



### Course Syllabus

<b>COURSE NUMBER:</b> EDUC 3560 01/02	<b>COURSE TITLE</b> Methods of Teaching Science: Elementary, Middle	<b>TERM:</b> Spring 2007
<b>SITE:</b> Long Elementary School	<b>INSTRUCTOR CONTACT INFORMATION:</b> J. Carrie Launius <a href="mailto:janetcarrie@gmail.com">janetcarrie@gmail.com</a> 314 – 729.2400 ext 5021	<b>CREDIT HOURS:</b> 3

**1. COURSE DESCRIPTION:** Science Methods prepares pre-service teachers by focusing on methods and techniques of good science instruction. Students will focus on designing and implementing instructional strategies that are congruent with state and national standards.

### 2. LEARNING OUTCOMES

Students will:	
❖ Define, identify and implement inquiry based learning strategies.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E
❖ Use information technology strategies and essential questioning techniques.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 4.1, 4.2, 4.3 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E
❖ Define Marzano’s learning strategies and describe how each can be infused in good science instruction.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E, F
❖ Write a unit plan following the Webster University format.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E, F
❖ Write weekly reflections examining what was learned and discussing implementation.	SOE 3.1, 3.2 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: C, D, E

❖ Create and design a portfolio of science.	
❖ Recognize how to infuse science disciplines with each other.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4,2,3, 2.4, 3.3, 3.4 National Science Standard: A, B, C, D, E
❖ Constructs a lab and demonstrates in class.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E
❖ Utilize techniques infusing state and national standards.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E
❖ Examine texts with a critical eye.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, B, C, D, E, F
❖ Assess one’s own work with specific criteria.	SOE 1,1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: C, D, E
	SOE 3.1, 3.2 Dispositions: 1.3, 1.4, 2.4, 3.4 National Science Standard: A, D, E, F <i>All objectives coincide with standards on the MO MAP placement</i>

**3. Schedule of required readings, class preparations and assignments, lectures, discussions, student presentations, out-of-class assignments and exams. (Insert schedule below; the box will expand as you type.)**

**Meeting Dates: January 22, 29, February 5, 12, 26, March 5, 19, April 2, 9, 16, 23, 30, May 7 – Final  
Additional Meeting Dates: March 28, 29, 30, 31 time TBA**

**Class 1 – Syllabus, What is Elementary Science? How does one learn science? How do “I” learn best? Recollections of personal science experiences, 5 E’s (constructivism, learning cycle) scientific method, Who is Robert Marzano? Backwards Design, National Science Standard!  
Assign portfolio of science due 2/12, reflections, Great Oreo Investigation**

**Class 2 – The Great Oreo Investigation – connection science to self and world  
Assign reflection and lab 2/5**

**Class 3 – lab practice  
Assessment  
Assign reflection and choose topic and group for unit plan**

**Class 4 – Portfolio presentations  
For what are we accountable in science?  
Assign reflection**

**Class 5/6 unit plan  
Assign reflection after each class and Unit due March 19**

**Class 7 & 8 will be made up the week of March 26, 2007 (Dr. King Day and Presidents’ Day)**

**Spring Break**

**Class 9 – Essential Questions, Big 6  
Assign Big 6 due April 23 and reflection**

**Class 10 - NSTA**

**Class 11 – Infusion CA in science instruction, Examining the science text**

**Class 12 – 13 (TBA closer to date, contingent on weather  
Guest Speaker – Doloris Pepple  
Outdoor Classrooms  
Big 6**

**Class 14 – 15 Big 6 Presentations**

**Class 16 - Final**

#### 4. RESOURCES:

*Required Text(s):* (Insert text information below; box will expand as you type.)

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#### 5. EVALUATION: (basis of evaluation with explanation regarding the nature of the assignment and the percentage of the grade assigned to each item below)

(Insert evaluation Criteria below; the boxes will automatically expand as you type.)

Assessments	Links to Course Outcomes	Points
Portfolio		50
Lab		25
Unit		50
Big 6		50
Reflections		60
Final		50
Attendance		70
		355 total

#### 6. GRADING SCALE: (Insert grading scale criteria below; the box will automatically expand as you type.)

Percentage	Points
93 – 100 A	355 – 330
90 – 92 A-	329 – 319
89 – 88 B+	318 – 312
87 – 83 B	311 – 295
82 – 80 B-	294 – 284
79 – 70 C	283 – 248
69 – 60 D	247 – 214
Below 60 or 213 points–	no credit

**Note: ALL PAPERS/PROJECTS MAY BE RETURNED VIA A SELF-ADDRESSED, STAMPED ENVELOPE. PAPERS ARE NOT AVAILABLE FOR PICK-UP IN THE SoE OFFICE.**

Attendance in this course is mandatory. If a student is going to be absent, s/he must submit a note by e-mail before the beginning of class in which they are not going to miss. Any student that misses class for any reason will result in grade reduction. Family vacations or travel are not considered an excused absence. Attending or participating in sporting events, concerts, plays, or performances is also not an excused absence.

