

University of North Texas at Dallas Summer 2013 SYLLABUS

| EDEE 4330: Teaching Science EC-6 | |
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| Department of | Teacher Education |
| Division of | Education and Human Services |
| Instructor Name: | Dr. Ratna Narayan |
| Office Location: | 201 N Dallas 1 |
| Office Phone: | 972 780 1340, Cell: 806 252 5277 |
| Email Address: | Ratna.narayan@unt.edu |
| Office Hours: | By appointment or 11:30-1:20pm Mon, Tue, Thursday |
| Virtual Office Hours: | |
| Classroom Location: | UNT Dallas |
| Class Meeting Days & Times: | Mon, Tue, Thursday, 1:30-4:20pm |
| Course Catalog Description: | The purpose of this course is to provide teacher candidates with the subject matter, background, and material organization for an integrated science program in the primary/elementary school. Students experience first-hand the scope and sequence of science education in a primary/elementary/middle school setting. |
| Prerequisites: | |
| Co-requisites: | |
| Required Text: | NA |
| Recommended Text and References: | Articles will be uploaded on Blackboard as and when required. |
| Access to Learning Resources: | UNT Dallas Library: phone: (972) 780-3625; web: http://www.unt.edu/unt-dallas/library.htm UNT Dallas Bookstore: phone: (972) 780-3652; e-mail: 1012mgr@fheg.follett.com |
| Course Goals or Overview: | |
| | <p>The goal of this course is provide teacher candidates with the knowledge, skills and dispositions as a basis for making decisions in respect to teaching elementary school science.</p> <p>The knowledge, skills and dispositions developed in this course are delineated in a variety of ways, including student learning outcomes, assessments, assignments, and various course activities. They are also developed in a manner consistent with recommendations of the National Research Council's National Science Education (NSES) and National Science Teachers Association (NSTA) Standards, requirements of the Texas State Board for Educator Certification (TEKS) and Interstate New Teacher Assessment and Support Consortium (INTASC) standards.</p> |
| Learning Objectives/Outcomes: | At the end of this course, the student will |

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| 1 | Be able to demonstrate the use of instructional strategies and teaching activities to teach the science content knowledge included in Texas' Essential Knowledge and Skills (The TEKS). TEKS |
| 2 | Learn to teach science activities or lessons at the elementary level by a variety of approaches (discovery, inquiry, decision-making, and problem solving) and in a variety of grouping arrangements. TEKS, NSES & INTASC standards |
| 3 | Plan and teach elementary science activities and lessons with adaptations for minority populations and students with special needs TEKS, NSES & INTASC standards |
| 4 | Learn to apply technology to elementary school science by identifying, describing, and using instructional software, Internet and other computer applications than would enhance instruction. TEKS, NSES & INTASC standards |
| 5 | Complete classroom observations and related tasks in field-based settings. TEKS, NSES & INTASC standards |
| 6 | Plan science activities and lessons and teach them to students in field-based settings TEKS, NSES & INTASC standards |
| 7 | Plan lessons that integrate mathematics, science, language arts and social studies and the arts (visual art, music, and theatre arts) around a particular theme TEKS, NSES & INTASC standards |
| 8 | Use reflective analysis to improve their teaching. TEKS, NSES & INTASC standards |
| 9 | Integrate the various areas of science as well as integrate science with other subject areas at the elementary level, as well as teaching science integrating visual media, arts, music and drama TEKS, NSES & INTASC standards |

Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated both verbally in class as well as through Blackboard

| TOPICS | TIMELINE | Due |
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| Nature of Science and Science Process skills Introduction to Field-Based Experiences and Teaching Science in the Elementary School, examining TEKS, TAKS and NSES standards. Content integration in the EC-6 classroom TEKS: K-6 (a) Nature of Science NSES / NSTA: Standards for Science Teaching EC-6, Chapter 3 Standard 2 – Nature of Science INTASC: Standard 2 - Student development, Standard 4- Multiple Instructional Strategies INTASC: Standard 1 – Content Pedagogy | June 3 rd 2013 | |
| The Scientific Method, Inquiry-based Science teaching and Learning. TEKS: K-6 (0.1-0.4) Science Process / Inquiry NSES / NSTA: Inquiry and the National Science Education Standards Standard 3 - Inquiry INTASC: Standard 1 – Content Pedagogy | June 4 th 2013 | 5 th grade online Science TAKS test |
| Constructivism in the Elementary Classroom Planning and Teaching Science: Activities, Lessons, and Units, 5E model, Hands-on activity, Visual Organizer, Extension activity, Formative and Summative Assessments, Administration and Arts Integration (e.g., scientific illustration, using science trade books [language arts literacy]), dramatic performance [skits/historical science | June 6 th 2013 | |

