University of Central Florida
Teaching Science in Elementary School
Cocoa Campus Spring 2010
SCE 3310.0070 Course Guide
Tuesdays: 9:00 – 11:50 a.m.

I. Descriptive Information

Catalog Description:
Selected concepts; organizing for instruction; techniques; evaluation procedures.

Course Credit: 3 Credit Hours

Prerequisites: Junior Standing or C.I.

Classroom: Lifelong Learning Center Bldg. (#3), Room 366 – Cocoa Campus

Professor: Mary Kalen Romjue, Ph. D.

Phone: (321) 633-4586 (home in Brevard County) — use this number
If I am not there, leave a message on my answering machine and I’ll return your call as soon as possible.
Or e-mail: mromjue@mindspring.com
I can only get online early in the morning and do so only one time per day. Be sure to identify in the subject line that the message is coming from someone in the SCE 3310 class or it will not be opened.

Office Hours: For the purpose of this class I will be in the classroom at least one-half hour before and after class, other times by appointment. My regular office is on the Cocoa campus.

II. Statement of Course Goals and Objectives

Course Design and Description – PR: Junior Standing or C.I. Selected concepts; organization for instruction; techniques; evaluation procedures. SCE 3310 is designed to help students learn to teach science to children in ways in which are consistent with what is known about science as well as what is known about the physical, emotional, and cognitive development of children in contemporary society.

Goals and Objectives – SCE 3310 is designed to prepare you to incorporate the Florida Educator Accomplished Practices/Professional Education Competencies (FEAP/PEC - 10) within a science teaching setting; and implement the Florida Sunshine State Standards (FSSS) and English Speakers of Other Languages (ESOL) strategies (ESOL - 5, 6, 12, 15, 16 & 18; PEC - 14). Additional standards from the Association for Childhood Education International (ACEI - II, III, IV, V & VI) and Technology will be met. NOTE: Activities linked with a FEAP/PEC and with ESOL strategies can be used, along with the evidence produced, to meet LiveText, portfolio, and ESOL Notebook requirements. By the conclusion of SCE 3310, you will be able to:

1) display knowledge of science content (FSSS) and applications in life, physical, and earth/pace science.
2) develop, design, teach and reflect on lessons that relate science concepts to appropriate mental and physical abilities of children. (FEAP/PEC – 10) (ESOL – 5, 6, 12, 16 & 18; PEC -14)
3) demonstrate competence in assessment and teaching methods and strategies; and management and safety skills which encourage inquiry and creativity as children investigate their environment.
4) identify science teaching resources found both within and beyond the school setting, including computer and technology resources. (ESOL – 5 & 15)
5) communicate justifiable reasons for teaching science in the elementary school.
6) incorporate art, music, and movement into the elementary science classroom.
III. You Will Need (i.e., must purchase)

**Required text is:**


**If you wish to earn a grade of either an “A” or a “B,” you will also need to purchase:**


**Optional (you may find these two books useful but they are not required in any way):**

(If YOU ARE IN INTERESTED IN EITHER OF THE FOLLOWING BOOKS, then check with me to see how they may be used as a source for half of an A Project or an even an entire A Project. BUT IF YOU ARE NOT INTERESTED in them then we will discuss other ideas should you want to contract to earn a grade of an “A”. We negotiate and sign contracts for grades, see contract description below).


**In addition, you must purchase:**

- One bankers (archive) box 12 by 15 by 10 inches with cover (legal size). I bought mine at Office Depot (six per carton). Stock No. 63325. They come packaged 5 or 6 boxes to a carton. They can be purchased several other places too. If a group of you purchase a carton of boxes it usually amounts to about $2.00 per person.

- You also need one piece of insulation (4 feet by 8 feet by 1/2 inch) with aluminum foil on one or both sides (five people can use one piece 4 by 8 feet). Usually the insulation amounts to about $2.00 per person. (We will discuss this soon – detailed instructions are on my website for the College of Education. We will build the solar ovens in class, but it is easier if insulation is cut at home.)

- **Project WILD (I provide these manuals at no cost to you)** Western Regional Environmental Educational Council. Florida State Games and Parks Division. In conjunction with the National Project WILD Office in Texas.

