CI 426 Introduction to Teaching Elementary School Science (PreK-4th Grade)

Syllabus Spring Semester 2016 RLC Marketplace Rm 336
Wednesdays 4:30-7:10 p.m. January 20 – May 11, 2016

Instructor: Dr. Dan R. Jones Dept. of Curriculum & Instruction 618-974-8142 drdan@charter.net

Course Description

Content and methods of elementary school sciences, P-4. Emphasis on the materials and strategies for effective science education. Restricted to students already admitted to the Teacher Education Program. Prerequisite: Grade of C of better in SCI 210A, and SCI 210B.

Course Objectives

At the conclusion of the course, you will be...

1. Knowledgeable of and have developed skills needed to teach activity-based science classroom instruction.

2. Knowledgeable of science process skills and instructional strategies that promote hands-on learning activities.

3. Able to apply scientific literacy to science teaching in PreK-4 classroom settings.

4. Able to develop, design and teach Pre-K lessons using various strategies in classrooms and to your peers.

5. Knowledgeable of the ISBE New Science Standards and National Science Education Standards.

6. Able to discuss issues surrounding science curriculum and science education.

7. Knowledgeable of the science content for Pre-K instruction in biology and physical science disciplines.

Textbooks

2. Publisher science textbook (Kg-4) to be selected by student and approved by instructor.

Internet Sources: Illinois State Board of Education website isbe.net

Course Evaluation

1. In-Class Assignments (15) @ 1 pt each = 15 pts
2. Individual Lesson Plans (3) and Presentation = 20 pts
3. Unit Plan (1) = 15 pts
4. Science content presentation and/or demonstration (2) = 10 pts.
5. Microteaching Lessons to Peers (2) = 20 pts
6. Quizzes (3) and Final = 20 pts

| Course Grade: | A = 90-100 | B = 80-89 | C = 70-79 | D = 60-69 | F = below 60 |
Class Activities and Assignments

1. **In Class Assignments (15):** Class participation plus written or oral tasks covering content and materials that may or may not be presented in the text. This includes on-line resources, clinical experiences and opinion. Class participation is based on assigned reading; comments and responses in class discussions. It is not a matter of how much you talk but that your participation indicates you are reading the textbook.

2. **Individual Lesson Plans (3):** A separate EDUC 302 lesson plan format will be created for a science lesson in each of grades PreK, 1st or 2nd, 3rd or 4th (3 total). Parts 1 and 2 of the lesson plan will be created. One of lesson plans will be taught in your field experience classroom (1st or 2nd or 3rd). This can be the lesson that Dr. Jones observes for EDUC 302 or another lesson that is not observed by Dr. Jones.

3. **Unit Plan (1):** A 3-5 day Science Unit Plan with 3 separate lesson plans that are interrelated and sequentially build upon each plan. Written plan using assignment components and scored by rubric.

4. **Science Content Presentation and/or Demonstration (2):** You will select or be assigned science content topic from Biology, Chemistry, Physics or Earth Science to study and prepare a whole class presentation and/or demonstration. The purpose is to enhance your science content background for K-3 textbooks. You will write a summary handout for class to use and make a class summary presentation of 15 minutes. This is completed and presented by each student individually.

5. **Microteaching Lessons to Peers:** You will prepare and present a 15- 20 minute lesson to the entire class. You will select and use process skills instructional strategies from the textbooks (one or more) with content and activities appropriate for your subject and grade level selected. You will determine and locate materials from inexpensive sources (“Kitchen Table Science”), FOSS Kits or school resources.

6. **Quizzes (3) and Final Exam:** Content knowledge, process skills and science standards.

**Prepared for Class:** You are considered prepared for class if you have completed the reading assignment for that class, completed assignment(s) due for that class, and have studied for any quiz being given.

**Incomplete Grade (INC):** An INC grade is assigned when, for reasons beyond their control, students engaged in passing work is unable to complete all class assignments. Needs instructor’s approval. It is expected that the student will complete the course requirements to remove the INC by the end of fall semester 2016.

**Disruptive Behavior Policies:** The use of laptops, cell phones, MP3 players and other electronic devices for non-coursework purposes during class time is considered inappropriate, as well as reading newspapers, magazines and non-course materials during class time. As with any public forum, the classroom is a shared space where consideration and compassion for others is expected along with appropriate language and interpersonal and professional interactions.

**Late Work Policy:** Due dates will be established during course depending on progress in covering topics. Assignments not submitted by due date will be accepted one class period later without penalty.

**Attendance Policy:** Attendance at all classes is expected. If absence it necessary, class participation points are lost (1 point per class) and students are responsible for completing any in class work on their own (such as lost time for group work, individual research or Inquiry. Missed quiz are taken the next class.

**Cancellation of Class (Weather):** The Rend Lake College website (rlc.edu) will post closings due to weather. If RLC closes, then Marketplace is closed. So check RLC first. If the instructor cancels class, he will notify students by email on the day of class by 1:00 p.m. if weather requires cancellation. If
conditions are not safe where you are traveling, you can choose to not attend class without grade penalty. Contact instructor. Class time missed due to weather cancellation will not be made up.