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| <p>leader role play], and music. TEKS: K-6 (0.5 – 0.14) Science concepts NSES /NSTA: Standards for Science Teaching EC-6 Chapter 3, Standards for Science Content EC-6 Chapter 6 Standard 5 – General Teaching Strategies INTASC: Standard 2: Planning Standard 7- Planning</p> | | |
| <p>Science Safety in the Elementary Classroom, MSDS sheets, safety contracts TEKS: K-6 (0.1) The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. NSES / NSTA: Safety and School Science Instruction Standard 9 – Safety & Welfare INTASC: Standard 6 – Communication & Technology, Standard 7 - Planning</p> | <p>June 10th 2013 Monday</p> | |
| <p>Assessment in the Science Classroom TeXes, PPR, Content exams TEKS: The TEKS and the TAKS tests NSES / NSTA: Assessment in Science Education, Chapter 5 Standard 8 - Assessment INTASC: Standard 8 - Assessment</p> | <p>June 11th 2013</p> | |
| <p>Professional development opportunities for elementary science teachers TEKS: K-6 (0.5 – 0.14) Science concepts NSES /NSTA: Standards for Professional Development of Teachers of Science, Chapter 4 Standard 10 – Professional growth INTASC: Standard 9 – Reflective Practice, Professional development</p> | <p>June 13th 2013</p> | |
| <p>Multicultural Science Education TEKS: K – 6 (0.3) Science Process, connect science concepts with the history of science and contributions of scientists NSES / NSTA: Diversity and the National Science Education Standard 5 – General skills of teaching INTASC: Standard 3 – diverse learners</p> | <p>June 17th 2013 Monday</p> | <p>Multicultural scientist presentation</p> |
| <p>Use of Models in the elementary science classroom Student Science Model Presentations TEKS: K-6 (a) Use of models of objects and events as tools for understanding the natural world and to show how systems work NSES / NSTA: Standards for Science Teaching EC-6 Chapter 3, Standard 5 – General skills of teaching INTASC: Standard 4- Multiple Instructional Strategies</p> | <p>June 18th 2013</p> | <p>Science model from recyclable material</p> |

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| <p>Science Society and Technology TEKS: K – 6 (0.4,0.5) Science Process NSES / NSTA: Inquiry and the National Science Education Standards, Benchmark 3A Standard 5 – General skills of teaching INTASC: Standard 6 – communication and technology</p> | <p>June 20th 2013</p> | |
| <p>Scientific Literacy, reading and writing science, science notebooks TEKS: K-6 (0.3) Science Process NSES / NSTA: National Science Education Standards, an overview Standard 3 - Inquiry Standard 5 – General skills of teaching INTASC: Standard 1: Content Pedagogy</p> | <p>June 24th 2013 Monday</p> | <p>Science in everyday life presentation</p> |
| <p>Controversial issues in science and science teaching TEKS: K-6 (0.4,0.5) Science Process NSES / NSTA: National Science Education Standards, an overview Standard 4 – Issues INTASC: Standard 1: Content Pedagogy Standard 10 – School and community involvement</p> | <p>June 25th 2013</p> | <p>Controversial issues presentation</p> |
| <p>Action research in the elementary science classroom TEKS: K-6 (0.5 – 0.14) Science concepts NSES / NSTA: Standards for Science Teaching EC-6 Chapter 3, Standards for Professional Development of Teachers of Science, Chapter 4 Standard 10 – Professional growth INTASC: Standard 9 – Reflective Practice, Professional development</p> | <p>June 27th 2013</p> | |
| <p>Technology in the elementary science classroom TEKS: K – 6 (0.4,0.5) Science Process NSES / NSTA: Inquiry and the National Science Education Standards, Benchmark 3A Standard 5 – General skills of teaching INTASC: Standard 6 – communication and technology</p> | <p>July 1st 2013 Monday</p> | |
| <p>Lesson presentations</p> | <p>July 2rd 2013</p> | |
| <p>Final Exam</p> | <p>July 5th 2013</p> | |
| <p>All assignments due by 12 noon July 6th 2013</p> | | |

Course Evaluation Methods

The course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course

Assignments –

1. Weekly Activities– Readings and other activities such as the science story that are assigned weekly throughout the semester.
2. Reflection Papers– Reflective writings that serve to integrate your experiences in the classroom and in the field during the semester.
3. Field-based activities such as –

preparing and teaching a science concept with a working science model you have designed and constructed,
 teaching a small group of students a science concept using hands-on inquiry based activities, Visual Organizer, Extension activity, Formative and Summative Assessments, Administration and Arts Integration (e.g., scientific illustration, using science trade books [language arts literacy]), dramatic performance [skits/historical science leader role play], and music.

designing a science fair experiment, conducting and presenting it to your peers in the classroom as well as in the field

Science in everyday life presentation

4. Preparing rubrics for assessment activities

Please note: All the assignments are CULPULSORY. I expect you to complete all the assignments in a timely fashion. There will be no substitutions unless I approve of them. Professional development opportunities will be offered; if you are unable to avail of these an alternate assignment will be provided.

