Fall 2017
Instructor: Sarah Smitherman Pratt, Ph.D.
Office: Matthews 204-J
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.)
Class Location: Tuesdays: Matthews Hall 114; Thursdays: Matthews Hall 108
Class Dates/Times: Tuesday/Thursday, 3:30 – 4:50 p.m.
Office Hours: Tuesday, 8:30–11:00 am; Wednesday, 4:00–5:00 pm, Thursday, 12:30 – 3:00 pm; 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:

Recommended Texts:
National Council of Teachers of Mathematics – Student e-Membership (http://www.nctm.org/Membership/Membership-Options-for-Individuals/)
- Sign up for student membership by end of course for $44
- *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
Access to Blackboard – required: https://learn.unt.edu
Bloom’s Taxonomy: http://en.wikipedia.org/wiki/Bloom's_Taxonomy

**Learning Objectives:** (Alignment with Middle School Mathematics TEKS, Texas Pedagogy and Professional Responsibility Standards, UNT Conceptual Framework, & INTASC Standards)

<table>
<thead>
<tr>
<th>Teacher candidates will be able to...</th>
<th>Evidence of Teacher Candidate Learning: (Assignment)</th>
<th>Middle School Mathematics TEKS, Texas Pedagogy and Professional Responsibility Standards, UNT Conceptual Framework, &amp; INTASC Standards</th>
</tr>
</thead>
</table>
| Critically discuss current perspectives in middle school mathematics curriculum | • In Class Activities  
• Tutoring Project | 6.b.11.A, 7.b.12.A, & 8.b.13.b; Domain IV: Competency 011, Communication & Professionalism; INTASC 4, 5, 6, 9, & 10 |
| Reflect on current teaching practices and the influence of these practices in student learning. | • In Class Activities  
• Reading Discussion Group  
• Tutoring Project  
• Concept Report | (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  
• POW  
• Tutoring Project  
• Concept Report | (Domain I: 002, 003, 004, ;Content, Diversity, Equity, Pedagogy; INTASC 1, 2, 3, 4, 5, 6, 7, 8, 9, 10) |
| Become acquainted with various types of manipulatives and other concrete materials available for modeling and developing concepts in middle level mathematics. | • In Class Activities  
• POW  
• Concept Report | (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  
• POW  
• Tutoring Project  
• Concept Report | (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) |
Teacher candidates will be able to...

Evidence of Teacher Candidate Learning: (Assignment)

Middle School Mathematics TEKS, Texas Pedagogy and Professional Responsibility Standards, UNT Conceptual Framework, & INTASC Standards

Develop facility with a variety of calculator and computer applications appropriate for the middle level mathematics classroom.

- In Class Activities
- POW
- Tutoring Project


Acquire knowledge of a variety of teaching approaches for middle level school mathematics.

- In Class Activities
- Reading Discussion Group
- Tutoring Project
- Concept Report

(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)

Become acquainted with mathematics in a broader cultural context.

- In Class Activities
- Reading Discussion Group
- Tutoring Project


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 APA 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. Discussion of Course Readings................................. 25%
3. Problems of the Week (POW)................................. 10%
4. Tutoring Project .................................................. 30%
5. Concept Report .................................................. 25%

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

Weekly Engagement
To be effectively engaged in this class the teacher candidate 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

Per departmental policy, attendance is mandatory.
This course is designed and organized to be highly collaborative and experiential. It will involve literature discussion groups, and small and large group discussions. Therefore, teacher candidates’ attendance and participation are essential to learning. It is not possible to be enriched by discussions and collaborations if one is not present or prepared for class. If a teacher candidate decides to miss an entire class period or part of it for any reason, then full participation credit for that class session will not be given. Involvement in class activities cannot be made up, thus it is imperative that all are present and prepared for each class session. Poor or late attendance, not attending for the full class time, or lack of preparation (i.e., not completing reading assignments or other non-graded assignments) will adversely affect grades for this course. If more than 30 minutes of class time is missed, the teacher candidate will be counted as absent. Whether an excused or unexcused absence, important components to the course are still being missed. All teacher candidates are responsible for material covered during absences.