IV. Major Topics of the Course

A. Various methods of teaching science lessons
B. Questioning/inquiry skills
C. Science resources other than the teacher
D. Different approaches to classroom management
E. Science Technology and Societal (STS) issues
F. Issues of females and minorities, and ESOL students in science education
G. Full Option Science System (FOSS)
H. Project WILD Workshop (This counts as two days of class.)
I. NASA/Aerospace Science Education Workshop that will be held at NASA/Kennedy Space Center (See daily schedule; it is required and counts as two days of class.)

V. Academic Course Requirements

You will develop a portfolio for this class. It is a record of your growth and learning and thinking about science education, in particular about the role of science in the elementary/middle school.

The portfolio itself will not be graded but is intended to represent what you feel. It represents your learning and hopefully will serve as a resource that you may use for years to come.
Your portfolio should be kept in a three-ring binder.

It MUST include:

1. A table of contents
2. It will include, but is not limited to, the following:
   a. Science lesson plan (see description below)
   b. Initial and final position statements (see description below)
   c. Reflection papers (see description below)
   d. Journals (see description below)

A. Science Lesson Plan
You will prepare one science lesson plan (it will be taught to elementary students in a nearby school of your own choice). The lesson will be a hands-on/minds-on science lesson that should have other disciplines (subjects), like art or music, math, etc., integrated into it. Not all disciplines need to be integrated into each lesson but an attempt should be made to integrate those that seem appropriate. Your lesson is to last approximately 20 minutes. You will be responsible for furnishing any needed supplies and for the cleanup after your lesson. The most important person for approval of your topic is the teacher of the class that you are working and then by Dr. Romjue. (Criteria for Science Lesson Plans will be provided.) **This is the major assignment for a grade of a C. It is to be submitted to the Planning section of your Electronic Portfolio (Live Text) and must be approved before you can pass this class. The great thing is that it is also the TESOL assignment that is expected from this class. Otherwise you can get several requirements completed with just this one assignment. See the Tentative Schedule for the due date.**

B. Position Paper
Develop a Position Paper that will allow you to articulate your philosophy of science teaching. The first is hand written, the last is to be typewritten/word-processed. (Criteria are provided.)

C. Reflection Papers
Thoughtfully write Reaction Papers on assigned readings. (Assignments will be made periodically and criteria will be provided. Not every assigned reading will require a paper.) **Most of these need to be typewritten/word-processed.**

D. Journal/ or sometimes just a series of Questions
Each student is asked to describe his/her thoughts and feelings about activities and ideas that occur in the class and will keep journals. **Journals/Questions will not be collected every week. Actual dates will be on the Tentative Schedule. These may be hand written.**

VI. Evaluation and Grading

***Requirements for a C (C– through a C+) are:***

- Successfully completing the following (and 80% attendance):
  - Journal/Questions (as assigned)
  - Position Papers (first and final)
  - Reflection Papers (as assigned) (Including reflections from *Nurturing Inquiry and articles from NASA News*, etc.)
  - Participation in class activities and class attendance/positive attitude
  - Science Lesson Plan (submission to Live Text Planning Section, teaching the lesson in an elementary school and a written reflection about the planning and the teaching of the lesson)

***Requirements for a B (B– through a B+) are:***

- Successful completion of all requirements for a grade of a “C”
- Plus Two Special B Projects (and 85% attendance) (see below)

1 – SCIENCE LEARNING CENTER AND SUMMARY REPORT

A. You may choose the science topic (check into the Florida Sunshine State Standards as to what is being taught in the grade level you wish to teach). This way you will not be doing useless work. You will be able to take this project into the classroom and use it and maybe in your Internship.

B. There needs to be a minimum of eight (8) activities related to the same topic
   This is to be geared to small groups (2 or 3) and not to the whole class.
C. It is to be displayed on a “Science Fair Backdrop”
D. THE SUMMARY REPORT IS SUBMITTED AT THE SAME TIME AS THE PRESENTATION OF YOUR SCIENCE LEARNING CENTER (see Tentative schedule for the due date) (see criteria for details).
E. The Science Learning Center WILL BE PRESENTED TO THE WHOLE CLASS.

And

2 – BLACK PIONEERS OF SCIENCE AND INVENTION PROJECT (3 PARTS)
For this assignment, you need to:

Part I. Prepare a PowerPoint presentation to describe events and contributions of the men from this book. IF you plan to use it when you teach remember to keep it age appropriate for the students you wish to teach. Try to get across some of the life experiences and contributions of these men. Print a hard copy for me to keep.

