



# **Integrated Science 351.510**

## **Inquiry: Knowledge and Skills of Science**

### **COURSE SYLLABUS: Fall 2015**

**Instructor:** Dr. Christopher Long

**Office Location:** CHEC 229

**Office Hours:** Immediately after each class session

**Office Phone:** (903) 886 5488

**University Email Address:** christopher.long@tamuc.edu

## **COURSE INFORMATION**

**Textbook:** IS 351 Book of activities, available at the campus bookstore

### **Course Description**

Science topics and themes are chosen to emphasize broad concepts highlighted in the Texas and national science standards. Topics will include conservation laws, systems in nature, the nature of scientific inquiry and presentation of scientific information. The course will be taught by an inquiry based method, modeling instructional techniques proved effective by current educational research. This course is designed for interdisciplinary majors. It will not count toward a major or minor in the sciences. Prerequisite: Junior level standing.

#### *Practical description*

Science spans a broad range of topics, from biology to geology to astronomy. More than just a collection of facts, science provides a way of learning about and understanding the world. Scientific study leads to many technological advances. Science can be both fun and interesting to learn. In this course, the nature of science and the scientific method are introduced. Critical thinking is emphasized. Primarily physics related topics are covered. These topics include Newton's Laws, energy, circuits, and waves. This course models inquiry based teaching methods.

## **Student Learning Outcomes**

1. Students will be able to describe Newton's Three Laws.
2. Students will be able to determine whether a circuit is complete or not.
3. Students will be able to find science lessons appropriate for use in K-8 classrooms and identify which TEKS they satisfy.

## **COURSE REQUIREMENTS**

### **Instructional / Methods / Activities Assessments**

Lecture and/or readings will be used to introduce topics. Students are encouraged to ask questions during lecture. However, the primary instructional method for this course will be hands-on activities. Activities will be completed in groups of 4. Students may choose their own groups at the beginning of the semester, but the instructor may assign groups at a later date.

Education research shows that learning is enhanced through group work. Students can do more together than they can do on their own. Note that there will be no make-ups for group activities.

## **GRADING**

Grades will be based on four components:

- Exams 40%
- Notebook 20%
- Homework 20%
- Class participation 20%

Grading scale:

- A 90-100%
- B 80 - 89%
- C 70 - 79%
- D 60 - 69%
- F < 60%

In order to pass the course, you must achieve a 60 or higher on at least one exam (first exam, second exam, or final), regardless of your average calculated using the above weighting.

Exams: There will be two midterms and a final. They will be weighted equally. Midterms will be scheduled at least two weeks in advance. The date will depend on the speed at

which material is covered. See the course outline for approximate dates. Make-up exams will only be allowed for excused absences. See course policies below for details on excused absences.

Notebook: Guidelines for the notebook will be provided in a separate document.

Homework: Up to 10 homework assignments will be assigned throughout the semester. The lowest grade will be dropped. Homework will be accepted up to a week late. 10% will be taken off the grade for each business day late.

Class participation: You will receive a participation grade for each class day (except the first day and exam days) based on your participation in group activities. The lowest grade will be dropped.

Participation grade calculation:

1. An absence will result in a zero for the missed class. This includes excused absences. If you have more than one excused absence, the resulting zeroes will be dropped before calculation of your average. (See course policies below for details on excused absences.)
2. Cell phone use (texting, etc.) results in a 10 point deduction.
3. Use of other electronics (tablets, etc.) results in a 10 point deduction.
4. Eating is a 5 point deduction; however, covered drinks are permitted.
5. Missing 15-35 minutes of class will result in a 20 point deduction. Missing more than 35 minutes of class will result in a 50 point deduction. This includes tardiness, leaving early before finishing all class activities, or missing a portion of the middle of class.
6. Not fully participating in class activities results in a 20 point deduction. You will receive a warning rather than a point deduction the first 3 times during the semester you are observed to not be fully participating.
7. Class work will be collected to verify participation.
8. The instructor will provide students with their participation averages midway through the semester and upon request.

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures**

1. Cell phone use is not allowed during class and will lower your participation grade. If you have a valid reason you need to receive a phone call during class (expecting a phone call from doctors, etc.), you must notify the instructor by the beginning of class to prevent it affecting your participation grade.

2. No electronics are allowed to be used during class. Use of electronics will lower your participation grade.
3. Eating is not allowed and will lower your participation grade. However, covered drinks are allowed.
4. Attendance will be taken by sign-in sheet and verified by seating chart at the beginning of class. If you change your seat, make sure it is reflected in the seating chart.
5. The instructor must be notified by email (christopher.long@tamuc.edu) about any excused absences no later than 24 hours after the missed class. Even if you choose to notify the instructor in person, you must still follow up with email. If you do not follow this policy, you will have the zero participation grade counted, lose points on late work, and not be able to make up a missed exam.
6. You are responsible for obtaining notes and class announcements from missed classes.
7. Excessive absences may result in being dropped from the course.
8. When emailing the instructor, include the course and section number in the subject line.
9. You are expected to check your email at least once a day for class announcements. Emails will be sent to the email addresses you provided to MyLeo. Notify the instructor if you would prefer to receive emails at a different address.
10. Homework is due at the beginning of class and will be counted late after class starts.
11. Students should fully participate in class activities. Failure to do so will impact the student's class participation grade.
12. Students are expected to be professional and respectful and take responsibility for their learning. If you find yourself struggling, the instructor is available to provide extra help outside of class.

## **University Specific Procedures**

### **ADA Statement**

#### **Students with Disabilities**

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- Room 132

Phone (903) 886-5150 or (903) 886-5835  
Fax (903) 468-8148  
StudentDisabilityServices@tamuc.edu

## **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Code of Student Conduct from Student Guide Handbook).

## **Plagiarism**

Plagiarism is a criminal activity. You must cite all sources of information. Unreferenced copying of material, whether parts of sentences, whole sentences, paragraphs, or entire articles can result in a score of zero for your assignment and may result in further disciplinary action.

## **COURSE OUTLINE / CALENDAR**

Week (Exam dates are approximate.)

8/31 Nature of science

9/7 Labor Day - No class

9/14 Motion/The metric system

9/21 The pendulum

9/28 Energy

10/5 **Exam 1**

10/12 Force and Newton's Laws

10/19 Force and Newton's Laws

10/26 Force and Newton's Laws

11/2 **Exam 2**

11/9 Circuits

11/16 Circuits

11/23 Waves

11/30 Waves

12/7 Review

12/14 **Final**