EDEE 4350: Math in Elementary Grades EC-8
Section 6, Spring 2016 (Pratt)

Class Location: Matthews 108        Class Dates/Times: Wednesday, 8:00 – 10:50 a.m.
Instructor: Sarah Smitherman Pratt, Ph.D.
            Office: Matthews 204-J
            Phone: 940.565.2030 (office)
            E-mail: sarah.pratt@unt.edu
            Please allow up to 24 hours for a response. Use of UNT email is required.
Office Hours: Tuesdays, 12:30 – 4:00 p.m.; Thursdays, 9:30–11:00 a.m.; or by appointment

Prerequisite: Admission to the teacher education program, which includes participation in a field-based program, EDEE 3320, 3380; all courses in the reading/English/language arts part of the academic major; required core and academic major math courses and DFEC classes.

Course Texts:
van de Walle, J., Karp, K., & Bay-Williams, J. (2015). *Elementary and Middle School Mathematics: Teaching Developmentally* (9th ed.). Boston: Pearson Education, Inc. (Note: 8th ed. is acceptable, but 7th ed. is not.)
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
   ➢ *Teaching Children Mathematics* and *Mathematics Teaching in the Middle School* are useful references for this course. These journal series from NCTM are 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

Course Description: Principles in mathematics teaching and learning based on national curriculum, and assessment standards. The learning process in the development of mathematical thinking and skills in children. Students observe mathematics instruction and materials in real settings and experience firsthand the scope and sequence of mathematics in a primary/elementary/middle school setting. Assignments, directed field experience and other class activities take place on site in a school setting.
**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.

**Learning Objectives:**

1. **Student(s) will understand mathematical concepts that enable them to teach mathematics to young children with confidence, competence, creativity, and capacity.**
   - 1.1 Confidence: The students will examine previous experiences in relationship to current coursework and field experience in order to develop confidence as a future teacher of mathematics.
   - 1.2 Competence: The student(s) will develop competence by successful completion and understanding of the concepts in this course.
   - 1.3 Creativity: The student(s) will recognize the use of creativity in understanding and teaching mathematics.
   - 1.4 Capacity: The student(s) will develop their capacity to create meaningful mathematical experiences for their future students.

2. **Student(s) will develop a pedagogical understanding of mathematical perspectives, learning, instruction, assessment, and reflective practice.**
   - 2.1 Students will understand mathematics, learning, instruction, assessment, and reflective practice from a pedagogical perspective.
   - 2.2 Students will develop a pedagogical understanding of how children learn and develop mathematical skills, procedures, and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals and to teach all students to understand mathematics.
   - 2.3 Students will develop a pedagogical understanding of assessment and use a variety of formal and informal assessment techniques appropriate to the learner on the ongoing basis to monitor and guide instruction and to evaluate and to report student progress.
   - 2.4 Students will develop a pedagogical understanding of mathematics teaching as a profession, know the values and rewards of being a reflective practitioner and realizes the importance of making a lifelong commitment to professional growth and development.

**MATHEMATICS GENERALIST EC–6 STANDARDS**

**Standard I. Number Concepts:** The mathematics teacher understands and uses numbers, number systems and their structure, operations and algorithms, quantitative reasoning, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

**Standard II. Patterns and Algebra:** The mathematics teacher understands and uses patterns, relations, functions, algebraic reasoning, analysis, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

**Standard III. Geometry and Measurement:** The mathematics teacher understands and uses geometry, spatial reasoning, measurement concepts and principles, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.

**Standard IV. Probability and Statistics:** The mathematics teacher understands and uses probability and statistics, their applications, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in order to prepare students to use mathematics.
**Standard V. Mathematical Processes:** The mathematics teacher understands and uses mathematical processes to reason mathematically, to solve mathematical problems, to make mathematical connections within and outside of mathematics, and to communicate mathematically.

**Standard VI. Mathematical Perspectives:** The mathematics teacher understands the historical development of mathematical ideas, the interrelationship between society and mathematics, the structure of mathematics, and the evolving nature of mathematics and mathematical knowledge.

**Standard VII. Mathematical Learning and Instruction:** The mathematics teacher understands how children learn and develop mathematical skills, procedures, and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals; and to teach all students to understand and use mathematics.

**Standard VIII. Mathematical Assessment:** The mathematics teacher understands assessment and uses a variety of formal and informal assessment techniques appropriate to the learner on an ongoing basis to monitor and guide instruction and to evaluate and report student progress.

**Standard IX. Professional Development:** The mathematics teacher understands mathematics teaching as a profession, knows the value and rewards of being a reflective practitioner, and realizes the importance of making a lifelong commitment to professional growth and development.

**TEXES PEDAGOGY AND PROFESSIONAL RESPONSIBILITIES**

**Standard I.** The teacher designs instruction appropriate for all students that reflects an understanding of relevant content and is based on continuous and appropriate assessment.

**Standard II.** The teacher creates a classroom environment of respect and rapport that fosters a positive climate for learning, equity and excellence.

**Standard III.** The teacher promotes student learning by providing responsive instruction that makes use of effective communication techniques, instructional strategies that actively engage students in the learning process and timely, high-quality feedback.

