MATH 4305-110, CRN 80012, CONCEPTS OF ELEMENTARY MATHEMATICS III

Blended class with face-to-face and online components
Face-to-face meetings on Wednesdays in
Warrior Hall Room 313 from 2:00pm – 4:45pm on the following dates:
August 28th, September 4th, September 11th, September 18th, September 25th, October 2nd,
October 16th, October 23rd, October 30th, November 6th, November 13th, November 20th,
December 4th, December 11th

Texas A&M University-Central Texas

INSTRUCTOR AND CONTACT INFORMATION
Instructor: Dr. Mienie Roberts
Office: HH 302K
Phone: 903.705.9703
Email: Please use the CANVAS inbox for all correspondence related to the course. My
university email address is:
dekock@tamuct.edu

Office Hours:
Face-to-face in Room HH 302K:

INSTRUCTOR’S OFFICE HOURS:
Face-to-face:
Mondays: 12pm-2pm

Online:
Webex:
Mondays: 12pm-2pm, Wednesdays 12pm-2pm
Link to virtual office hours:
https://tamuct.webex.com/meet/dekock

Or by appointment.

GRADUATE ASSISTANT’S OFFICE HOURS:
Mr. Anthony Moreno
Email:
am078@my.tamuct.edu

The graduate assistant will be available in person in the MakerSpace on the 3rd floor of Heritage
Hall, Room 301.

Face-to-face:
Tuesdays, Thursdays: 12:00pm-2:00pm
Online office hours:
Saturday 10:00am – 12:00pm
Sunday
3:00pm – 5:00pm
Link to virtual office hours:
tamuct-math.my.webex.com/meet/am078

RESEARCH ASSISTANT’S OFFICE HOURS:
Mr. Sam Jackson
sj020@my.tamuct.edu

Face-to-face office hours:
Tuesdays and Thursdays 12:00pm – 1:30pm

Mode of instruction and course access:
This is a blended course with both online and face-to-face components. The student will be
required to complete homework assignments and tests on mymathlab. Students will also be
required to complete presentations. The presentations should be completed face-to-face during
class. The midterm and final exams are proctored exams and students are required to take these
exams in Warrior Hall, Room 313 on the assigned Wednesdays.

This course uses the A&M-Central Texas Canvas Learning Management System
[https://tamuct.instructure.com/]

The online textbook, lecture videos, homework, quizzes, and virtual manipulatives can be found on:
www.mymathlab.com

The course will also use the GeoGebra software which can be found at:
GeoGebra.org

Student-instructor interaction:
I will check messages once a day on the CANVAS inbox system and reply within 24 hours.
Students are expected to check their CANVAS email and announcements on a daily basis.
WARRIOR SHIELD

Emergency Warning System for Texas A&M University-Central Texas Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by 911Cellular [https://portal.publicsafetycloud.net/Account/Login] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

COURSE INFORMATION
Course Overview and description:
This course is intended for prospective teachers who want to review key concepts, principles, and strategies for teaching Mathematics in EC-6 and 4-8 classrooms. Technology and teaching methods will be incorporated where appropriate. Prerequisites: Math 305 (Math 1351).

Course Objective:
The goal of this course is to deepen your conceptual understanding of the underlying mathematics covered in the EC-6 and 4-8 school curriculum. In addition you will engage in the pedagogy pertaining to the learned mathematics by using manipulatives to explain abstract mathematical concepts. The mathematics in the course emphasizes topics relevant to teaching children from prekindergarten to grade 8 according to guidelines as outlined by the Texas Education Agency and the National Council for Teachers of Mathematics.

Student learning outcomes:
After completing this course, students should be able to:

- Solve open-ended elementary school problems in areas such as patterns, algebra, ratios, and percents,
  
  (Covered in homework assignments, midterm, final)

- Justify the use of our numeration system by comparing it to historical alternatives and other bases, and describe the development of the system and its properties as it expands from the set of natural numbers to the set of real numbers,
• Demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relationships,

(Covered in all assignments)

• Display mastery of basic computational skills and recognize the appropriate use of technology to enhance those skills,

(Covered in presentations)

• Demonstrate and justify standard and alternative algorithms for addition, subtraction, multiplication and division of whole numbers, integers, fractions, and decimals,

(Covered in homework assignments, midterm, final)

• Identify, explain, and evaluate the use of elementary classroom manipulatives to model sets, operations, and algorithms, and

(Covered in presentations)

• Use number-theory arguments to justify relationships involving divisors, multiples and factoring.

