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**IS351 Science Inquiry
COURSE SYLLABUS: SPRING 2016**

Instructor: Melinda Ludwig

Office Location: N/A

Office Hours: 3:00-4:00 p.m. T/Th

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

COURSE INFORMATION

Materials – Textbooks, Supplementary Readings:

Texts: Reviewing Science Cohen/Deutsch/Sorrentino (2009)
Project WILD Manual

Additional Supplies: Notebook or paper for notes, lab reports; 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 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 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 the inquiry method.

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)

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; homework is individual)	
Three Major Exams (10% each).....	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 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 will be in two parts and will be done **after all lab work has been turned in for that class period. The point value for each part also applies to the Final Exam.**

- 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 student, working alone, without the use of printed or electronic resources. (60 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 meeting and to arrive on time. Each 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 LAB ACTIVITIES THAT YOU MISS. YOU SHOULD CHECK WITH GROUP MEMBERS ABOUT CONTENT AND DATA COLLECTED. NOTE: IF YOU MISS A DEADLINE FOR AN OUT-OF-CLASS ASSIGNMENT (homework, citizen science projects, etc.), YOU MAY TURN IN THAT ASSIGNMENT WHEN YOU RETURN TO CLASS.

IF YOU MISS A MAJOR TEST, YOU MUST CONSULT WITH THE INSTRUCTOR REGARDING A POSSIBLE MAKE-UP. ALL MAKE-UP TESTS WILL BE ENTIRELY ESSAY IN FORMAT. 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 FOR EVERY CLASS.

Additional Requirements:

1. All work submitted for grading must be done in pencil and in original printed or cursive handwriting. 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. Any spills must be cleaned up immediately.
 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. **ELECTRONIC DEVICES must be turned off during class.** The following exceptions apply:
 - a) You may use the calculator function, if the lab activity requires calculations.
 - b) You may use the timer function, if the lab activity requires timing.
 - c) You may use the light function, if the lab activity requires a source of illumination and a light source is not already provided.
- NOTE: You MAY NOT use your electronic device to take photos/videos of class activities to post on a social media website. There are potential copyright and liability issues in such actions.**
7. Do not use "texting language" to provide a written answer to a question or to explain observations or processes. A response written as a "text" will be judged incorrect and will not receive credit.
 8. **You may not bring your children to class. There are safety and liability 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) 2.75 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.

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.

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, on ecollege, or via email. Students who do not attend class, log onto 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
1/19	Introduction to Course Review of Cooperative Learning Video Clip – Inquiry in Science LAB – Review of Measurement	Read pp. 43-46 and pp. 123-140 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 130-132 and pp. 137-140. Write only the number of each answer choice. Due next class.	1,2,4
1/26	Discuss Force, Motion, Inertia, Friction, Density and Buoyancy LAB – Sheep in a Jeep* LAB – Float Your Boat*	Read <u>again</u> pp. 133-137 to review Newton’s Laws of Motion.	1,2,3,4
2/2	Discuss GLOBE at Night citizen science project: Orion , Feb. 1-10, 2016. Video clip: Dark Skies. www.globeatnight.org Discuss Newton’s Laws of Motion. LAB – Factors Affecting Pendulum Motion LAB – Alka-Seltzer Rocket	Read pp. 51-52, p. 58, and pp. 280-281 in Project WILD Manual	1,2,3,4
2/9	Overview of Project WILD Video clip: Project WILD Activity – Beautiful Basics Activity – Animal Charades Activity – Wildlife is Everywhere Great Backyard Bird Count citizen science project: Feb. 12 – 15, 2016. www.birdcount.org Begin Moon Journal	Read pp. 295-304 <u>and</u> pp. 320-326 in <u>Reviewing Science</u> . Complete Review Questions, Part 2, on pp. 304-308 and pp. 326-328. Due next class. STUDY FOR TEST #1	1,2,3,4
2/16	Turn in 1. GLOBE Confirmation Sheet 2. GBBC Confirmation Sheet Discuss solar energy and its influence on weather. LAB – Investigating Solar Energy and Weather LAB – Weather Watchers* TEST #1 after LAB REPORTS are turned in.	Read pp. 27-46 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 37-39 and pp. 47-48. Due next class	1,2,3,4

2/23	Review the Periodic Table. Discuss Solubility and Density. LAB – Observing Phases of Matter LAB – Investigating Solubility and Density	Read pp. 51-57 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 57-59. Due next class.	1,2,3,4
3/1	Discuss Physical and Chemical Changes. Activity: Pancakes, Pancakes* LAB – Observing Changes in Matter* LAB – Acids, Bases & Indicatorsl	Read pp. 23-27 and pp. 326-329 in Project WILD Manual.	1,2,3,4
3/8	Discuss Carrying Capacity, Limiting Factors, and Biomagnification in Food Chains. Activity – How Many Bears Can Live in This Forest? Activity – Hazardous Links; Possible Solutions (outside and inside) Turn in Moon Journal	Read Handout on Plant Anatomy. STUDY FOR TEST #2 (on 3/22/16)	1,2,3,4
3/14-3/18	SPRING BREAK	---	---
3/22	Discuss Plant Anatomy and structures/functions of each plant part. LAB – What Plant Part Are You Eating? TEST #2 after LAB REPORT is turned in.	Read pp. 243-253 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 253-255. Due next class.	1,2,3,4
3/29	Discuss Minerals, Rocks, and their Properties; demonstrate I.D. tests for minerals and how to use a Dichotomous Key. LAB – Identifying Minerals and Rocks.	Read pp. 264-267 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 269-270. Due next class.	1,2,3,4
4/5	Discuss Maps and their uses. Specifically, discuss Topographic Maps and their unique features. LAB – Working with Topographic Maps and Creating a Topographic Map.	Read pp. 30-33 and pp. 36-40 in Project WILD Manual.	1,2,3,4
4/12	Discuss the value of knowledge of animal tracks and effect of limiting factors on populations. Activity – Tracks ! Activity – Oh Deer! (inside and outside)	Read pp. 279-289 in <u>Reviewing Science</u> . Complete Review Questions, Part 1, on pp. 290-293. Due next class.	1,2,3,4
4/19	Discuss Evolutionary Theory as it applies to plate tectonics. LAB – Evolution and Plate Tectonics	Read p. 129 and pp. 133-137 <u>again</u> . STUDY FOR TEST #3	1,2,3,4

4/26	Review Force, Motion, and Acceleration. LAB- Roller Coaster!*	Read pp. 172-176 and p. 359 in Project WILD Manual.	1,2,3,4
	TEST #3 after LAB REPORT is turned in.		
5/3	Discuss Bottleneck Effect on biodiversity, and its negative impact on an endangered species. Activity – Bottleneck Genes	STUDY FOR FINAL EXAM (Comprehensive)	1,2,3,4
5/10	FINAL EXAM	---	---

***Children's Literature Books referenced:**

Sheep in a Jeep by Nancy Shaw

Captain Kidd's Crew Experiments with Sinking and Floating by Mark Weakland

Pancakes, Pancakes by Eric Carle

The Moon Book by Gail Gibbons

Roller Coaster! Motion and Acceleration by Paul Mason

Weather Forecasting by Gail Gibbons

Important Astronomical Dates for 2016:

February 4 Cross Quarter Day

March 19 Vernal Equinox

May 4 Cross Quarter Day

June 20 Summer Solstice

August 6 Cross Quarter Day

September 22 Autumnal Equinox

November 7 Cross Quarter Day

December 21 Winter Solstice