals, Rocks, and the Rock Cycle. LAB: Observe and Identify Selected Minerals and Rocks. (5-8) Take Test #2 after Lab.	Read pp. 264-267 in <i>Reviewing Science</i> . Complete Review Questions, Part 1, on pp. 269-270. Due next class.	1,2,3,4
T 3/29	Discuss maps and their uses. Focus on Topographic Maps. LAB: Working with Topo Maps. LAB: Creating a Topo Map. (6-8)	Read pp. 295-304 and pp. 309-316 in <i>Reviewing Science</i> .	1.2.3.4

<p>T 4/5</p>	<p>Discuss atmospheric composition and its role in weather. Identify types of weather instruments and what they measure. LAB: Making Simple Weather Instruments (6-8) LAB: Observe and record atmospheric and weather data on campus. (6-8)</p>	<p>Use the weather instruments created in class, plus others that are provided to keep a record of weather data for <u>5 consecutive days</u>, beginning on 4/6 and ending on 4/10. Turn in on 4/12. Read pp. 36-41 and pp. 42-60 in Project WILD manual.</p>	<p>1,2,3,4</p>
<p>T 4/12</p>	<p>Turn in Weather Data Chart. Discuss value of knowledge of animal tracks and the effect of limiting factors on animal populations. Activity: Make a plaster cast of an animal track, using a silicon mold. Activity: Tracks!(6-8) Activity: Oh Deer!(5-8)</p>	<p>Read handouts on photosynthesis and energy and how they are related to living things. Read pp. xv-xviii at the beginning of the Project WILD manual and p. 548 in the Appendices at the end of the book. Study for Test #3.</p>	<p>1,2,3,4</p>
<p>T 4/19</p>	<p>Discuss the relationship between energy from the sun, photosynthesis, and the food we eat. Go outside and select a plant to observe and record observations. (Next week you will visit this plant again and record any changes.) Activity: Show Me the Energy! (4-7) Activity: Field Study Fun (4-7) (Activities from Growing Up WILD manual.) Take Test #3 after Activities</p>	<p>Read pp. 111-116 in Project WILD manual and separate Handouts.</p>	<p>1,2,3,4</p>
<p>T 4/26</p>	<p>Watch video clip from "Wings of Life" Worksheet: What is Pollination? Read Aloud Activity: "The Flowers Are Calling" and "What If There Were No Bees?" (K-2) LAB: Look at a Flower:What Do You See? (K-2) Observe models of life cycle stages of a Monarch Butterfly and a Honey Bee.</p>	<p>Read Handouts about Trash, other types of Waste, Landfills, and the Environment.</p>	<p>1,2,3,4</p>
<p>T 5/3</p>	<p>How Can We Cut Down on Trash and Waste? Activity: "Less is More" from Growing Up WILD manual,</p>	<p>Use whatever methods are most helpful to you to prepare for next week's FINAL EXAM</p>	<p>1,2,3,4</p>

T 5/10	FINAL EXAM (Comprehensive)	N/A	N/A
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CHILDREN'S LITERATURE BOOKS REFERENCED:

- Germs 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*
- 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 2022

- Cross Quarter Day – February 3**
- Vernal Equinox – March 20**
- Cross Quarter Day – May 5**

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