Part II. Then pick two of these men and prepare one activity for each man (a total of two activities) to help students remember something important about each man. Describe the activity in detail (include: How it meets the FSSS’s, the source for your activity, materials, instructions, see criteria for details) and Print a hard copy for me to keep.

Part III. Finally you will finish this assignment by submitting in writing (word processed) the impressions that you had while reading this book. Write no more than one page and Print a hard copy for me to keep.

****So, when handing in this half of the “B” Assignment, YOU NEED TO SUBMIT:
1) a hard copy of the PowerPoint,
2) a hard copy of the activities (two activities, one for each of the two men), and
3) a hard copy of your final impression. See the Tentative Schedule for the due date.
THIS ASSIGNMENT WILL NOT BE PRESENTED TO THE CLASS.

***Requirements for an A (A– through an A) are:
- Successful completion of all requirements for both the grades of a “C” and a “B”
  And 90% attendance (see below)
  Plus
- One large Special Project or (or two small projects) decided upon by contract (see contract description). We will start with those who are ready on the second week. We will finish by the end of the 4th week if at all possible.

Class Attendance

Note: Attendance, participation, and attitude are very important to this class and have an effect upon your grade. See remarks regarding attendance below. Regular attendance is expected all of the time. Many activities in which we will be involved are group activities and your absence puts the group at a disadvantage when trying to accomplish tasks. Too many absences will result in a lowered grade. (See description below.) Your grade for this course will be based on the completion of all course goals and full participation in all discussions and activities.

An A grade (A– through an A) indicates that the student demonstrates outstanding qualities of a life-long learner, abilities to design and develop appropriate lessons, to evaluate and redesign them as necessary, and to plan for and interact with diverse learners in a manner that allows them to enter their quality world. An A grade indicates that the student has fulfilled his/her contract for the grade of an A and has a minimum class attendance of 90% in addition to completion of all assignments and participation in all class activities. Consistently arriving late and/or leaving early will result in lost days. Poor quality A projects will result in a lowered grade.
A B grade indicates that the student has acceptably demonstrated the ability to plan, interact with, and facilitate learning in science classrooms and to develop and apply appropriate lessons and lesson plans. A B grade (B– through a B+) indicates that the student has fulfilled the requirements for a B and has a minimum class attendance of 85%. Consistently arriving late and/or leaving early will result in lost days. Poor quality B projects will result in a lowered grade.

A grade of a C (C– through a C+) indicates that the person has fulfilled the requirements for a grade of a C and has a minimum class attendance of 80%. Consistently arriving late and/or leaving early will result in lost days. Poor quality C projects will result in a lowered grade.

No Incompletes will be given.

D–F: See Instructor*

Grades will be reduced for:

- Poor quality work
- NONPROFESSIONAL ATTITUDES AND ACTIONS (SUCH AS CONSTANT COMPLAINING, REFUSAL TO WORK COOPERATIVELY WITH OTHER CLASS MEMBERS, BELIGERENCY, ***USING CELL PHONES, TEXTING (TURN PHONES OFF DURING MY CLASS!!!) , AND FINALLY ALWAYS TALKING WHEN OTHERS ARE TRYING TO PRESENT)
- Work that is not free from grammatical and spelling errors
- Failure to attend class and/or being consistently late or leaving early (see attendance policy)
- Failure to complete work as part of a teaching or a support group
- Consistently handing in assignments late
- Failure to successfully complete your contract
- Plagiarism
- Failure to get approval of the Live Text assignment as directed will result in an “F” in this class.

*Remember, it is possible (within time constraints) to revise your work or to discuss its merits with the instructor. This philosophy is based on the fact that good teachers must always reflect on their work, revise or refine lessons, and seek feedback from peers. If you are not willing to do this, it is possible that education is not a suitable profession for you. Also remember if your work is of poor quality, the instructor reserves the right to lower the grade an entire grade level (A to B) or to use a minus grade. Therefore the instructor is reserving the right to raise or lower a grade according to the quality of work presented in the fulfillment of contracts. For instance, if a person does the required work for a grade of a B, but does poor quality work, the instructor would give that person a grade of B– at the end of the semester. Only in severe cases would a grade be lowered an entire grade level (i.e., as from a B to a C).