(Covered on all assignments)

• Solve open-ended elementary school problems in using visualization and statistical reasoning,

(Covered on all assignments)

• Use the GeoGebra software to explain abstract mathematical concepts,

(Covered in Presentations)

• Demonstrate the use of mathematical reasoning by justifying and generalizing patterns and relationships,

(Covered in all assignments)

• Identify, explain, and evaluate the use of elementary classroom manipulatives to model geometry, probability and statistics.

(Covered in Presentations)

• Explain relationships among measurable attributes of objects and determine measurements,
(Covered in homework assignments, presentations, midterm, final)

- Analyze characteristic and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships,

  (Covered on all assignments)

- Apply transformations and use symmetry to analyze mathematical situations,

  (Covered on all assignments)

- Explain and apply basic concepts of probability, and

  (Covered on all assignments)

- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

  (Covered on all assignments)

4-8 Mathematics TEA standards and competencies:

The Standards Mathematics 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]) to prepare students to use mathematics.

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 (TEKS) to prepare students to use mathematics.

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 (TEKS) to prepare students to use mathematics.

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 (TEKS) to prepare students to use mathematics.

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.

Mathematics Standard VI Mathematical Perspectives:

The mathematics teacher understands the historical development of mathematical ideas, the relationship between society and mathematics, the structure of mathematics and the evolving nature of mathematics and mathematical knowledge.

Mathematics 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.

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.

Domains and Competencies

The content covered by this test is organized into broad areas of content called domains. Each domain covers one or more of the educator standards for this field. Within each domain, the content is further defined by a set of competencies. Each competency is composed of two major parts: ✦ The competency statement, which broadly defines what an entry-level educator in this field in Texas public schools should know and be able to do. ✦ The descriptive statements, which describe in greater detail the knowledge and skills eligible for testing.

**Domain I — Number Concepts**

Competency 001: The teacher understands the structure of number systems, the development of a sense of quantity and the relationship between quantity and symbolic representations. The beginning teacher:

A. Analyzes the structure of numeration systems and the roles of place value and zero in the base ten system.
B. Understands the relative magnitude of whole numbers, integers, rational numbers and real numbers.

C. Demonstrates an understanding of a variety of models for representing numbers (e.g., fraction strips, diagrams, patterns, shaded regions, number lines).

D. Demonstrates an understanding of equivalency among different representations of rational numbers.

E. Selects appropriate representations of real numbers (e.g., fractions, decimals, percents, roots, exponents, scientific notation) for particular situations.

F. Understands the characteristics of the set of whole numbers, integers, rational numbers, real numbers and complex numbers (e.g., commutativity, order, closure, identity elements, inverse elements, density).

G. Demonstrates an understanding of how some situations that have no solution in one number system (e.g., whole numbers, integers, rational numbers) have solutions in another number system (e.g., real numbers, complex numbers).

Competency 002: The teacher understands number operations and computational algorithms. The beginning teacher:

A. Works proficiently with real and complex numbers and their operations.

B. Analyzes and describes relationships between number properties, operations and algorithms for the four basic operations involving integers, rational numbers and real numbers.

C. Uses a variety of concrete and visual representations to demonstrate the connections between operations and algorithms.

D. Justifies procedures used in algorithms for the four basic operations with integers, rational numbers and real numbers and analyzes error patterns that may occur in their application.

E. Relates operations and algorithms involving numbers to algebraic procedures (e.g., adding fractions to adding rational expressions, division of integers to division of polynomials).

F. Extends and generalizes the operations on rationals and integers to include exponents, their properties and their applications to the real numbers.