The instructor’s policy regarding attendance is as follows:

- 3 absences = final grade in the course will be lowered by one full letter grade
- 4 absences = final grade in the course will be lowered by two full letter grades
- 5 absences = F in the course
- 3 tardies = 1 absence (arriving > 15 minutes late and/or leaving > 15 minutes early)

Discussion of Course Readings
A significant aspect of this course is to read and engage in the professional literature and research in education that explores and explains what it means to teach mathematics conceptually. Because many of us have limited experiences as students in classrooms based on reform methods, it is often difficult to consider how to teach in this manner. To consider changes in pedagogical strategies, each week that a reading assignment is due, part of class time will be dedicated to group discussions. Groups will be determined the first week of class, but the instructor reserves the right to change them if issues occur. The roles for each group member (rotated weekly) are as follows: 1) Discussion Director; 2) Word Wizard & Connector; and, 3) Quizzer. Each group member must post their contribution no later than Monday at 11:59 pm. Scores for the rubric will be submitted by the quizzer at the end of each discussion and recorded as part of the weekly grade for this category. A maximum score of 4 points can be earned each week. See Blackboard for specific details regarding roles and expectations, due dates and rubric.

Problem of the Week
In order for teacher candidates to demonstrate working knowledge of open-ended mathematical tasks, each teacher candidate will be required to submit all tasks at the conclusion of the semester, with both attempted solutions and correct answers to each task. Additionally, each teacher candidate will submit two problems of the week during the semester and lead the class in the discussion of the task.

For the designated POW, the assigned teacher candidate 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. The discussion thread should be named POW #() that coordinates with the calendar. During class on Thursday, the assigned teacher candidate will lead the discussion and use a monitoring form that has at least 3 anticipated strategies for solving the task already on it.

Every teacher candidate 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. 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 a good non-routine task and monitoring form, weekly written
attempts of solutions, and correct solutions to all of the problems. See Blackboard for specific details, due dates and rubric.

**Tutoring Project**
This assignment is designed to develop the teacher candidate’s abilities to correctly diagnose and rectify student misconceptions and inconsistencies outside of the classroom. The teacher candidate 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 teacher candidate will be required to consult with the assigned school mentor teacher prior to implementation of project. See Blackboard for specific details, due dates and rubric.

**Concept Report**
This is an opportunity for the teacher candidate 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 graded in three 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.
3) Participation in all of the workshops is expected.

See Blackboard for specific details, due dates and rubric.

**General Classroom Policies:**
- All course readings must be read before class.
- Be punctual to class – if you are late, see the course instructor after class.
- Please be respectful by not speaking while others are presenting during class.
- Please do not eat in class.
- All grades/points for assignments are final.
- If you have any questions about grades/points awarded to assignments, make an appointment to see the course instructor during the course instructor’s office hours.
- Course instructor will not discuss grades/points during class time. Please make an appointment.
- All citations must be in the APA format.
- Do not upload draft copies of assignments onto BlackBoard.
- All assignments are required to be uploaded onto BlackBoard or TK20 as directed.
- All deadlines are final.
- NO CELL PHONE USE/CELL PHONE TEXTING during the scheduled class session!

**Proposed Course Schedule**

*Topics/Due Dates may be changed at the discretion of the instructor with adequate notification*