VII. Mode of Instruction

In order that I can help you understand the methods that I wish you to use to teach science, I will use these same methods to teach you. Lecture will be very limited. Most of the pedagogy and science will be taught by doing. We will learn scientific knowledge at the same time that we are experiencing a new teaching model. Most of this class is to be hands-on/minds-on.

VIII. Bibliography

Additional and optional suggested references that you might be interested in that are related to science topics


Reflection papers are reviews of assignments, videos, journal articles, books, or other materials that are designed to elicit your reactions and responses.

These should be typed/word processed; in some cases, an assignment may be done during class and these will be hand written.

USE THE FOLLOWING FORMAT:
Length: 1–2 pages is sufficient (single- or double-spaced)
Your Name (first and last) and Today's Date
Name of Article/Video
Name of Author, if available
Or Source, if identifiable
Date of Publication, if identifiable

1. First read the assigned reading or view the video, whichever is requested.
2. Go back through the assigned material and identify passages that seemed to catch your attention, either positively or negatively. When viewing a video this may not be possible, so take notes as you view the material and work from your notes.
3. A. Write out the first of the quotations “...” and cite them like this – (pg. 23) and then
   B. Write a paragraph or more describing what it was about that particular section that seemed to stand out to you, otherwise, describe your feelings about what was being said
   C. And probably the most important, describe what leads you to feel the way you do, In other words, what is it in your life experience has led you to think the way you do?
4. Continue with the other quotations using the same procedure as described in #3.
5. End the assignment with your general thoughts about the article/video, etc.
1. This contract is to be written by you. Every student in the class is required to design a contract for the grade he/she wishes to earn.
2. You and Dr. Romjue will sign the contract when it is agreed upon. Make a copy for Dr. Romjue.
3. To complete the form, you need to think about what you personally would like to learn in the course. Define your needs and list them on the contract.
4. The required activities have been pre-determined by the professor. The optional activities (projects) listed on the contract should reflect and fulfill the needs that you have in being able to teach science in your future classroom.
5. When you complete the contract work, the contract is fulfilled and you receive the grade for which you contracted. This, of course, is assuming that the work you do is acceptable. The writing of an “A” contract means that you will be doing “A” quality work. Any work turned in that is not of “A” quality will receive a lower grade (such as an “A–” or lower). This will lower the contract grade, if it happens regularly. Quality work includes having the work free from grammatical and spelling errors. I will show examples of good quality work.
6. An individual conference will be held between you and the professor to discuss and sign the contract.
7. If the contract has been successfully completed, you will receive the grade for which you contracted.
8. Contract changes may be negotiated between you and the professor but do not wait until the end of the semester because that will be too late. KEEP IN MIND THAT YOUR GRADE IS ALSO DEPENDANT OF SUCCESSFUL COMPLETION OF THE LIVE TEXT ASSIGNMENT.
COURSE CONTRACT
SCE 3310

Name _________________________________________________________________ (Undergrad) or (Grad)

Course Number_________ Semester ___________ Year________

Home Address___________________________________________________________
_______________________________________________________________________

Phone number where you can be reached (______) _____________________________

E-mail address:  __________________________________________________________
Make sure it is the same as the one on eCommunity.

This Contract is for a grade of ____________.

B-Project(s):

My Learning Center Topic is: __________________________________________________________________
(Remember, you will need (SCE 3310 = eight activities) that are connected to this topic; if you need to change this topic, you need to visit with me and we will change the contract.) THESE WILL BE PRESENTED TO THE WHOLE CLASS.

The Black Pioneers Project: – Remember that this includes: (1) A PowerPoint presentation of the men in the book (I get a hard copy of this); (2) Then choose two of the men and prepare one activity for each (I get a hard copy of these two activities, see criteria); (3) Finally, write a page to describe your thoughts when reading this book (I get a one page hard copy). Unlike the Science Learning Centers, none of these three assignments will be presented to the class.

A-Project(s): Describe in detail what the product(s) will look like. You may choose one major project or two minor projects. Use the back of (or an additional) sheet if necessary.

Date ____________________  Student (Signed) ___________________________________________________

Date ____________________  Professor (Signed) _________________________________________________

Please make a photocopy for me after we have signed the contract. You keep the original.