IS351 Science Inquiry
COURSE SYLLABUS: FALL, 2017

Instructor: Melinda Ludwig
Office Location: Drane Hall, Room 205
Office Hours: 4:00-5:00 T/Th
Office Phone: 903-875-7618 (Navarro College Partnership)
Office Fax: N/A
University Email Address: Melinda.Ludwig@tamuc.edu

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 (average of all grades)……40%
(Lab Reports will be primarily one report for the group.)
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 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 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. **Extremes in dress are not appropriate for a public or private school classroom. Any style of dress that would not be allowed in a public or private school classroom, or any school location where students are present, is not acceptable in this class. Remember – You are a role model, as well as a teacher, for your students.**
6. **ELECTRONIC DEVICES must be off and put away during class time, except for the following:**
   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.**
   d) **You may access the internet with your device ONLY to complete an in-class STEM assignment. (Activities from the new Picture Perfect Science STEM books)**

   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 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/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, 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	Activities	Assignments for next class session	Student Outcomes Addressed
T 8/29	Intro to Course; Review of Cooperative Learning method; Video Clip – Inquiry in Action LAB – Teaching and Learning with Inquiry	Read pp. 43-46 and pp. 123-140 in Reviewing Science. Complete Review Questions, Part 1, on pp. 130-132 and 137-140. Write only the number of the answer choice. Due next class.	1,2,3,4
T 9/5	Discuss force, motion, inertia, friction, density and buoyancy. LAB – Ride, Newton, Ride* (K-2) LAB – Sheep in a Jeep* (3-4) LAB – Float Your Boat* (3-5) **Begin Moon Journal**	Read again pp.133-137 to review Newton's Laws of Motion.	1,2,3,4
T 9/12	Discuss Newton's Laws of Motion LAB – Factors Affecting the Motion of a Pendulum LAB – Alka-Seltzer Rocket	Read pp. 51-52, pp. 58, and pp. 280-281 in Project WILD Manual.	1,2,3,4
T 9/19	Video – Project WILD Activity – Animal Charades Activity – Beautiful Basics Activity – Wildlife is Everywhere Inside and Outside	Read pp. 331-336 and pp. 342-343 in Reviewing Science. Complete Review Questions, Part 1, on pp. 339-341.	1,2,3,4

		Due next class. **Study for Test #1**	
T 9/26	Discuss Solar Energy and the Electromagnetic Spectrum. LAB – Investigating Solar Energy, including (IR and UV) Activity – Happy Birthday(K-2) (from Picture Perfect STEM) **Take TEST #1 after LAB and Activity are finished.**	Read pp. 27-46 in Reviewing Science. Complete Review Questions, Part 1, on pp. 37-39 and pp. 47-48. Due next class.	1,2,3,4
T 10/3	Review Periodic Table. Discuss solubility and density. LAB – Observing Phases of Matter LAB – Investigating Solubility and Density **Turn in Moon Journal**	Read pp. 51-57 in Reviewing Science. Complete Review Questions, Part 1, on pp. 57-59. Due next class.	1,2,3,4
T 10/10	Discuss Physical and Chemical Changes. "Pancakes, Pancakes"* LAB – Observing Changes in Matter (3-6) **Discuss GLOBE at Night Project (Oct. 11-20; CYGNUS)**	Read pp. 23-27 and pp. 326-329 in Project WILD Manual.	
T 10/17	Discuss Carrying Capacity, Limiting Factors, Biomagnification in Food Chains, and the Bottleneck Effect. WILD Activity: How Many Bears Can Live in This Forest? WILD Activity: Hazardous Links, Possible Solutions	Read pp. 295-304 and pp. 320-326 in Reviewing Science. Complete Review Questions, Part 1, on pp. 304-308 and pp. 326-328. Due next Class.	1,2,3,4
T 10/24	Discuss Atmosphere and Weather. LAB – Observing and Recording Atmospheric and Weather Data LAB – Weather Watchers (4-6) **Turn in GLOBE Confirmation**	Read pp. 243-253 in Reviewing Science. Complete Review Questions, Part 1, on pp. 253-255. Due next class. **Study for TEST #2.**	1,2,3,4
T 10/31	Discuss Minerals, Rocks, and their Properties; demonstrate ID tests for minerals and explain how to use a dichotomous key. LAB – Identifying Minerals and Rocks **Take Test #2 after LAB is finished.**	Read pp. 264-267 in Reviewing Science. Complete Review Questions, Part 1, on pp. 269-270. Due next class. **Note: We don't get a holiday for Halloween. Plan on showing up.**	12,3,4
T 11/7	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

T 11/14	Discuss the value of knowledge of animal tracks and the effect of limiting factors on animal populations. WILD Activity: Tracks! WILD Activity: Oh Deer **Begin prep for Out of Class Activity – Build a Habitat**	Read Handouts on Habitat activity from Picture Perfect STEM book. Complete the habitat for your animal and bring to class on 11/28. Read pp. 172-176 and p. 359 in Project WILD Manual.	1,2,3,4
T 11/21	Out of Class Activity	N/A	N/A
T 11/28	Discuss Bottleneck Effect on Biodiversity, Habitats, and Endangered Species. LAB – The Bottleneck Effect and its impact on the Black-Footed Ferret.	Read handout for new investigation topic from the Picture Perfect Science STEM book. (K-2) **Complete a modified Take-Home Test #3. Due on 12/5.**	1,2,3,4
T 12/5	Discuss role of Pollinators and Ecosystem Balance. LAB – Look at a Flower: What Do You See? LAB – Pollinator Model Challenge **Turn in Test #3.**	**STUDY FOR FINAL EXAM**	1,2,3,4
T 12/12	**FINAL EXAM (COMPREHENSIVE)**	**N/A**	**N/A**

***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
Newton and Me by Lynne Mayer
Rocks: Hard, Soft, Smooth, and Rough by Natalie M. Rosinsky
Roller Coaster! Motion and Acceleration by Paul Mason
Weather Forecasting by Gail Gibbons
What If There Were No Bees? By Suzanne Slade
Flowers Are Calling by Rita Gray
Jump into Science: Sun by Steve Tomecek

Important Astronomical Dates for 2017:

February 3	**Cross Quarter Day**	**August 7**	**Cross Quarter Day**
March 20	**Vernal Equinox**	**September 22**	**Autumn Equinox**
May 5	**Cross Quarter Day**	**November 6**	**Cross Quarter Day**
June 20	**Summer Solstice**	**December 21**	**Winter Solstice**