Competency 003: The teacher understands ideas of number theory and uses numbers to model and solve problems within and outside of mathematics. The beginning teacher:
A. Demonstrates an understanding of ideas from number theory (e.g., prime factorization, greatest common divisor) as they apply to whole numbers, integers and rational numbers and uses these ideas in problem situations.

B. Uses integers, rational numbers and real numbers to describe and quantify phenomena such as money, length, area, volume and density.

C. Applies knowledge of place value and other number properties to develop techniques of mental mathematics and computational estimation.

D. Applies knowledge of counting techniques such as permutations and combinations to quantify situations and solve problems.

E. Applies properties of the real numbers to solve a variety of theoretical and applied problems.

Domain II — Patterns and Algebra

Competency 004: The teacher understands and uses mathematical reasoning to identify, extend and analyze patterns and understands the relationships among variables, expressions, equations, inequalities, relations and functions. The beginning teacher:

A. Uses inductive reasoning to identify, extend and create patterns using concrete models, figures, numbers and algebraic expressions.

B. Formulates implicit and explicit rules to describe and construct sequences verbally, numerically, graphically and symbolically.

C. Makes, tests, validates and uses conjectures about patterns and relationships in data presented in tables, sequences or graphs.

D. Gives appropriate justification of the manipulation of algebraic expressions.

E. Illustrates the concept of a function using concrete models, tables, graphs and symbolic and verbal representations.

F. Uses transformations to illustrate properties of functions and relations and to solve problems.

Competency 005: The teacher understands and uses linear functions to model and solve problems. The beginning teacher:
A. Demonstrates an understanding of the concept of linear function using concrete models, tables, graphs and symbolic and verbal representations.

B. Demonstrates an understanding of the connections among linear functions, proportions and direct variation.

C. Determines the linear function that best models a set of data.

D. Analyzes the relationship between a linear equation and its graph.

E. Uses linear functions, inequalities and systems to model problems.

F. Uses a variety of representations and methods (e.g., numerical methods, tables, graphs, algebraic techniques) to solve systems of linear equations and inequalities.

G. Demonstrates an understanding of the characteristics of linear models and the advantages and disadvantages of using a linear model in a given situation.

Competency 006: The teacher understands and uses nonlinear functions and relations to model and solve problems. The beginning teacher:

A. Uses a variety of methods to investigate the roots (real and complex), vertex and symmetry of a quadratic function or relation.

B. Demonstrates an understanding of the connections among geometric, graphic, numeric and symbolic representations of quadratic functions.

C. Analyzes data and represents and solves problems involving exponential growth and decay.

D. Demonstrates an understanding of the connections among proportions, inverse variation and rational functions.

E. Understands the effects of transformations.

F. Applies properties, graphs and applications of nonlinear functions to analyze, model and solve problems.

G. Uses a variety of representations and methods (e.g., numerical methods, tables, graphs, algebraic techniques) to solve systems of quadratic equations and inequalities.

H. Understands how to use properties, graphs and applications of nonlinear relations including polynomial, rational, radical, absolute value, exponential, logarithmic, trigonometric and piecewise functions and relations to analyze, model and solve problems.
Competency 007: The teacher uses and understands the conceptual foundations of calculus related to topics in middle school mathematics. The beginning teacher:

A. Relates topics in middle school mathematics to the concept of limit in sequences and series.

B. Relates the concept of average rate of change to the slope of the secant line and instantaneous rate of change to the slope of the tangent line.

C. Relates topics in middle school mathematics to the area under a curve.

D. Demonstrates an understanding of the use of calculus concepts to answer questions about rates of change, areas, volumes and properties of functions and their graphs.

Domain III — Geometry and Measurement

Competency 008: The teacher understands measurement as a process. The beginning teacher:

A. Selects and uses appropriate units of measurement (e.g., temperature, money, mass, weight, area, capacity, density, percents, speed, acceleration) to quantify, compare and communicate information.

B. Develops, justifies and uses conversions within measurement systems.

C. Applies dimensional analysis to derive units and formulas in a variety of situations (e.g., rates of change of one variable with respect to another) and to find and evaluate solutions to problems.

D. Describes the precision of measurement and the effects of error on measurement.

E. Applies the Pythagorean theorem, proportional reasoning and right triangle trigonometry to solve measurement problems.

