Instructor: Sarah Smitherman Pratt, Ph.D.
Semester: Spring 2012
Location: Matthews 108
Class Dates and Times: Tuesday & Thursday, 3:30 – 4:50 p.m.
Blackboard: Course is housed under UNT’s new BB system: https://learn.unt.edu
Office: Matthews 204-M
Phone: 940.565.2030 (office); 225.788.4688 (cell)
E-mail: sarah.pratt@unt.edu (Note: Please allow up to 24 hours for a response.)
Office Hours: Tuesdays & Thursdays, 9:00 a.m.–12:00 p.m.; or by appointment

Catalog Description: Offers candidates a constructivist approach to helping students develop a knowledge of mathematics in grades 4–8. Teaching strategies are presented with developmental activities that are used with middle grade students. Students reflect on what it means to teach mathematics and explore the factors that influence teaching.

Prerequisites: Admission to the teacher education program, which includes participation in a field-based program for the middle grades in mathematics; EDEE 3320; required core and academic major math courses and EDEC and DFST classes.

Course Goals: This course is designed to develop reflective teaching practices in mathematics. The student will be exposed to a wide range of issues and theories in mathematics curriculum, and encouraged to relate these to his/her own teaching practices. Opportunities for teaching and observation of teaching will be provided in order to analyze and reflect on teaching practices in mathematics. The course encourages students to make meaningful connections between theory and practice through a variety of experiences.

Required Texts:
National Council of Teachers of Mathematics – Prospective Trial Membership (http://www.nctm.org/resources/sampler/)
- Sign up for student membership by end of course for $39
- Mathematics Teaching in the Middle School is a useful reference for this course. This journal series from NCTM is located in the library and also available on-line.

TK20 Requirement
This course requires an assignment that will be uploaded and graded in the UNT TK20 Assessment System. This will require the one-time purchase of TK20. Student subscriptions will be effective for seven years from the date of purchase. Key assignments must be uploaded into Tk20 for instructors to assess. Please go to the following link for directions on how to purchase TK20. http://www.coe.unt.edu/tk20

Electronic Resources:
National Council of Teachers of Mathematics: www.nctm.org
Math TEKS: http://www.tea.state.tx.us/rules/tac/chapter111/index.html
Access to Blackboard – required: https://learn.unt.edu
Bloom’s Taxonomy: http://en.wikipedia.org/wiki/Bloom’s_Taxonomy
<table>
<thead>
<tr>
<th>Students will be able to...</th>
<th>Evidence of Student Learning: (Assignment)</th>
<th>Middle School Mathematics TEKS, Texas Pedagogy and Professional Responsibility Standards, UNT Conceptual Framework, &amp; INTASC Standards</th>
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</thead>
</table>
| Critically discuss current perspectives in middle school mathematics Curriculum | • In Class Activities  
| Reflect on their current teaching practices and the influence of these practices in student learning. | • In Class Activities  
• Reading Responses  
• Tutoring Project  
• Concept Report  
• Final Project-Justification Paper | (6.b.11.A, 7.b.12.A, & 8.b.13.b; Domain 3: Competency 010; Communication & Professionalism; INTASC 4, 5, 6, 9, & 10) |
| Develop appropriate assessment techniques that inform instructional practice and support student learning. | • In Class Activities  
• Tutoring Project  
• Concept Report  
• Final Project-Unit Plan | (Domain I: 002, 003, 004; Content, Diversity, Equity, Pedagogy; INTASC 1, 2, 3, 4, 5, 6, 7, 8, 9, 10) |
| Acquaint students with various types of manipulatives and other concrete materials available for modeling and developing concepts in middle level mathematics. | • In Class Activities  
• Concept Report  
• Final Project –Unit Plan | (6.b.11.D, 7.b.12.D, & 8.b.14.D, Domain I: Competency 001, 004; Pedagogy; INTASC 1, 4, 5, 6, 7, 8) |
| Engender skills of effectively implementing middle level mathematics curriculum | • In Class Activities  
• Tutoring Project  
• Concept Report  
• Final Project- Unit Plan | (6.b.1-10, 7.b.1-11, & 8.b.1-13; Domain I: Competency 003, Domain II: Competency 005; Content; Equity, & Pedagogy; INTASC 1, 4, 5, 6, 7, 8, 9, 10) |
| Develop facility with a variety of calculator and computer applications appropriate for the middle level mathematics classroom. | • In Class Activities  
| Introduce students to a variety of teaching approaches for middle level school mathematics. | • In Class Activities  
• Reading Responses  
• Tutoring Project  
• Concept Report  
• Final Project | 6.b.12.A, 7.b.13.A, & 8.b.15.A; Domain I: Competency 004, 006; Pedagogy; INTASC 1, 4, 5, 6, 7, 8) |
Students will be able to... | Evidence of Student Learning: (Assignment) | Middle School Mathematics TEKS, Texas Pedagogy and Professional Responsibility Standards, UNT Conceptual Framework, & INTASC Standards
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Become acquainted with mathematics in a broader cultural context. | • In Class Activities  
• Reading Responses  

Course Requirements:
All written items should include a professional standard of spelling, grammar and punctuation. Cohesion of thought, clarity of expression, depth of reading, analysis of issues and relevance of discussion will need to be evident. Use of appropriate referencing style, use of headings and subtitles if necessary and reference list will be standard requirements for each assignment.