<table>
<thead>
<tr>
<th>Assignment(s) Due:</th>
<th>Tuesday (Matthews Hall 114)</th>
<th>Thursday (Matthews Hall 108)</th>
</tr>
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<tbody>
<tr>
<td>08/29: Syllabus &amp; Course Assessments NCTM Standards &amp; TEKS</td>
<td>08/30: POW #1 Base systems</td>
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</tr>
<tr>
<td>Reading #1</td>
<td>09/05: Concepts in Mathematics</td>
<td>09/07: POW #2 Rational numbers – Exponents</td>
</tr>
<tr>
<td>Reading #2 Tutoring Project Part I due</td>
<td>09/12: Problem-Centered Learning</td>
<td>09/14: POW #3 Rational numbers – Percents</td>
</tr>
<tr>
<td>Reading #3 Concept Article Report #1 due</td>
<td>09/19: Conceptual Understanding</td>
<td>09/21: POW #4 Rational numbers – Fractions</td>
</tr>
<tr>
<td>Reading #4 Tutoring Project Part II due</td>
<td>09/26: 5 Practices</td>
<td>09/28: POW #5 Geometry – Transformations</td>
</tr>
<tr>
<td>Reading #5 Concept Article Report #2 due</td>
<td>10/03: Inquiry-Based Instruction</td>
<td>10/05: POW #6 Geometry – Area</td>
</tr>
<tr>
<td>Reading #6</td>
<td>10/10: Formative Assessment</td>
<td>10/12: POW #7 Geometry – Volume</td>
</tr>
<tr>
<td>Reading #7</td>
<td>10/17: Constructing Knowledge</td>
<td>10/19: POW #8 Data Analysis &amp; Probability</td>
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<tr>
<td>Reading #8</td>
<td>10/24: Scaffolding Trajectories</td>
<td>10/26: POW #9 Data Analysis &amp; Probability</td>
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<tr>
<td>Reading #9</td>
<td>10/31: Technology Integration</td>
<td>11/02: POW #10 Operations with integers</td>
</tr>
<tr>
<td>Reading #11 Tutoring Project Part III due</td>
<td>11/14: Listening for Differences Understanding Slope</td>
<td>11/16: POW #12 Relations &amp; Functions</td>
</tr>
<tr>
<td>Concept Report Presentation draft due</td>
<td>11/21: Conference Day with Dr. Pratt</td>
<td>11/23: No Class – Happy Thanksgiving</td>
</tr>
<tr>
<td>Reading #12 Tutoring Project Part IV due POW Packet due</td>
<td>11/28: Tutoring Project Reports to Class</td>
<td>11/30: Measurement</td>
</tr>
<tr>
<td>Tutoring Project Part V due – Upload to TK20</td>
<td>12/12: Tutoring Project submitted to TK20 no later than the scheduled final exam time of December 12, 1:30 p.m.</td>
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</table>
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.

**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).

**Submitting Work:** All assignments will be submitted via Blackboard Learn. Assignments posted after the deadline will be considered late and points will be deducted from the final grade.

**Grading and Grade Reporting:** Grading rubrics for all assignments can be found on the course Blackboard Learn website with the assignment. Students are encouraged to review the grading rubrics to guide them in successfully completing all assignments.

**Writing Policy:** Teachers are judged on the accuracy of everything they write, whether it is a letter to parents or an email to a principal or a worksheet for students. Your written products – including, but not limited to, papers, lesson plans, and emails – should include appropriate and accurate spelling, grammar, punctuation, syntax, format, and English usage. You should expect that all assignments will be evaluated on these writing skills, in addition to any other expectations of a particular assignment. The UNT Writing Lab (Auditorium Building, 105) offers one-on-one consultation to assist students with their writing assignments. To use this resource, call (940) 565-2563 or visit https://ltc.unt.edu/labs/unt-writing-lab-home.

**Teacher Education & Administration**

**Departmental Policy Statements**

**UNT Career Connect:** All undergraduate students are expected to participate in “UNT Career Connect.” Each student needs to set up a UNT e-portfolio for this purpose. As a UNT student engages in real-life, career-related experiences in curricular and/or co-curricular settings, s/he should upload documentation of these experiences into his/her UNT e-portfolio. Course
instructors will help students identify appropriate experiences and accompanying documentation/artifacts for inclusion in the e-portfolio. Through their respective e-portfolios, students are able to make connections across their student experiences and reflect upon their learning and skills in order to prepare them with marketable skills for careers and graduate degrees. The e-portfolio also serves as a useful device for future job interviews. Career Connect places emphasis on important job skills such as communication, teamwork, and critical thinking. For students seeking teacher certification, these on-the-job skills will be evaluated during student teaching using the North Texas Appraisal of Classroom Teaching (NTACT) or its successor instrument. Follow this link to learn more and to set up your personal e-portfolio: [http://careerconnect.unt.edu/default](http://careerconnect.unt.edu/default).