**Standard IV.** The teacher fulfills professional roles and responsibilities and adheres to legal and ethical requirements of the profession.

**COURSE ASSIGNMENTS & EVALUATION**

1. Class Preparations, Contributions, In Class and Online Work ................................. 30%
2. Observation Project ........................................................................................................... 20%
3. Mathematics Interaction Project ..................................................................................... 30%
4. Final Project ...................................................................................................................... 20%

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

All course assignments are due at the beginning of class except where indicated in the syllabus. Electronic assignments must be submitted via Blackboard or TK20, as directed.

Class Preparations, Contributions, In Class and Online Work (30%)

1) **Weekly Engagement:**
   
   To be effectively engaged in this class you will need to:
   
   1) Be prepared by reading and reflecting on assigned material each week;
   
   2) Show involvement in class through participation in class discussions;
   
   3) Demonstrate purposeful engagement with activities during class time; and,
   
   4) Reflect honestly after each class.

   Grades for participation and personal responses will be assessed each week, according to attendance and engagement. The grading rubric for this part of in-class and on-line work is as follows:
• 2 points for participating in the classroom discussions and activities, or for participating in the on-line assignments;
• 1 point for leaving class early and/or arriving late (more than 15 minutes), for not fully participating in the discussions and activities, or for not participating in the on-line assignments;
• 0 points for no participation.

(2) Course Readings Discussion Group Roles:
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 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, contributions to a reading discussion must be posted online in a group wiki; then during class time group discussions regarding the reading and postings will be conducted. 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 outlined below; these roles will change each week. Rubrics will be submitted by the group at the end of each discussion and recorded as part of the weekly grade for this category. The scores range from 0-4. The roles are: Key Keeper/Discussion Director; Literary Luminary; Connector; Word Wizard; and, Quizzer. These roles and the rubric are detailed on the course Blackboard web site.

Observation Project (20%):
Each pre-service teacher will observe mathematics being taught for three (3) sessions while completing distinct observation sheets (to be distributed). Using the data from the observation sheets, each pre-service teacher is expected to submit a comparison paper across observations, readings, and activities from this course. The paper should be 4-5 pages in length, 12 font, double-spaced, free of typos and grammatical mistakes, and well-constructed. See Blackboard for rubric and for due dates for the observations (to be checked in class) and the report. When the observation report is due on Blackboard, the three observation sheets must be brought to class to receive credit.

Mathematics Interaction Project (30%): Beginning the third week of class each pre-service teacher will spend approximately 30 minutes each alternate week interviewing with one child (based on your area of certification) in or out of a school environment for a total of five (5) interactions. The set of interviews should focus on a conceptual through hands-on activities. What you do will depend on various factors: the age of the child, her/his academic development, his/her interests, and your conceptual focus. Much of what you do will probably (but not necessarily) relate to what the child is doing in her/his classroom. At the completion of each session, you are to notate and reflect on your experiences from the session. See the class Blackboard site for rubric and due dates for the observations (to be checked in class) and the report. When the observation report is due on Blackboard, the three observation sheets must be brought to class to receive credit.

Final Project (20%):
The final project includes two parts:
(1) Newsletter:

Create a newsletter to parents that describes your mathematics curriculum for the first 9 weeks of school as well as a brief description of your philosophy on teaching and learning. The newsletter is to be informative, telling parents what will be happening in your classroom during the first 9 weeks as well as validating and supporting your stance with theory from readings from this class or done in other classes. (Be sure to include all references.)

(2) Model lesson plan:
Create a model lesson plan that is mentioned in your newsletter to demonstrate what you have learned from the course assignments and activities. You are encouraged to select a concept and grade for the following semester’s field experience. The lesson plan must include the UNT Template as well as an attached full 5E lesson plan. The lesson will be presented to the class during the assigned finals time for this course, and it is to be conducted in a professional manner. Hands-on materials and/or technology must be included in the presentation.

The final project with supporting documents must be uploaded on Blackboard. See Blackboard for due date and rubric. All members of the class will be able to access the units for viewing and sharing. The final project may be completed with a partner.

Attendance, Participation, and Dispositions Policies:
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

If you miss class, you are responsible for all announcements, assignments and information presented or discussed in class. It is your responsibility to contact other members of the class or the instructor to obtain information missed during your absence. Please make an appointment to see the course instructor.

Texas Essential Knowledge and Skills (TEKS)
http://www.tea.state.tx.us/index2.aspx?id=6066&menu_id=2147483671&menu_id2=794

Class activities, readings (van de Walle text & supplemental articles), and discussions address the TEKS mathematics standards for grades K-8 for

- Underlying processes and mathematical tools
- Number, operation, and quantitative reasoning
- Patterns, relationships, and algebraic thinking
- Geometry and spatial reasoning
- Measurement
- Probability and statistics

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 instructed.
- All deadlines are final.
- NO CELL PHONE USE/CELL PHONE TEXTING during the scheduled class session!

**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: Filling 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*

_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.

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 in-service 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.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) 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.