INTEGRATED SCIENCE 352 SYLLABUS
Spring 2012; Section 001, Call #20503; TR 9:30am - 10:45pm

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TEXTBOOK: IS352 Book of activities, available at campus bookstore

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ADA STATEMENT

Texas A&M University-Commerce is committed to providing access and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. Americans with Disabilities Act (ADA) accommodations will be made in accordance with the law. To request ADA accommodations, please communicate your needs 7 days before the activity or program you plan to attend by calling Dr. William Newton at 903-366-9331.

STUDENT LEARNING OUTCOMES:

- Students will understand through activities the basic processes of science: observing, measuring, classifying, inference and prediction, hypothesis and controlled experiment.
- Students will demonstrate detailed knowledge of the science TEKS for one specific grade level, together with an understanding of how to put together a full set of lesson plans that satisfy those TEKS.
- Students will understand the differences between states of matter, difference between physical and chemical properties.
- Students will understand the basic organization of the periodic table in terms of atomic structure, how that information helps us understand why certain sets of atoms bond together to form compounds and why certain chemical reactions occur.
- Students will be able to apply basic chemistry knowledge to understand simple organic molecules and processes relating to everyday life.
- Students will know the basic layers of the Earth's atmosphere and interior.

CLASS OVERVIEW

This class is complementary to IS351. Whereas IS351 covers mainly physical science, IS352 covers mainly chemistry related topics.

1. To give future elementary and middle school teachers the knowledge and understanding to accurately and comfortably teach science to their students using interesting hands on activities that reinforce key concepts and the science TEKS.

2. To give you the essential knowledge to pass the science portion of teacher certification exams (TExES).

3. To understand the scientific method, how science is actually carried out in practice, the relation of science to everyday lives, and to develop critical thinking skills useful in **all** aspects of life.

Although this class's primary goal is the teaching of basic science concepts, you will find that activities and learning methods we will use along the way will be useful in your own classrooms. The specific concepts you will study in this class are pitched generally at a middle - high school level; remember, it is essential that you know a subject at a higher level than the students you teach and are able generally to answer science questions that elementary and middle school children are likely to put to you (and they can be quite creative).

It is important to note that even if you are not intending to become a science teacher specifically, it is essential to have a knowledge of basic science in the classroom. Science impacts all areas of life, including those of an elementary or middle school student, and you will inevitably encounter science related questions regardless of what subject you teach. Additionally, the methods of critical thinking that form part of the scientific method can be applied generally to most aspects of life, whether they relate to science or not. Finally, from a practical point of view, you will need to know the material in this course in order to pass the science part of the certification exams.

The teaching and learning of science should both be interesting and fun if approached in the right way. Children are natural scientists, in that they are constantly asking questions about how and why things work as they do, and are always attempting their own scientific experiments. Many people report that they lose interest in science during the later years of school (middle and high), citing dull teaching methods and the emphasis on standardized testing that take the life out of the subject. The science is still as interesting as when they younger, but the joy of thinking and figuring out things for themselves can get squeezed out by the pressure of standardized tests which tend to encourage memorizing over understanding. In this class, **critical thinking and analysis will be stressed over rote memorization**. I want to make class as an enjoyable an experience for you as possible. If you don't understand something, ask. If you still don't understand it, ask again! I don't mind being interrupted with questions and repeating things. Asking questions **when they arise** will help to minimize confusion and maximize understanding. It will also let me know when I'm not getting the information across.

The overall aim in this class to make science entertaining and interesting to you, and for you to take that interest and enthusiasm into the classroom to encourage the next generation of children to engage with and participate in science. A science literate and science-enthusiast society is crucial to the healthy future of any country.

GRADING AND CONTENT:

Grades will be determined by a combination of three exams (two midterms, one comprehensive final exam), class participation, homework and the notebook on TEKS activities. The grades break down as follows:

3 Tests (2 Mid-terms, 1 Final) -	100 points each
Notebook -	100 points
Homework -	100 points
Participation -	100 points
TOTAL -	600 points

GRADING SCALE:	600 - 540: A	539 - 480: B
	479 - 420: C	419 - 360: D
	359 & below : F	

Note that by this grading scheme it is possible to end up with a grade of C or above without passing any of the 3 exams. Therefore, to demonstrate sufficient understanding of the material, if a student fails the first two exams, that student must pass the final exam in order to pass the class. Students who fail all three exams will fail the class regardless of their eventual average.

Homework: there will be around 8 to 10 homework assignments throughout the semester, worth between 10 and 20 points each; at the end of the semester the lowest scoring 2 homeworks will be dropped and only the 6-8 top grades counted. The homework will emphasize **effective, clear communication of your ideas and thought processes** over actually obtaining exactly the "correct" answer, although that will still be required in the later stages of the class. Occasionally reading assignments will be given, and tested by in-class activities or quizzes.

Class participation is assessed through involvement in group activities and associated in-class worksheets, and through occasional class quizzes or question sheets for which notice will be given at least one class in advance. A large part of this class will be spent doing hands on activities in groups. As with homeworks, the lowest scoring 2 participation grades (that is, activity worksheets and quizzes) will be dropped.