**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.” Dr. Jemimah Young is the compliance officer and contact person for the Department of Teacher Education & Administration.

**Observation of Religious Holidays:** If you plan to observe a religious holy day that coincides with a class day, please notify your instructor as soon as possible.

**Academic Integrity:** Students are encouraged to become familiar with UNT’s policy on Student Standards of 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.

**Acceptable Student Behavior:** 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 instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students 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 classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at [https://deanofstudents.unt.edu/conduct](https://deanofstudents.unt.edu/conduct)

**Attendance:** See the instructor’s attendance policy.

**Eagle Connect:** All official correspondence between UNT and students is conducted via Eagle Connect and it is the student’s responsibility to read their Eagle Connect Email regularly.
Cell Phones and Laptop: Students should turn off cell phones when they are in class unless the phones are being used for learning activities associated with the course.

SETE: The Student Evaluation of Teaching Effectiveness (SETE) is expected for all organized classes at UNT. This brief online 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.

Collection of Student Work: In order to monitor students' achievement, improve instructional programs, and publish research findings, the Department of Teacher Education and Administration collects anonymous student work samples, student demographic information, test scores, and GPAs to be analyzed by internal and external reviewers.

TK20: Some undergraduate and graduate education courses require assignments that must be uploaded and assessed in the UNT TK20 Assessment System. This requires a one-time purchase of TK20, and student subscriptions are effective for seven years from the date of purchase. Please go to the following link for directions on how to purchase TK20: http://www.coe.unt.edu/tk20-campus-tools Announcements regarding TK20 will also be posted on this website.

Comprehensive Arts Program Policy. The Elementary Education program area supports a comprehensive arts program to assist preservice and inservice 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.

Technology Integration Policy. The Elementary, Secondary, and Curriculum & Instruction program areas support technology integration to assist preservice and inservice teachers to design and implement curricular and instruction activities which infuse technology throughout the K-12 curriculum.

TExES Test Preparation. To meet state requirements for providing 6 hours of test preparation for teacher certification candidates, the UNT TExES Advising Office (TAO) administers the College of Education TExES Practice Exams. Students who want to take a practice exam should contact the TAO (Matthews Hall 103). Students may take up to two exams per session that relate to their teaching track/field at UNT. Students should also plan accordingly, as they are required to stay for the entire testing period. Current students must meet the following criteria in order to sit for the TExES practice exams: Students must (1) be admitted to Teacher Education, (2) have a certification plan on file with the COE Student Advising Office, and (3) be enrolled in coursework for the current semester. For TExES practice exam information and registration, go to: http://www.coe.unt.edu/texes-advising-office/texes-exams If you need special testing accommodations, please contact the TAO at 940-369-8601 or e-mail the TAO at
coe-tao@unt.edu. The TAO website is www.coe.unt.edu/texes. Additional test preparation materials (i.e. Study Guides for the TExES) are available at www.texes.ets.org

“Ready to Test” Criteria for Teacher Certification Candidates. Teacher certification candidates should take the TExES exams relating to their respective certification tracks/teaching fields during their early-field-experience semester (i.e. the long semester or summer session immediately prior to student teaching).

Six Student Success Messages. The Department of Teacher Education & Administration supports the six student success messages on how to succeed at UNT: (1) Show up; (2) Find support; (3) Take control; (4) Be prepared; (5) Get involved; and (6) Be persistent. Students are encouraged to access the following website: https://success.unt.edu. The site contains multiple student resource links and short videos with student messages.

This course syllabus is intended to be a guide and may be amended at any time by the instructor.