Class Participation – Expectations

1. ATTENDANCE - Attend all classes, meetings, etc. arriving on time.
2. PREPARATION - Be prepared to discuss assigned readings and submit assignments according to established deadlines.
3. PARTICIPATION - Contribute constructively and respectfully to all discussions and activities.
4. RESPECT – Do not talk while the teacher or another presenter is speaking.
5. ACADEMIC HONESTY - Know and follow course, departmental, program and university policies on assignments and assessments.
6. PROFESSIONALISM - Know and follow departmental, program and university policies expected of PDS students.
7. Participation and Professionalism – CRITICAL!
 - a. Absences and tardies will count toward final grade reduction: 2 absences = one final grade reduction, 4 absences = two final grade reductions, 5 absences = three grade reductions.
 - b. Three tardies = 1 absence. (Tardy - must arrive within the first 10 minutes of class)
 - c. Completes assigned readings before coming to class
 - d. Answers questions and participates in class discussions
 - e. Avoid social or unrelated conversation, working on other assignments, using cell phone, checking email, surfing web, playing video games during class time etc.
8. I will endeavor to offer a professional development opportunity during the spring 2013 semester. More details to follow.

Grading Matrix:

| Instrument | Point Value | Total |
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| Reflection papers / assignments | 10 x 10 | |
| -Science model, develop and teach and present | 40 | |
| - group science lesson presentation (TK 20 key assignment) | 40 | |
| - science in everyday life presentation | 40 | |
| -Checkpoint 2 section 1 | 30 | |
| | | 250 |

Grade Determination:

- A = 250 - 225 points
- B = 224 – 200 points
- C = 199 – 175 points
- D = 174 – 150 points
- F = below 150 points

University Policies and Procedures

Students with Disabilities (ADA Compliance):

The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Students' with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation. For more information, you may visit the Office of Disability Accommodation/Student Development Office, Suite 115 or call Laura Smith at 972-780-3632.

Student Evaluation of Teaching Effectiveness Policy:

The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.

Assignment Policy:

Reflection papers must be uploaded to Blackboard by noon the day of class. All other assignments should be submitted in an assignment folder. Put your name, course and contact information on the upper right front cover. Use this folder to submit assignments for grading. I will review the assignment and return the folder to you. Late assignments will result in a 5 point reduction for each day late.

If I am not satisfied with an assignment response, I reserve the right to deduct points and return it to you so you may improve on it and resubmit to get some of the deducted points back if the work is deemed satisfactory. All assignments are due by 12 noon July 6th 2013 after which NO assignments will be accepted or graded.

Exam Policy:

Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook).

Academic Integrity:

Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of conduct and Academic Dishonesty policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Conduct at http://www.unt.edu/csrr/student_conduct/index.html for complete provisions of this code.

Please take the time to go through this link. If I find you have plagiarized from any source without giving them due credit I will give you a zero for that assignment.

Bad Weather Policy:

On those days that present severe weather and driving conditions, a decision may be made to close the campus. In case of inclement weather, call UNT Dallas Campuses main voicemail number (972) 780-3600 or search postings on the campus website www.unt.edu/dallas. Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

Attendance and Participation Policy:

The University attendance policy is in effect for this course. Class attendance and participation is expected because the class is designed as a shared learning experience and because essential information not in the textbook will be discussed in class. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. **Students are responsible to notify the instructor if they are missing class and for what reason. If I have not heard from you and receive supporting documentation for your absence, I shall consider it an unexplained absence. Two such absences will**

reduce your overall grade by a letter grade irrespective of the points you might make. Students are also responsible to make up any work covered in class. It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent. If you have missed a class, please make an appointment to meet me so we can determine what needs to be done to make up the lost time.

Diversity/Tolerance Policy:

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Center for Student Rights and Responsibilities as the instructor deems appropriate.

Optional Policies:

Use of WebCT/Blackboard

I will expect you to use Blackboard to upload your reflection papers and I will give you feedback on those on Blackboard. Please monitor these for additional comments I give or information I require.

Use of Cell Phones & other Electronic Gadgets in the Classroom

Please do not use your cell phones in class. If it is an emergency, I will permit you to leave class and take the call. **If I see you texting or playing videogames or checking your email in class I will drop you a letter grade.**

Food & Drink in the Classroom

I do not mind food and drink in the classroom, however when we are conducting an activity, I will expect all food and drink to be put away immediately. All food and drinks must be properly disposed of.

Use of Laptops

If I need you to use a laptop during class I will take you to the computer lab.

Grade of Incomplete, "I"

A grade of incomplete, "I" will be given only under extenuating circumstances.