Competency 009: The teacher understands the geometric relationships and axiomatic structure of Euclidean geometry. The beginning teacher:

A. Understands concepts and properties of points, lines, planes, angles, lengths and distances.

B. Analyzes and applies the properties of parallel and perpendicular lines.

C. Uses the properties of congruent triangles to explore geometric relationships and prove theorems.
D. Describes and justifies geometric constructions made using a compass and straight edge and other appropriate technologies.

E. Applies knowledge of the axiomatic structure of Euclidean geometry to justify and prove theorems.

Competency 010: The teacher analyzes the properties of two- and three-dimensional figures. The beginning teacher:

A. Uses and understands the development of formulas to find lengths, perimeters, areas and volumes of basic geometric figures.

B. Applies relationships among similar figures, scale and proportion and analyzes how changes in scale affect area and volume measurements.

C. Uses a variety of representations (e.g., numeric, verbal, graphic, symbolic) to analyze and solve problems involving two- and three-dimensional figures such as circles, triangles, polygons, cylinders, prisms and spheres.

D. Analyzes the relationship among three-dimensional figures and related two-dimensional representations (e.g., projections, cross-sections, nets) and uses these representations to solve problems.

Competency 011: The teacher understands transformational geometry and relates algebra to geometry and trigonometry using the Cartesian coordinate system. The beginning teacher:

A. Describes and justifies geometric constructions made using a reflection device and other appropriate technologies.

B. Uses translations, reflections, glide-reflections and rotations to demonstrate congruence and to explore the symmetries of figures.

C. Uses dilations (expansions and contractions) to illustrate similar figures and proportionality.

D. Uses symmetry to describe tessellations and shows how they can be used to illustrate geometric concepts, properties and relationships.

E. Applies concepts and properties of slope, midpoint, parallelism and distance in the coordinate plane to explore properties of geometric figures and solve problems.

F. Applies transformations in the coordinate plane. G. Uses the unit circle in the coordinate plane to explore properties of trigonometric functions.
Domain IV — Probability and Statistics

Competency 012: The teacher understands how to use graphical and numerical techniques to explore data, characterize patterns and describe departures from patterns. The beginning teacher:

A. Organizes and displays data in a variety of formats (e.g., tables, frequency distributions, stem-and-leaf plots, box-and-whisker plots, histograms, pie charts).

B. Applies concepts of center, spread, shape and skewness to describe a data distribution.

C. Supports arguments, makes predictions and draws conclusions using summary statistics and graphs to analyze and interpret one-variable data.

D. Demonstrates an understanding of measures of central tendency (e.g., mean, median, mode) and dispersion (e.g., range, interquartile range, variance, standard deviation).

E. Analyzes connections among concepts of center and spread, data clusters and gaps, data outliers and measures of central tendency and dispersion.

F. Calculates and interprets percentiles and quartiles.

Competency 013: The teacher understands the theory of probability. The beginning teacher:

A. Explores concepts of probability through data collection, experiments and simulations.

B. Uses the concepts and principles of probability to describe the outcome of simple and compound events.

C. Generates, simulates and uses probability models to represent a situation.

D. Determines probabilities by constructing sample spaces to model situations.

E. Solves a variety of probability problems using combinations, permutations and geometric probability (i.e., probability as the ratio of two areas).

F. Uses the binomial, geometric and normal distributions to solve problems.
Competency 014: The teacher understands the relationship among probability theory, sampling and statistical inference and how statistical inference is used in making and evaluating predictions. The beginning teacher:

A. Applies knowledge of designing, conducting, analyzing and interpreting statistical experiments to investigate real-world problems.

B. Demonstrates an understanding of random samples, sample statistics and the relationship between sample size and confidence intervals.

C. Applies knowledge of the use of probability to make observations and draw conclusions from single variable data and to describe the level of confidence in the conclusion.

D. Makes inferences about a population using binomial, normal and geometric distributions.

E. Demonstrates an understanding of the use of techniques such as scatter plots, regression lines, correlation coefficients and residual analysis to explore bivariate data and to make and evaluate predictions.