## ACADEMIC HONESTY POLICY

**Students at Webster University are expected to practice academic honesty.**

### **Avoiding Plagiarism**

Plagiarism is intentionally claiming that another person's work is his/her own or implying that another person's work is his/her own (through inadequate or inaccurate citations of reference material.)

#### **Students:**

- Should not copy whole portions of text from another source as a major component of papers or projects.
- Should identify the title, author, page number/webpage address, and publication date of works when directly quoting small portions of texts, articles, interviews, or websites.
- Should appropriately identify the source of information when paraphrasing (restating) ideas from texts, interviews, articles, or websites.
- Should follow the guidelines of the American Psychological Association Style Guide when referencing all research sources.

#### **Consequences of Academic Dishonesty:**

#### **No Credit**

For further information about the consequences of academic dishonesty please consult the Webster University Student Handbook.

## ACCESSIBILITY/ACCOMMODATIONS POLICY

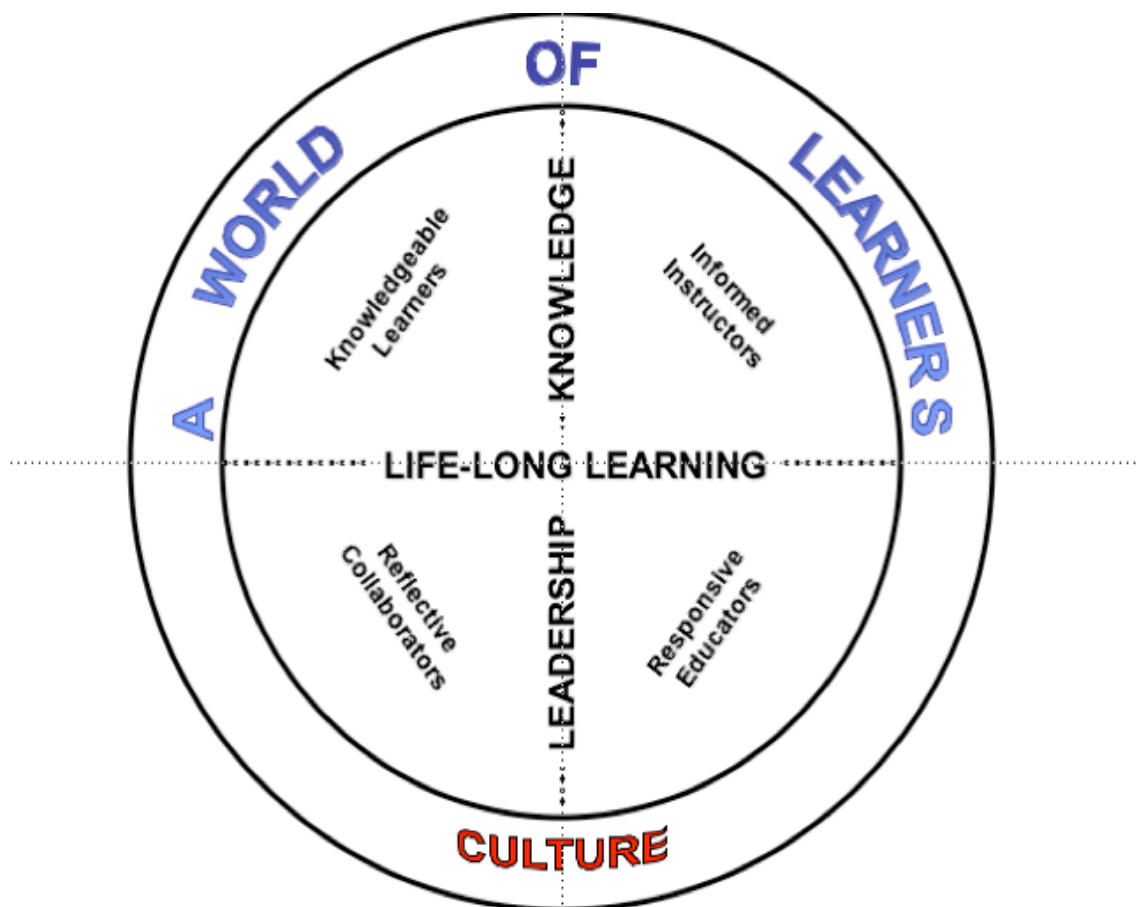
If you have a disability that may have some impact on your work in this class and for which you may require accommodations contact the Director of the Academic Resource Center, Dr. Pat McLeese, at (314) 968-7495.