Evaluation and Grading System:
1. Weekly Engagement 10%
2. Reading Responses 25%
3. Problems of the Week 5%
4. Tutoring Project 20%
5. Concept Report 20%
6. Final Project 20%

A = 90-100%  B = 80-89%  C = 70-79%  D = 60-69%  F = 0-59%

Weekly Engagement
To be effectively engaged in this class you will need to:
- Be prepared by reading and reflecting on assigned material each week.
- Show involvement in class through participation in class discussion.
- Demonstrate purposeful engagement with activities during class time.

Participation will be graded weekly on a 5-point scale, as follows:
- Daily Grade of 2 points for participating in the activities in class (x 2 days per week)
- Engagement grade of 1 point for leading class in a discussion, activity or assessment
- The week of March 13 will be a special grade to prepare and conduct the Pi Day Project.

Per departmental policy, attendance is mandatory. Because this course meets weekly, the following policy is in effect:
- 3 absences = final grade in the course will be lowered by one full letter grade
- 5 absences = final grade in the course will be lowered by two full letter grades
- 7 absences = F in the course
- 3 tardies = 1 absence, this means arriving late and/or leaving class early

Reading Responses
Each week you are expected to post a one paragraph response that addresses ALL of the readings assigned and addresses the prompt. Each response must include at least one quote from one of the provided articles, and it is to be submitted electronically on Blackboard Discussion Board by 8:00 a.m. the day of class. Any posts after deadline will not be accepted. These reading responses are graded on a 3-point rubric as follows:
- 3 – 1) Response addresses the prompt with references to the readings for the week, and when appropriate, earlier readings; 2) Opinions, observations, and/or past experiences are thoughtfully related to the readings throughout the response; 3) At least one quote from the readings is provided and connects directly to response. Overall, it is clear that you have read the assignment and understand the main idea conveyed.
• 2 – One of the following is not addressed: – 1) Response addresses the prompt with references to the readings for the week, and when appropriate, earlier readings; 2) Opinions, observations, and/or past experiences are thoughtfully related to the readings throughout the response; 3) At least one quote from the readings is provided and connects directly to response. Overall, you may have fully read the assignment and may understand the main idea conveyed.

• 1 – Two of the following are not addressed: – 1) Response addresses the prompt with references to the readings for the week, and when appropriate, earlier readings; 2) Opinions, observations, and/or past experiences are thoughtfully related to the readings throughout the response; 3) At least one quote from the readings is provided and connects directly to response. It is not clear that you read the assignment or understand the main idea conveyed.

• 0 – No response is submitted.

Problems of the Week
Students will be required to sign up to submit a problem of the week twice during the semester. When it is the student’s designated week, that student will create a new discussion thread on Blackboard under POW and will post the problem of the week, no later than before class on Tuesday before the next class on Thursday. Name the discussion thread POW #() that coordinates with the calendar. Every student is expected to bring an attempted written solution to the problem(s) on that Thursday of the same week, which will be checked by the instructor during class time. (The person who submits the POW must bring the actual solution.) At the end of the course, all POW’s will be submitted in writing to the instructor. Each individual will be assessed according to a timely submission of two problems and their solutions, weekly written attempts of solutions, and correct solutions to all of the problems.

Tutoring Project
This assignment is designed to develop the pre-service mathematics teacher’s ability to correctly diagnose and rectify student misconceptions and inconsistencies outside of the classroom. The pre-service mathematics teacher must identify a target mathematics concept or process to address in a series of mini problem-based activities that meet the needs of students that require extra assistance. The pre-service teacher will be required to consult with his/her mentor teacher prior to implementation of project. See Blackboard for due dates and rubric.

Concept Report
This is an opportunity for you to become an “expert” with respect to a particular mathematical concept, to learn about research materials to extend your thinking of many concepts (not just the one researched), and to lead others in expanding their own thinking. The report will be in two parts: 1) two articles will be selected that relate to a particular mathematical concept, and an abstract will be submitted to accompany each article; 2) presentation to class will include conducting a professional development workshop that relates to the concept researched. See Blackboard for due dates and rubric.

