Fall 2016

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Class Location: Matthews Hall 108
Class Dates/Times: Tuesday/Thursday, 3:30 – 4:50 p.m.
Office Hours: Tuesdays & Thursdays, 10:00 a.m.–12:00 p.m. & 2:00–3:00 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

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:
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 $46
  - *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
Mathematics TEKS: http://ritter.tea.state.tx.us/rules/tac/chapter11/
Common Core State Standards for Mathematics:
English Language Proficiency Standards (Proficiency Level Descriptors):
http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html#74.4
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>Course Objectives and Evidence of Student Learning</th>
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<tr>
<td><strong>Students will be able to...</strong></td>
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<tr>
<td>Critically discuss current perspectives in middle school mathematics Curriculum</td>
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<td>Reflect on their current teaching practices and the influence of these practices in student learning.</td>
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<td>Develop appropriate assessment techniques that inform instructional practice and support student learning.</td>
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<td>Acquaint students with various types of manipulatives and other concrete materials available for modeling and developing concepts in middle level mathematics.</td>
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<td>Engender skills of effectively implementing middle level mathematics curriculum</td>
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<tr>
<td><strong>Students will be able to...</strong></td>
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| 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 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  

**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. Course Readings Discussion Group .......................... 25%
3. Problems of the Week ........................................... 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 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

*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, your attendance and participation are essential to your learning. It is not possible to be enriched by discussions and collaborations if you are not present or prepared for class. If you decide to miss an entire class period or part of it for any reason, then you will not receive full participation credit for that class session. Involvement in class activities cannot be made up, thus it is imperative that you 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 your grade for this course. If you miss more than 30 minutes of a class, you will be counted as absent. Whether you have an excused or unexcused absence, you are still missing important components to the course. You are responsible for material covered during absences.

- 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, this means arriving to class late and/or leaving class early

**Course Readings Discussion Group**

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 are as follows, and these roles rotate each week: Key Keeper/Discussion Director; Literary Luminary; Connector; Word Wizard; and, 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. These roles and the rubric are detailed on the course Blackboard web site.

**Problem of the Week**

Students will be required to sign up to submit a problem of the week once 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 provide 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 a good non-routine task and solution, 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 each pre-service mathematics teacher to become an “expert” with respect to a particular mathematical concept, to learn about research materials to extend 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.

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

<table>
<thead>
<tr>
<th>Assignment(s) Due</th>
<th>Tuesday:</th>
<th>Thursday:</th>
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<tbody>
<tr>
<td><strong>Weekly:</strong></td>
<td><strong>Reading Discussion Groups</strong></td>
<td><strong>POW</strong></td>
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<td><strong>Conceptual-Based Activity</strong></td>
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<td><strong>MKT Assessment Question</strong></td>
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<td>08/30:</td>
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<td>09/01:</td>
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<td>Syllabus &amp; Course Assessments</td>
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<td>Non-routine Tasks</td>
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<td>NCTM Standards &amp; TEKS</td>
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<td>09/08:</td>
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<tr>
<td>Reading #1</td>
<td>09/06:</td>
<td>Fractions</td>
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<td>Concepts in Mathematics</td>
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<td>09/15:</td>
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<td>Reading #2</td>
<td>09/13:</td>
<td>Fractions</td>
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<tr>
<td>Tutoring Project Proposal</td>
<td>Problem-Centered Learning</td>
<td>09/22:</td>
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<tr>
<td>Reading #3</td>
<td>09/20:</td>
<td>Fractions</td>
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<tr>
<td>Concept Article #1</td>
<td>Conceptual Understanding</td>
<td>09/29:</td>
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<td>Reading #4</td>
<td>09/27:</td>
<td>Geometry: Area</td>
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<tr>
<td>Tutoring Project Activity Plans</td>
<td>5 Practices</td>
<td>10/06:</td>
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<tr>
<td>Reading #5 – Discussion Board</td>
<td>10/04: Dual Language Math Class at Draper Intermediate in Wiley</td>
<td>Geometry: Volume</td>
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<tr>
<td>Concept Article #2</td>
<td>10/11: Formative Assessment</td>
<td>10/13:</td>
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<td>Reading #6</td>
<td>Constructing Knowledge</td>
<td>Geometry: Transformations</td>
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<td>Reading #7</td>
<td>10/18:</td>
<td>10/20:</td>
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<td>Reading #8</td>
<td>Constructing Knowledge</td>
<td>Word Problems, MKT</td>
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<td>Reading #9</td>
<td>10/25:</td>
<td>10/27:</td>
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<tr>
<td>Scaffolding Trajectories</td>
<td>Multiplying and Dividing in Quadrant 1</td>
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<td>Reading #10</td>
<td>11/01:</td>
<td>11/03:</td>
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<tr>
<td>Technology Integration</td>
<td>Multiplying in all 4 Quarters</td>
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<tr>
<td>Reading #11</td>
<td>11/08:</td>
<td>11/10:</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>Epistemologies &amp; Pedagogies</td>
<td>Dividing and Factoring in all 4 Quadrants</td>
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<tr>
<td>Tutoring Project Assessment Documentation</td>
<td>NCTM Principles (2000, 2014)</td>
<td>11/17:</td>
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<tr>
<td>Documentation</td>
<td>Dividing and Factoring in all 4 Quadrants</td>
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**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!

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**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 (Sage Hall 152) 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

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. 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.

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.

SPOT: The Student Peceptions of Teaching (SPOT) 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 SPOT 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 instructional 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.texas.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) Get advised; (4) Be prepared; (5) Get involved; and (6) Stay focused. 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.