**Webster University  
School of Education**

**Vision:** “. . . We all must work to make this world worthy of its children.” (Casals, 1970)

**Mission:** The School of Education at Webster University provides its students with the knowledge, experiences, and practical tools that help them guide both themselves and others toward lifelong learning. The School of Education is a community of educator-scholars who apply critical reflections and creative energies to enhance learning in schools and other educational settings. The faculty strives to support this community by modeling effective teaching practices based on sound theory and research. Personalized approaches create a challenging, yet supportive environment that permits the risk-taking necessary for learning and growth. The School of Education encourages its faculty and students to work actively toward this end, keeping in mind that action must be rooted in visionary, yet realistic, thinking. This thought and action process underscores the development of an inner-directed self-understanding, an outer-directed global perspective, and an appreciation of human diversity that arises from both.

**Theme:** Developing a world of learners through knowledge, leadership, and life-long learning.



The universal mandala (a circle with intersecting vertical and horizontal lines) graphically represents the conceptual framework of the School of Education. The outer circle provides the framework for a “world of learners” in cultural settings. The two axes represent the theme components of knowledge, leadership, and life-long learning. These lines are broken to emphasize the fluid relationship of the goals and integrated concepts. Each quadrant represents one of the school’s four goals for its candidates: to develop knowledgeable learners, informed instructors, reflective collaborators, and responsive educators.

## School of Education Goals

1. Education candidates will demonstrate knowledge of the subject matter, knowledge of the learner, and knowledge of pedagogy based on inquiry and scholarship.

### The knowledgeable learner:

- 1.1 knows content that supports conceptual understanding;
  - 1.2 applies tools of inquiry to construct meaningful learning experiences;
  - 1.3 identifies developmental factors in student learning; and
  - 1.4 understands theoretical principles of effective instruction to plan learning experiences.
2. Education candidates will incorporate multiple assessment and instructional strategies to support effective educational practices based on research and theory.

### The informed instructor:

- 2.1 designs curriculum based on students' prior knowledge, learning styles, strengths, and needs;
  - 2.2 understands and uses a range of instructional strategies;
  - 2.3 uses a variety of communication modes, media, and technology to support student learning; and
  - 2.4 employs a variety of formal and informal assessments to monitor learning and modify instruction.
3. Education candidates will reflect on the roles educators take as leaders of change through collaboration with colleagues, students, and families in schools and communities.

### The reflective collaborator:

- 3.1 values and integrates reflection to grow as a professional;
  - 3.2 promotes communication and collaboration with colleagues, families, and community leaders;
  - 3.3 seeks relationships with families and students to support student learning; and
  - 3.4 initiates change that benefits students and their families.
4. Education candidates will demonstrate respect for diversity through responsive teaching and learning that values individual differences.

### The responsive educator:

- 4.1 understands and responds appropriately to issues of diversity
- 4.2 acknowledges social and cultural contexts to create effective teaching and learning environments;
- 4.3 adapts instruction to the learner's knowledge, ability, and background experience; and
- 4.4 identifies resources for specialized services when needed.

## School of Education Dispositions

NCATE defines dispositions as "the values, commitments and professional ethics that influence behaviors toward students, families, colleagues, and communities and affect student learning, motivation, and development as well as the educator's own professional growth. " (Professional Standards, p. 53) There is significant value in focusing attention on qualities that make an effective teacher.

1. Understands and Respects Self
  - 1.1 Understands and respects that s (he) may be different from others
  - 1.2 Embraces an openness to change (adaptability, flexibility)
  - 1.3 Exhibits curiosity
  - 1.4 Engages in reflection
2. Understands and Respects Others
  - 2.1 Understands, respects, and responds appropriately to diversity in a variety of settings
  - 2.2 Exhibits empathy
  - 2.3 Commits to fairness and honesty
  - 2.4 Listens respectfully to other points of view

3. Understands and Respects Professional Communities
  - 3.1 Commits to professional behavior in university and school cultures
  - 3.2 Practices informed decision-making in university and school cultures
  - 3.3 Communicates and collaborates in university and school cultures
  - 3.4 Accepts academic rigor (willingness to work/ high expectations)
  - 3.5 Affects change with courage and confidence