Final Project
The final project is a cumulative report that includes two major parts – a unit plan and a justification paper. The rubric for the requirements is given below. The final is due, on Blackboard, no later than the start time of the officially scheduled final exam time. See Blackboard for due dates and rubric.

Schedule (* Topics Subject to be Rearranged at the Discretion of the Instructor):

<table>
<thead>
<tr>
<th>Week (Dates)</th>
<th>Tuesday:</th>
<th>Thursday:</th>
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<tbody>
<tr>
<td>#1 (01/17 &amp; 19)</td>
<td>Quick Draw; Syllabus; NCTM Standards; Pedagogical focus: non-routine tasks</td>
<td>POW; Concept focus: base systems; MKT assessment; Activity analysis</td>
</tr>
<tr>
<td>#2 (01/24 &amp; 26)</td>
<td>QD; Discussion of reading; Pedagogical focus: concept study</td>
<td>POW; Concept focus: rational numbers; MKT assessment; Activity analysis</td>
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<tr>
<td>#3 (01/31 &amp; 02/02)</td>
<td>QD; Discussion of reading; Pedagogical focus: manipulatives</td>
<td>POW; Concept focus: expressions; MKT assessment; Activity analysis</td>
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<td>#</td>
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<td>Topic</td>
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<tr>
<td>#4</td>
<td>02/07 &amp; 09</td>
<td>QD; Discussion of reading; Pedagogical focus: mathematical arguments</td>
</tr>
<tr>
<td>#5</td>
<td>02/14 &amp; 16</td>
<td>QD; Discussion of reading; Pedagogical focus: manipulative analysis</td>
</tr>
<tr>
<td>#6</td>
<td>02/21 &amp; 23</td>
<td>QD; Discussion of reading; Pedagogical focus: meaning-making</td>
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<tr>
<td>#7</td>
<td>02/28 &amp; 30</td>
<td>QD; Discussion of reading; Pedagogical focus: listening</td>
</tr>
<tr>
<td>#8</td>
<td>03/06 &amp; 08</td>
<td>QD; Discussion of reading; Pedagogical focus: technology</td>
</tr>
<tr>
<td>#9</td>
<td>03/13 &amp; 15</td>
<td>QD; Discussion of reading; Pedagogical focus: interdisciplinarity; Concept focus: irrational #’s</td>
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<tr>
<td>#10</td>
<td>03/27 &amp; 29</td>
<td>QD; Discussion of reading; Pedagogical focus: modeling</td>
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<tr>
<td>#11</td>
<td>04/03 &amp; 05</td>
<td>QD; Discussion of reading; Pedagogical focus: epistemologies &amp; pedagogies</td>
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<tr>
<td>#12</td>
<td>04/10 &amp; 12</td>
<td>QD; Discussion of reading; Pedagogical focus: conceptual understanding</td>
</tr>
<tr>
<td>#13</td>
<td>04/17 &amp; 19</td>
<td>QD; Discussion of reading; Pedagogical focus: conceptual understanding</td>
</tr>
<tr>
<td>#14</td>
<td>04/24 &amp; 26</td>
<td>QD; Discussion of reading; Pedagogical focus: problem-centered learning</td>
</tr>
<tr>
<td>#15</td>
<td>05/01 &amp; 03</td>
<td>Concept Report Presentations</td>
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**Teacher Education & Administration**

**Departmental Policy Statements**

**DISABILITIES ACCOMMODATION**

“The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities.” If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940.565.4323 during the first week of class.

**ACADEMIC INTEGRITY**

Students are encouraged to become familiar with UNT’s policy on academic integrity: [http://policy.unt.edu/sites/default/files/untpolicy/pdf/7-Student_Affairs-Academic_Integrity.pdf](http://policy.unt.edu/sites/default/files/untpolicy/pdf/7-Student_Affairs-Academic_Integrity.pdf)

Academic dishonesty, in the form of plagiarism, cheating, or fabrication, will not be tolerated in this class. Any act of academic dishonesty will be reported, and a penalty determined, which may be probation, suspension, or expulsion from the university.

**STUDENT CONDUCT**

Expectations for behavior in this class accord with the Code of Student Conduct: “Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will
not be tolerated in any instruction forum at UNT. Students engaging in unacceptable behavior* will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student’s conduct violated the Code of Student conduct. The university’s expectations for student conduct apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc.” See [http://www.unt.edu/csrr/](http://www.unt.edu/csrr/)

**ETHICAL BEHAVIOR AND CODE OF ETHICS**
The Teacher Education & Administration Department expects that its students will abide by the Code of Ethics and Standard Practices for Texas Educators (Chapter 247 of the Texas Administrative Code www.sbec.state.tx.us) and as outlined in Domain IV: Fulfilling Professional Roles and Responsibilities of the Pedagogy and Professional Responsibilities (PPR) Texas Examination of Educator Standards (TExES); and as also addressed in codes of ethics adopted by professionals in the education field such as the National Education Association (NEA) and the American Federation of Teachers (AFT).