Exams will be scheduled at least two weeks before you are due to take them to give you adequate time to review the material covered. They will be scheduled when we have covered sufficient material. I don't set the exam times at the beginning of the semester because different classes move at different rates. The exams will consist of a multiple choice section together with the occasional written questions and group activity. One week before each exam a summary of the material it will cover will be handed out; the class before the exam we'll review a sample exam.

Classes will be a mixture of discussion of concepts and hands-on activities. I will occasionally give hand-outs on various concepts, **but be prepared to take your own notes** throughout this class. Sometimes I'll give reading assignments to do at home before a particular class activity; you will be expected to have read the material assigned, as the activity will depend on it.

Summary of key expectations of your work: Not following these expectations may result in lost points.

- You are responsible for knowing and understanding the contents of this syllabus.
- You will have your own copy of the book of activities by the start of second week of classes.
- All work will be completed neatly with correct spelling and grammar. Clear, unambiguous communication is essential in science.
- I will make it clear what is expected of each homework and in-class activity; you are expected to take note of this and complete your work accordingly.
- Reading assignments will be completed before the relevant class.
- You will participate fully in class activities and discussions.
- You are responsible for identifying any material you are having problems with by carefully looking over homeworks and in-class worksheets after they have been graded. I will help by comments on those sheets suggesting particular areas to work on.
- You are responsible for seeking out help with any material you are having problems by asking questions in class, via email, coming to see me during office hours or other scheduled times. I will ALWAYS make time to go over any material you want.

CLASS SCHEDULE:

Here is a tentative schedule for the class:

Subject	Class
Processes of science (examples of various parts of the scientific method).	1-4
States of matter	5-10
Chemical properties: structure of the atom, the periodic table, elements and compounds	11-13
Chemical reactions and chemical equations	14-17
Acids and Bases	18-22
Applications of chemistry	23-28

CLASS CONDUCT AND POLICIES:

1. **University policies**

- All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Student's Guide Handbook, Policies and Procedures, Conduct). Rude or disruptive behavior will NOT be tolerated.
- Texas A&M University-Commerce does not tolerate plagiarism and other forms of academic dishonesty. Conduct that violates generally 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.

2. **Absences/ lateness to class**.

- Roll is taken at the beginning of each class **using the seating chart**; if you change your seating position, make sure you let me know and update the chart.
- Written work/announcements/assignments/notes on material missed during absence or lateness must be made up. **Missed activities usually cannot be made up, and some participation points will be lost even if the absence is excused; this does not necessarily impact your grade since the lowest two participation scores are dropped**. You must still understand the concept behind the activity and the results, as these can come up in exams.
- Absence or lateness must have a valid reason (illness, school-sponsored events, court appearances, emergencies) provided that excessive absences are not a problem. Proof of excuse will be required.
- You should give your reason for absence or lateness **by email**. If you know ahead of time you will be late or absent, you must let me know by email **before the class** or the absence will not be excused.
- If the absence or lateness cannot be forseen (e.g. stuck in traffic) you should try and let me know by phone, and you must still email me with the reason **before the next class after the one you were late or absent for**.
- Absences due to vacations will not be considered excused for any reason.
- Unexcused absence: 10-point deduction from the final grade.
- Late to class twice: 5-point deduction from final grade.
- Three consecutive unexcused absences/unexcused absences 50% of the time: dropped from class with a failing grade.

At the end of each week I will email those who had unexcused absences/latenesses to let them know of the deductions above.

3. **Late homework** without valid excuse will be accepted with a deduction of 3 points for each class it is late after the due date.

4. **General behavior**.

- Cell phone ringing/vibrating: 5-points deduction each time.
- Texting or otherwise using phone during class: 5-points deduction each time.

- Listening to iPod/similar devices: 10-points deduction each time.
- Talking/whispering repeatedly while I'm explaining concepts/going over activities/leading discussion: 5-points deduction minimum, 60-point deduction maximum.
- Eating during the class period: 10-point deduction. Drinks allowed.
- Doing work for another class: 30-point deduction.
- Cheating/plagiarizing (e.g. copying classmates, turning in identical papers on individual assignments): Failing grade, referred to the Dean of Students for disciplinary actions.

I will make exceptions to the ringing cell phone rule at my discretion if some type of situation exists in which someone (family member, doctor, lawyer, etc.) might need to get in touch with you in a hurry. **You must let me know of such situations in advance.**

If I or my TA notices students behaving in one of the prohibited ways above, or other students complain about disruptive behavior, then I may deduct the appropriate points without letting you know immediately, to avoid disruption to the class. It is **your** responsibility to behave in an adult way in these classes, and be respectful to your fellow classmates. It is useful to begin thinking of yourselves as **professionals** rather than students and conduct yourselves accordingly. You are training to be teachers; it is a good idea to behave in a way you would expect students in your own classes to behave.