



**IS352 Science Inquiry
COURSE SYLLABUS: SPRING 2014**

Instructor: Melinda Ludwig

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See alternate e-mail address in Communication and Support section, page 2.

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings:

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

Additional materials: pencils, map colors, rigid metric ruler, scissors, calculator.

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 TExES 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 cooperative learning 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 with members of your group 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; 10 points 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

Interaction with Instructor Statement:

You may contact me via e-mail (LudwMlud@aol.com) concerning anything related to the course in which you are enrolled. I will respond to your e-mail 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

There will be three major exams. Format of each test will include objective items, short answer items, and essay items that address higher level thinking skills.

Tests will consist of two parts:

- 1) **A laboratory-based part with items that focus on the lab activities completed since the last test. This part will be completed by the group. Any printed resource can be used for assistance with this part. (40 points)**
- 2) **A general content part with items that focus on material from the texts, additional reading assignments, videos, and any other material used or discussed in class. This part is completed by each individual student without the use of printed or electronic resources. (60 points)**

The total number of points per test is 100.

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, REGARDLESS OF THE REASON. 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. YOU SHOULD CHECK WITH GROUP MEMBERS ABOUT CONTENT AND DATA COLLECTED.

IF YOU MISS A MAJOR EXAM AND HAVE A DOCUMENTED, LEGITIMATE REASON, YOU MUST CONSULT THE INSTRUCTOR TO AGREE ON A DATE AND TIME TO MAKE UP THE EXAM. THE INSTRUCTOR WILL DECIDE IF YOUR REASON IS LEGITIMATE. ALL MAKE-UP EXAMS ARE IN ESSAY FORMAT.

BEST ADVICE: SHOW UP ON TIME!

Additional Requirements:

1. All work submitted for grading must be done in pencil. Any drawings/diagrams that involve color must be done with map pencils. No pens or markers. Up to 5 points will be deducted from the grade if ink/marker is used.
2. All numerical answers must include the unit. The answer will be marked wrong, if there is no unit.
3. Any straight lines used in a lab report must be drawn with a rigid ruler. Up to 5 points will be deducted from the grade if no ruler is used for straight lines.
4. No food allowed in the lab classroom. Drinks in cups with lids or drinks in bottles are allowed.
5. **You should dress as if you were in your own classroom at school. Extremes in dress are not consistent with the professional atmosphere in a public/private school. Remember that you are not only your students' teacher, you are also their role model.**
6. **TURN OFF ALL ELECTRONIC COMMUNICATION DEVICES. NO TEXTING. YOU MAY BE ASKED TO LEAVE THE CLASS FOR THE DURATION OF THE SESSION, IF YOU IGNORE THIS REQUIREMENT. YOU WILL NOT RECEIVE CREDIT FOR ANY ASSIGNMENT(S) THAT YOU MISS.**
7. Do not use "texting language" to provide a written answer to a question or to explain observations or processes. A response written in "texting language" will be judged incorrect, and points will be removed.
8. **You may not bring your children to class. There are liability and safety issues that must be respected.**

****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 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamu-commerce.edu

[Student Disability Resources & Services](#)

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) 2.5 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.

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
1/16	Begin Rice Experiment Introduction to Aquatic WILD Program “Walk Through the Guide” Activity – Aqua Words, pp. 29-30 Activity – Are You Me?, pp. 2-3 Activity - Blue Ribbon Niche, pp. 52-55	Read pp. 61-67 and pp. 93-96 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 67-69 and 97-98. Due at beginning of next class.	1,2,3,4