**COLLECTION OF STUDENT WORK SAMPLES POLICY**
In order to monitor students’ achievement and improve its instructional programs, the Department of Teacher Education and Administration collects random, anonymous student work samples to be analyzed by internal and external reviewers.

**COMPREHENSIVE ARTS PROGRAM POLICY**
The Elementary Education program area supports a comprehensive arts program to assist pre-service and in-service teachers to design and implement curricular and instructional activities which infuse all areas of the arts (visual, music, theater, and movement) throughout the elementary and middle school curriculum.

**EAGLE CONNECT**
All students should activate and regularly check their Eagle Connect (e-mail) account. Eagle Connect is used for official communication from the University to students. For information about Eagle Connect, visit https://eagleconnect.unt.edu/.

**NATIONAL COUNCIL FOR THE ACCREDITATION OF TEACHER EDUCATION (NCATE)**
UNT is an NCATE-accredited institution. The educator as an agent of engaged learning” summarizes the conceptual framework of UNT’s basic and advanced programs. The program of educator preparation at UNT is based on the following key concepts: (1) content and curricular knowledge, (2) knowledge of teaching and assessment, (3) promotion of equity for all learners, (4) encouragement of diversity, (5) professional communication, and (6) engaged professional learning.

**TECHNOLOGY INTEGRATION POLICY**
The Elementary Education program area supports technology integration to assist pre-service and in-service teachers to design and implement curricular and instruction activities which infuse technology throughout the elementary and middle school curriculum. All students must purchase access to TK20 for assessment purposes for other courses. Please go to the following link for directions on how to purchase TK20. Announcements regarding training on use of the TK20 system will also be posted on this website. [http://www.coe.unt.edu/tk20](http://www.coe.unt.edu/tk20)

**Conceptual Framework:**
The Educator as Agent of Engaged Learning
Improving the quality of education in Texas schools and elsewhere is the goal of programs for the education of educators at the University of North Texas. To achieve this goal, programs leading to teacher certification and advanced programs for educators at the University of North Texas (1) emphasize content, curricular, and pedagogical knowledge acquired through research and informed practice of the academic disciplines, (2) incorporate the Texas Teacher Proficiencies for learner-centered education, (3) feature collaboration across the university and with schools and other agencies in the design and delivery of programs, and (4) respond to the rapid demographic, social, and technological change in the United States and the world.

The educator as agent of engaged learning summarizes the conceptual framework for UNT's basic and advanced programs. This phrase reflects the directed action that arises from simultaneous commitment to academic knowledge bases and to learner centered practice. "Engaged learning" signifies the deep interaction with worthwhile and appropriate content that occurs for each student in the classrooms of caring and competent educators. "Engaged learning" features the on-going interchange between teacher and student about knowledge and between school and community about what is worth knowing. This conceptual framework recognizes the relationship between UNT and the larger community in promoting the commitment of a diverse citizenry to life-long learning. In our work of developing educators as agents of engaged learning, we value the contributions of professional development schools and other partners and seek collaborations which advance active, meaningful, and continuous learning.

Seeing the engaged learner at the heart of a community that includes educators in various roles, we have chosen to describe each program of educator preparation at UNT with reference to the following key concepts, which are briefly defined below.

1. Content and curricular knowledge refer to the grounding of the educator in content knowledge and knowledge construction and in making meaningful to learners the content of the PreK-16 curriculum.
2. Knowledge of teaching and assessment refers to the ability of the educator to plan, implement, and assess instruction in ways that consistently engage learners or, in advanced programs, to provide leadership for development of programs that promote engagement of learners.
3. Promotion of equity for all learners refers to the skills and attitudes that enable the educator to advocate for all students within the framework of the school program.
4. Encouragement of diversity refers to the ability of the educator to appreciate and affirm formally and informally the various cultural heritages, unique endowments, learning styles, interests, and needs of learners.
5. Professional communication refers to effective interpersonal and professional oral and written communication that includes appropriate applications of information technology.
6. Engaged professional learning refers to the educator’s commitment to ethical practice and to continued learning and professional development.

Through the experiences required in each UNT program of study, we expect that basic and advanced students will acquire the knowledge, skills, and dispositions appropriate to the educational role for which they are preparing or in which they are developing expertise.

A broad community stands behind and accepts responsibility for every engaged learner. UNT supports the work of PreK-16 communities through basic and advanced programs for professional educators and by promoting public understanding of issues in education.