ISCI 2002 (CRN 2044)
Physical Science for Teachers
Spring 2016

Homepage: http://itc.gsw.edu/faculty/speavy/spclass/ISCI_2002.htm
Instructor: Dr. Samuel Peavy
Office: Roney 206
Class: Roney 305
TR 2:00 – 4:00 PM

Phone: 931-2330
Email: speavy@gsw.edu

Text: *Conceptual Integrated Science* by P. G. Hewitt, S. Lyons, J. Suchocki and J. Yey, 2nd Ed.

Course Description: A three semester hour course designed to meet the needs of Early Childhood Education Majors. This is a lecture course with an integrated lab component. The student will investigate areas of the physical sciences, including but not limited to: the scientific method, the nature and properties of matter, chemical and physical change, conservation laws, forms of energy and their interaction, forces, motion, simple machines, and the characteristics of sound, light, electricity and magnetism. (2-2-3)
Prerequisite: Major in Early Childhood Education or Pre-Early Childhood Education

Course Objectives and Learning Outcomes: Course Objectives and Learning Outcomes: The objective of the course is to permit students majoring in Early Childhood Education an opportunity to acquire knowledge in the physical sciences necessary for teaching grade school science. By the end of the course, the student will be able to:

- Demonstrate knowledge of the nature and principles of scientific inquiry and honesty;
- Demonstrate the proper design of scientific experiments;
- Apply knowledge of strategies for observing, collecting, analyzing and communicating scientific data;
- Utilize laboratory equipment safely and properly to demonstrate basic principles of physical science; and
- Understand basic principles of physical science and be able to communicate them successfully to others.

Class Policies:

1) All students at Georgia Southwestern State University are to abide by published rules outlining academic honesty. Please review the "Policy on Academic Integrity" from the undergraduate bulletin that can be found on p.100 at the following URL:

   https://gsw.edu/Assets/RegistrarsOffice/bulletin/Current-Undergraduate.pdf

   You will be asked to sign a pledge stating that you have read and fully understand the policy. Any violations of academic integrity will result in a grade of zero on an assignment or exam for the first violation, and an "F" in the course for any additional violations.
   In addition it is possible that this course will involve the use of plagiarism-prevention technology. For example, you may be required to submit written assignments on-line through a plagiarism-prevention service or to allow me to submit copies of your writing to such a service. The written assignments may then be retained by the service for the sole purpose of checking for plagiarized content in future student submissions.
2) A student requesting classroom accommodations or modifications due to a documented disability must notify me within the first two days of the semester. The student has not already done so, he or she must contact the Office of Disability Services located in room 302 of Sanford Hall. The phone number is 229-931-2661.

3) Come to class prepared to learn. You should not be talking with your neighbor during class unless it is necessary for an activity. Pay attention and take notes as appropriate. In addition, all electronic devices – with the exception of Personal Response Systems (PRS) – must be turned **OFF** before class begins. If there is a special situation, you must see me BEFORE class for permission to leave a device on during class time. You will be asked to leave for the rest of that class if your phone rings, I catch you texting, etc. Come to class prepared to learn.
4) I will be available in my office for questions from 9:00-9:45 AM and 1:00-1:45 TR (other times by appointment only). I can also be called at 931-2330 or reached by email at speavy@gsw.edu.
5) **ATTENDANCE IS REQUIRED**. Missing classes will cause you class participation and quiz grades to be reduced (see below).
6) Your **grade** will be based on your performance on four in-class exams, quizzes, homework assignments, a group project and a comprehensive final exam. Daily participation in class will also count towards your final grade. In summary:

Exams (4 x 100 points each) – 400 points
Final Exam – 100 points
12 Quizzes – 60 points
Homework – 32 points
Daily Participation – 48 points
Total – 640 points

More details follow.

7) There will be four in-class exams, each worth 100 points (see schedule below). They will consist of any combination of the following types of questions: multiple choice, fill-in-the-blank, matching, short answer, essay and problem solving.
8) There will be a final exam on all material from the semester. It will be worth 100 points.
9) Quizzes will test your knowledge of material presented in the textbook (see schedule below). Each quiz will consist of 10 multiple choice and fill-in-the-blank questions. Since there are 12 quizzes, it is possible to earn a maximum of 120 points on quizzes. Quizzes will be administered beginning at 2:00 PM during the first 5 minutes of class; **there are no make-ups for missed quizzes**.
10) You will be assigned homework exercises from your textbook. Homework will be assigned in class AND posted on the class webpage. Each homework assignment is due on a particular date; ***late homework exercises will not be accepted***.
11) Your attendance and participation in class will be worth 2 points per day towards your final grade for a total of 48 points. **Missing a day of class will result in a "zero" for participation that day**. You ***must fully participate*** in class to earn full credit for that day.
12) The grading scale will be as follows:

Total Points	Letter Grade
576+	A
512-575	B
448-511	C
384-447	D
less than 384	F

TENTATIVE LECTURE SCHEDULE

Dates	Topic	Readings
Jan. 12-14	About Science; Describing Motion	Chapters 1 & 2
Jan. 19-21	Describing Motion; Newton's Laws	Chapters 2 & 3
Jan. 26-28	Newton's Laws of Motion; Vectors and 2-D Motion	Chapter 3
Feb. 2	**Exam 1**	**Chapters 1-3**
Feb. 4	Momentum	Chapter 4
Feb. 9-11	Momentum and Energy; Gravity	Chapters 4 & 5
Feb. 16-18	Gravity; Heat	Chapters 5 & 6
Feb. 23	Heat	Chapter 6
Feb. 25	**Exam 2**	**Chapters 4-6**
Mar. 1-3	Electricity & Magnetism	Chapter 7
Mar. 8-10	Sound & Light Waves	Chapter 8
Mar. 15-17	The Atom; The Nucleus and Radioactivity	Chapters 9 & 10
Mar. 21-25	**Spring Break**	**No Classes**
Mar. 29	**Exam 3**	**Chapters 7-10**
Mar. 31	Investigating Matter	Chapter 11
Apr. 5-7	Matter; Bonds	Chapters 11-12
Apr. 12-14	Bonds, Mixtures and Solutions; Reactions	Chapters 12-13
Apr. 19	Chemical Reactions	Chapter 13
Apr. 21	**Exam 4**	**Chapters 11-13**
April 28	**FINAL EXAM, 1:00 – 3:00 PM**	**All Covered Topics**

QUIZ SCHEDULE

Date	Topic
Jan. 14	Chapter 1
Jan. 21	Chapter 2
Jan. 26	Chapter 3
Feb. 4	Chapter 4
Feb. 11	Chapter 5
Feb. 18	Chapter 6
Mar. 3	Chapter 7
Mar. 8	Chapter 8
Mar. 15	Chapters 9 & 10
Apr. 5	Chapter 11
Apr. 12	Chapter 12
Apr. 14	Chapter 13