1/23	<p>Check Rice Experiment #1 Investigating Light: LAB – Mirror, Mirror* LAB – Sunshine on My Shoulders* LAB – Locating a Mirror Image</p>	<p>Read pp. 153-159 and pp. 186-189 in <u>Reviewing Science</u>. Complete Review Questions, Part 1, on pp. 160-161 and p. 190. Due at beginning of next class <u>STUDY FOR TEST #1</u></p>	1,2,3,4
1/30	<p>Check Rice Experiment #2 Video Clip: DNA Structure/Function Brief Discussion – Basics of Genetics and Founder Mutations LAB – Isolate DNA from a Strawberry and Human Genetics Survey LAB – Lactose Intolerance Take TEST #1 after Lab Reports are turned in. BEGIN MOON JOURNAL</p>	<p>Read pp. 192-193 in <u>Reviewing Science</u>. Complete Review Questions, Part 1, on pp. 193-194. Due at beginning of next class.</p>	1,2,3,4
2/6	<p>Check Rice Experiment #3 Discuss Evolutionary Theory and Natural Selection. Video: How Does Evolution Work? LAB – Bird Beaks and Natural Selection and Beaks are for the Birds* LAB – Mrs. Potato Head Genetics</p>	<p>Finish Rice Experiment booklet. Read pp. 34-37, pp. 128-131, and pp. 172-175 in Aquatic WILD manual. *</p>	1,2,3,4
2/13	<p>Check Rice Experiment #4 Video clip on Salt Marshes and Estuaries. Activity – Marsh Munchers Video clip on Sea Turtles Activity – Plastic Jellyfish Activity – Turtle Hurdles Discuss Bird Count Project</p>	<p>Read Handouts on the Nervous System and the Senses. Go to www.birdsource.org/GBBC for out of class assignment.</p>	1,2,3,4
2/20	<p>Turn in Rice Experiment booklet. Discuss human nervous system. Class Activity – Circle of Nerves LAB – Exploring the Senses 1. Are You a Supertaster? 2. The Nose Knows 3. a-MAZE-ing Memories 4. Tunnel of Light 5. Color Match/Retinal Fatigue 6. Sound Baggies 7. Animal Ears Discuss 1st GLOBE at Night observation project.</p>	<p>Read pp. 118-120 and pp. 140-143 in Aquatic WILD manual. Read Handout on Water Quality. <u>STUDY FOR TEST #2</u> Note: We will go to the campus pond to investigate and gather data on a Riparian Zone and to do water testing on a sample of the pond water. <u>Dress for outside; wear long pants and close toe shoes.</u> Go to www.globeatnight.org for out of class assignment.</p>	1,2,3,4

2/27	Discuss Riparian Zones and Water Quality. Walk to the campus pond. Investigate and describe the area. Collect a sample of the pond water and test the water for pH, Nitrogen, Ammonia, and Dissolved Oxygen, using the Pond Water Tour Kit. Return to class to finish the activities. Take TEST #2 after Lab Reports are turned in. TURN IN MOON JOURNAL.	Read Handout "A Hair and a Fungus". Read Handout on Barn Owls. Read pp. 221 – 236 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 227-228 and pp. 236-240. Due at beginning of next class.	1,2,3,4
3/6	Set up Fungus Experiment. Video clip on collecting and analyzing owl pellets. LAB – Owl Pellet Dissection and Analysis LAB – Mystery Pellets*	Read Handout "A Hair and a Fungus" <u>again</u> . Read pp. 49-51 and pp. 66-68 in Aquatic WILD manual.	1,2,3,4
3/10-14	Spring Break	---	---
3/20	Check Fungus Experiment and complete this activity. Activity: Micro-Odyssey Activity: Pond Succession	Read pp. 257-260 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 261-262. Due at beginning of next class.	1,2,3,4
3/27	Discuss Fossils and Radioactive Dating of rocks and fossils. Activity – Making a plaster cast of a fossil. LAB – Observations and analysis of Fossil Specimens.	Read pp. 257-260 in <u>Reviewing Science</u> . This time, complete Review Questions, <u>Part II</u> , on pp. 262-263. Due at beginning of next class. STUDY FOR TEST #3.	1,2,3,4
4/3	Review Radioactive Dating. Activity – Modeling a Geologic Cross Section. LAB – Dating the Past LAB – Mysteries of the Past* Take TEST #3 when Lab Reports are turned in.	Read pp. 273-277 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 278-279. Due next class.	1,2,3,4
4/10	Discuss Weathering, Erosion. LAB – Stream Table Investigations	Read pp. 295-304 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 304-308. Due next class.	1,2,3,4
4/17	Discuss Weather and Climate LAB – Weather Watchers* 1. Crazy About Clouds 2. Weather Forecasting 3. My Weather Forecast	Read Ch. 2, pp. 60-100 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 67-69; pp. 73-74; pp. 84-85; pp. 90-91 and pp. 97-98. Due next class.	1,2,3,4

4/24	Discuss Forms of Energy LAB – Investigating Energy **2nd GLOBE at Night observation assignment.	Read pp. 133-137 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, pp. 137-140. Due at beginning of next class.	1,2,3,4
5/1	Review Newton’s Laws of Motion LAB – Roller Coasters!*	STUDY FOR FINAL EXAM	
5/8	FINAL EXAM (COMPREHENSIVE)	N/A	N/A

*Activities from Picture Perfect Science Lessons.

CHILDREN’S LITERATURE BOOKS REFERENCED:

Roller Coaster by Marla Frazee

Roller Coaster! Motion and Acceleration by Paul Mason

I See Myself by Vicki Cobb

Sunshine on My Shoulder by John Denver

DNA is Here to Stay by Dr. Fran Balkwill

Beaks by Sneed B. Collard, III

Hello, Red Fox by Eric Carle

Butternut Hollow Pond by Brian J. Heinz

Who Goes There? By Jennifer Ericsson

Boy, Were We Wrong About Dinosaurs! By Kathleen Kudlinski

Weather Forecasting by Gail Gibbons