**Mobile Technology Policy:** Students may bring and use their laptop computers during class meetings (wireless internet is available in Rm 336) and/or may use SIU Computer Lab (Rm. 308). Use of cell phone for texting or calls should be done outside of the classroom, for necessary communication and preferably during breaktime.

**Emergency Procedures:**
Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on the BERT's website at www.bert.siu.edu <http://www.bert.siu.edu/> , Department of Public Safety's website www.dps.siu.edu <http://www.dps.siu.edu/> (disaster drop down) and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

**Teacher Education Program**

The Teacher Education Program (TEP) at Southern Illinois University Carbondale is fully accredited by the National Council for the Accreditation of Teacher Education/ Council for the Accreditation of Educator Preparation (NCATE/CAEP) and by the Illinois State Board of Education. Spanning the entire university, the Teacher Education Program is administered through the College of Education and Human Services and includes majors from the College of Education and Human Services, the College of Science, the College of Liberal Arts, and the College of Agricultural Sciences. Teacher education programs approved by the State Educator Preparation and Licensure Board (SEPLB) are offered at the undergraduate level in early childhood education, elementary education, special education, secondary education, and in majors and minors that lead to the special certificate to teach K-12 art, music, physical education, and foreign languages.

Teacher Education Conceptual Framework:

**Preparing Reflective Educational Leaders**

The conceptual framework identified by Southern Illinois University Carbondale’s College of Education and Human Services reflects the professional community’s commitment to preparing reflective educational leaders at both the undergraduate and graduate levels. Reflective educational leaders are able to review, reconstruct, reenact, and critically analyze their own and their students’ performances as a means to formulate explanations with evidence. A reflective educational leader fosters his/her professionalism in practice when he/she values students’ myriad identities, equips students with the literacies required to participate in a democratic society, and engages stakeholders to make this learning accessible, rigorous, and relevant.

Our conceptual framework views the professional development of teachers and other educational personnel to be an evolutionary and maturational process. Our goal is to prepare a competent, reflective educational leader, ready to assume the responsibilities of educating individuals but with full awareness that his or her induction into the profession continues throughout the duration of his or her professional career. We believe that our teacher candidates not only practice reflective thinking but also become practitioners of reflective action. We believe that effective teaching is characterized by interactions with students to present subject matter, followed by informed reflection on these interactions and presentations. Teachers should make decisions among methods and content based on their competence in both subject matter and pedagogy, rather than acting as technicians following a
predetermined curriculum. All unit programs are aligned to the Illinois Professional Teaching Standards as well as standards from their respective content areas.

The model below represents the three major tenets of SIU’s Teacher Education Program: *Literacies, Identities, and Engagement:*

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**Literacies:**

*Reflective educational leaders* understand the vast array of literacies students need to function in today’s modern society. This includes knowledge of reading, writing, and aural communication within the content area as well as media, scientific and quantitative literacy (Chessin & Moore, 2004; Crowe, Connor, & Petscher, 2009; Cunningham & Stanovich, 2001; Delpit, 1995; Kear, Coffman, McKenna, & Ambrosio, 2000; Leinhardt & Young, 1996; McKenna & Kear, 1990; Moje, 2008; Perry, & Delpit, 1998; Shulman, 1987; Schwartz, 2005; Wilson, 2006; Wineburg, 2001).

**Identities:**

*Reflective educational leaders* understand the diverse characteristics and abilities of all students and how these students develop and learn within the context of their social, economic, cultural, linguistic, and academic experiences. Using these experiences they create instructional opportunities to maximize student learning (Brown, 2005; Cramer, 2006; Epstein, 2009; Irvine, 1997; Olsen, 2010; Rose & Meyer, 2002; Vygotsky, 1962/1996; Washburn, Joshi, & Binks-Cantrell, 2011).

**Engagement:**

*Reflective educational leaders* are ethical and reflective practitioners who exhibit professional engagement by providing leadership in the learning community and by serving as advocates for students, parents or guardians, and the profession (Amatea, Daniels, Bringman, & Vandiver, 2004; Bemak, & Chung, 2008; Hiebert, Morris, Berk, & Jansen, 2007; Keys, Bemak, Carpenter, & King-Sears, 1998; Lach & Goodwin, 2002; Ladson-Billings, 1995; McCann & Johannessen, 2008; Ratts, DeKruyf, & Chen-Hayes, 2007).
Dispositions

The professional attitudes, values, and beliefs demonstrated through verbal and nonverbal behaviors (dispositions) as educators interact with students, families, colleagues, and communities should support student learning and development. These dispositions are:

The candidate demonstrates professionalism:
- dependability and reliability
- honesty, trustworthiness, ethics
- enthusiasm, love of learning and commitment to the profession

The candidate values human diversity:
- shows respect and sensitivity to the learning needs and abilities of all individuals
- shows respect and sensitivity to the diverse cultures, languages, races, and family compositions of all individuals
- strives for best practices to address diverse learning needs and abilities of all individuals
- strives for best practices to address diverse cultures, languages, races, and family compositions of all individuals
- collaborates with diverse peers, professional colleagues, staff and families

The candidate develops professionally:
- engages in ongoing acquisition of knowledge
- engages in development of research-based practices
- assesses own performance and reflects on needed improvements