Domain V — Mathematical Processes and Perspectives

Competency 015: The teacher understands mathematical reasoning and problem solving. The beginning teacher:

A. Demonstrates an understanding of proof, including indirect proof, in mathematics.

B. Applies correct mathematical reasoning to derive valid conclusions from a set of premises.

C. Demonstrates an understanding of the use of inductive reasoning to make conjectures and deductive methods to evaluate the validity of conjectures.

D. Applies knowledge of the use of formal and informal reasoning to explore, investigate and justify mathematical ideas.

E. Recognizes that a mathematical problem can be solved in a variety of ways and selects an appropriate strategy for a given problem.

F. Evaluates the reasonableness of a solution to a given problem.
G. Applies content knowledge to develop a mathematical model of a real-world situation and analyzes and evaluates how well the model represents the situation.

H. Demonstrates an understanding of estimation and evaluates its appropriate uses.

Competency 016: The teacher understands mathematical connections within and outside of mathematics and how to communicate mathematical ideas and concepts. The beginning teacher:

A. Recognizes and uses multiple representations of a mathematical concept (e.g., a point and its coordinates, the area of circle as a quadratic function in r, probability as the ratio of two areas).

B. Uses mathematics to model and solve problems in other disciplines, such as art, music, science, social science and business.

C. Expresses mathematical statements using developmentally appropriate language, standard English, mathematical language and symbolic mathematics.

D. Communicates mathematical ideas using a variety of representations (e.g., numeric, verbal, graphic, pictorial, symbolic, concrete).

E. Demonstrates an understanding of the use of visual media such as graphs, tables, diagrams and animations to communicate mathematical information.

F. Uses the language of mathematics as a precise means of expressing mathematical ideas.

G. Understands the structural properties common to the mathematical disciplines.

H. Explores and applies concepts of financial literacy as it relates to teaching students (e.g., describe the basic purpose of financial institutions, distinguish the difference between gross income and net income, identify various savings options, define different types of taxes, identify the advantages and disadvantages of different methods of payments).

I. Applies mathematics to model and solve problems to manage financial resources effectively for lifetime financial security as it relates to teaching students (e.g., distinguish between fixed and variable expenses, calculate profit in a given situation develop a system for keeping and using financial records, describe actions that might be taken to balance a budget when expenses exceed income and balance a simple budget.)
Competency 017: The teacher understands how children learn and develop mathematical skills, procedures and concepts. The beginning teacher:

A. Applies theories and principles of learning mathematics to plan appropriate instructional activities for all students.

B. Understands how students differ in their approaches to learning mathematics with regard to diversity.

C. Uses students’ prior mathematical knowledge to build conceptual links to new knowledge and plans instruction that builds on students’ strengths and addresses students’ needs.

D. Understands how learning may be assisted through the use of mathematics manipulatives and technological tools.

E. Understands how to motivate students and actively engage them in the learning process by using a variety of interesting, challenging and worthwhile mathematical tasks in individual, small-group and large-group settings.

F. Understands how to provide instruction along a continuum from concrete to abstract.

G. Recognizes the implications of current trends and research in mathematics and mathematics education.

Competency 018: The teacher understands how to plan, organize and implement instruction using knowledge of students, subject matter and statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) to teach all students to use mathematics. The beginning teacher:

A. Demonstrates an understanding of a variety of instructional methods, tools and tasks that promote students’ ability to do mathematics described in the TEKS.

B. Understands planning strategies for developing mathematical instruction as a discipline of interconnected concepts and procedures.

C. Develops clear learning goals to plan, deliver, assess and reevaluate instruction based on the TEKS.

D. Understands procedures for developing instruction that establishes transitions between concrete, symbolic and abstract representations of mathematical knowledge.

E. Applies knowledge of a variety of instructional delivery methods, such as individual, structured small-group and large-group formats.
F. Understands how to create a learning environment that provides all students, including English-language learners, with opportunities to develop and improve mathematical skills and procedures.

G. Demonstrates an understanding of a variety of questioning strategies to encourage mathematical discourse and to help students analyze and evaluate their mathematical thinking.

H. Understands how technological tools and manipulatives can be used appropriately to assist students in developing, comprehending and applying mathematical concepts.

I. Understands how to relate mathematics to students’ lives and a variety of careers and professions.

Competency 019: The teacher understands assessment and uses a variety of formal and informal assessment techniques to monitor and guide mathematics instruction and to evaluate student progress. The beginning teacher:

A. Demonstrates an understanding of the purpose, characteristics and uses of various assessments in mathematics, including formative and summative assessments.

B. Understands how to select and develop assessments that are consistent with what is taught and how it is taught.

C. Demonstrates an understanding of how to develop a variety of assessments and scoring procedures consisting of worthwhile tasks that assess mathematical understanding, common misconceptions and error patterns.

D. Understands how to evaluate a variety of assessment methods and materials for reliability, validity, absence of bias, clarity of language and appropriateness of mathematical level.

E. Understands the relationship between assessment and instruction and knows how to evaluate assessment results to design, monitor and modify instruction to improve mathematical learning for all students, including English-language learners.

**EC-6 TEA Standards and Competencies:**

Mathematics 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.

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.

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.

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.

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.

Mathematics 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.

Mathematics 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.

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.
Mathematics 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.

**Subject Test II — Mathematics (802) Competencies:**

Competency 001 (Mathematics Instruction):

The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize and implement instruction and assess learning. The beginning teacher:

A. Plans appropriate instructional activities for all students by applying research-based theories and principles of learning mathematics.

B. Employs instructional strategies that build on the linguistic, cultural and socioeconomic diversity of students and that relate to students’ lives and communities.

C. Plans and provides developmentally appropriate instruction that establishes transitions between concrete, symbolic and abstract representations of mathematical knowledge and that builds on students’ strengths and addresses their needs.

D. Understands how manipulatives and technological tools can be used appropriately to assist students in developing, comprehending and applying mathematical concepts.

E. Creates a learning environment that motivates all students and actively engages them in the learning process by using a variety of interesting, challenging and worthwhile mathematical tasks in individual, small-group and large-group settings.

F. Uses a variety of tools (e.g., counters, standard and nonstandard units of measure, rulers, protractors, scales, stopwatches, measuring containers, money, calculators, software) to strengthen students’ mathematical understanding.

G. Implements a variety of instructional methods and tasks that promote students’ ability to do the mathematics described in the Texas Essential Knowledge and Skills (TEKS).

H. Develops clear learning goals to plan, deliver, assess and reevaluate instruction based on the mathematics in the Texas Essential Knowledge and Skills (TEKS).

I. Helps students make connections between mathematics and the real world, as well as between mathematics and other disciplines such as art, music, science, social science and business.
J. Uses a variety of questioning strategies to encourage mathematical discourse and to help students analyze and evaluate their mathematical thinking.

K. Uses a variety of formal and informal assessments and scoring procedures to evaluate mathematical understanding, common misconceptions and error patterns.

L. Understands the relationship between assessment and instruction and knows how to evaluate assessment results to design, monitor and modify instruction to improve mathematical learning for all students, including English-language learners.

M. Understands the purpose, characteristics and uses of various assessments in mathematics, including formative and summative assessments.

N. Understands how mathematics is used in a variety of careers and professions and plans instruction that demonstrates how mathematics is used in the workplace.

Competency 002 (Number Concepts and Operations):

The teacher understands concepts related to numbers, operations and algorithms and the properties of numbers. The beginning teacher:

A. Analyzes, creates, describes, compares and models relationships between number properties, operations and algorithms for the four basic operations involving integers, rational numbers and real numbers, including real-world situations.

B. Demonstrates an understanding of equivalency among different representations of rational numbers and between mathematical expressions.

C. Selects appropriate representations of real numbers (e.g., fractions, decimals, percents) for particular situations.

D. Demonstrates an understanding of ideas from number theory (e.g., prime factorization, greatest common divisor, divisibility rules) as they apply to whole numbers, integers and rational numbers, and uses those ideas in problem situations.

E. Understands the relative magnitude of whole numbers, integers, rational numbers and real numbers including the use of comparative language and sets of objects.

F. Identifies and demonstrates an understanding of and uses of a variety of models and objects for representing numbers (e.g., fraction strips, diagrams, patterns, shaded regions, number lines).

G. Uses a variety of concrete and visual representations to demonstrate the connections between operations and algorithms.
H. Identifies, demonstrates and applies knowledge of counting techniques, including combinations, to quantify situations and solve math problems (e.g., to include forward, backward and skip counting, with or without models).

I. Identifies, represents and applies knowledge of place value (e.g., to compose and decompose numbers), rounding and other number properties to perform mental mathematics and computational estimation with automaticity.

J. Demonstrates a thorough understanding of fractions, including the use of various representations to teach fractions and operations involving fractions.

K. Uses a variety of strategies to generate and solve problems that involve one or more steps, with fluency.

Competency 003 (Patterns and Algebra):

The teacher understands concepts related to patterns, relations, functions and algebraic reasoning. The beginning teacher:

A. Illustrates relations and functions using concrete models, tables, graphs and symbolic and verbal representations, including real-world applications.

B. Demonstrates an understanding of the concept of linear function using concrete models, tables, graphs and symbolic and verbal representations.

C. Understands how to use algebraic concepts and reasoning to investigate patterns, make generalizations, formulate mathematical models, make predictions and validate results.

D. Formulates implicit and explicit rules to describe and construct sequences verbally, numerically, graphically and symbolically.

E. Knows how to identify, extend, and create patterns using concrete models, figures, numbers and algebraic expressions.

F. Uses properties, graphs, linear and nonlinear functions and applications of relations and functions to analyze, model and solve problems in mathematical and real-world situations.

G. Translates problem-solving situations into expressions and equations involving variables and unknowns.

H. Models and solves problems, including those involving proportional reasoning, using concrete, numeric, tabular, graphic and algebraic methods (e.g., using ratios and percents with fractions and decimals).
I. Determines the linear function that best models a set of data.

J. Understands and describes the concept of and relationships among variables, expressions, equations, inequalities and systems in order to analyze, model and solve problems.

K. Applies algebraic methods to demonstrate an understanding of whole numbers using any of the four basic operations.

Competency 004 (Geometry and Measurement):

The teacher understands concepts and principles of geometry and measurement. The beginning teacher:

A. Applies knowledge of spatial concepts such as direction, shape and structure.

B. Identifies, uses, understands and models the development of formulas to find lengths, perimeters, areas and volumes of geometric figures.

C. Uses the properties of congruent triangles to explore geometric relationships.

D. Identifies, uses and understands concepts and properties of points, lines, planes, angles, lengths and distances.

E. Analyzes and applies the properties of parallel and perpendicular lines.

F. Uses a variety of representations (e.g., numeric, verbal, graphic, symbolic) to analyze and solve problems involving angles and two- and three dimensional figures such as circles, triangles, polygons, cylinders, prisms and spheres.

G. Uses symmetry to describe tessellations and shows how they can be used to illustrate geometric concepts, properties and relationships.

H. Understands measurement concepts and principles, including methods of approximation and estimation, and the effects of error on measurement.

I. Explains, illustrates, selects and uses appropriate units of measurement to quantify and compare time, temperature, money, mass, weight, area, capacity, volume, percent, speed and degrees of an angle.

J. Uses translations, rotations and reflections to illustrate similarities, congruencies and symmetries of figures.

K. Develops, justifies and uses conversions within and between measurement systems.
L. Understands logical reasoning, justification and proof in relation to the axiomatic structure of geometry and uses reasoning to develop, generalize, justify and prove geometric relationships.

M. Understands attributes of various polygons, including names and how sides and angles of the polygon affect its attributes.

N. Partitions or decomposes polygons to express areas as fractions of a whole or to find areas of nonstandard polygons.

O. Demonstrates the value and relationships of United States coins and bills and uses appropriate symbols to name the value of a collection.

P. Identifies, uses and understands the concepts and properties of geometric figures and their relationships.

Q. Describes the key attributes of the coordinate plane and models the process of graphing ordered pairs.

Competency 005 (Probability and Statistics):

The teacher understands concepts related to probability and statistics and their applications. The beginning teacher:

A. Investigates and answers questions by collecting, organizing and displaying data in a variety of formats as described in the Texas Essential Knowledge and Skills (TEKS) and draws conclusions from any data graph.

B. Demonstrates an understanding of measures of central tendency (e.g., mean, median, mode) and range and uses those measures to describe a set of data.

C. Explores concepts of probability through data collection, experiments and simulations.

D. Uses the concepts and principles of probability to describe the outcome of simple and compound events.

E. Determines probabilities by constructing sample spaces to model situations.

F. Applies deep knowledge of the use of probability, in different scenarios, to make observations, draw conclusions and create relationships.

G. Solves a variety of probability problems using combinations and geometric probability (e.g., probability as the ratio of two areas).
H. Supports arguments, makes predictions and draws conclusions using summary statistics and graphs to analyze and interpret one-variable data.

I. Applies knowledge of designing, conducting, analyzing and interpreting statistical experiments to investigate real-world problems.

J. Generates, simulates and uses probability models to represent situations.

K. Uses the graph of the normal distribution as a basis for making inferences about a population.

Competency 006 (Mathematical Processes):

The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems and make mathematical connections within and outside of mathematics. The beginning teacher:

A. Understands the role of logical reasoning in mathematics and uses formal and informal reasoning to explore, investigate and justify mathematical ideas.

B. Applies correct mathematical reasoning to derive valid conclusions from a set of premises.

C. Applies principles of inductive reasoning to make conjectures and uses deductive methods to evaluate the validity of conjectures.

D. Evaluates the reasonableness of a solution to a given problem.

E. Understands connections among concepts, procedures and equivalent representations in areas of mathematics (e.g., algebra, geometry).

F. Recognizes that a mathematical problem can be solved in a variety of ways and selects an appropriate strategy for a given problem.

G. Expresses mathematical statements using developmentally appropriate language, standard English, mathematical language and symbolic mathematics.

H. Communicates mathematical ideas using a variety of representations (e.g., numeric, verbal, graphic, pictorial, symbolic, concrete).

I. Demonstrates an understanding of the use of visual media such as graphs, tables, diagrams and animations to communicate mathematical information.

J. Demonstrates an understanding of estimation, including the use of compatible numbers, and evaluates its appropriate uses.
K. Knows how to use mathematical manipulatives and a wide range of appropriate technological tools to develop and explore mathematical concepts and ideas.

L. Demonstrates knowledge of the history and evolution of mathematical concepts, procedures and ideas.

M. Recognizes the contributions that different cultures have made to the field of mathematics and the impact of mathematics on society and cultures.

N. Demonstrates an understanding of financial literacy concepts and their application as these relate to teaching students (e.g., describes the basic purpose of financial institutions; distinguishes the difference between gross and net income; identifies various savings options; defines different types of taxes; identifies the advantages and disadvantages of different methods of payments, savings and credit uses and responsibilities).

O. Applies mathematics to model and solve problems to manage financial resources effectively for lifetime financial security, as it relates to teaching students (e.g., distinguishes between fixed and variable expenses, calculates profit in a given situation, develops a system for keeping and using financial records, describes actions that might be taken to develop and balance a budget when expenses exceed income).

**Required Reading and Textbook(s):**

No text is required for this course. Students are required to sign up for an access code to mymathlab. All homework assignments, test, lecture videos and an online text will be available on mymathlab. Here are the instructions:
To register for Math 4305:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor’s course ID: roberts19835, and Continue.
5. Enter your existing Pearson account username and password to Sign In.
   You have an account if you have ever used a MyLab or Mastering product.
   » If you don’t have an account, select Create and complete the required fields.
6. Select an access option.
   » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
   » If available for your course,
     • Buy access using a credit card or PayPal.
     • Get temporary access.
   If you’re taking another semester of a course, you skip this step.
7. From the You’re Done! page, select Go To My Courses.
8. On the My Courses page, select the course name Math 4305 to start your work.

To sign in later:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select the course name Math 4305 to start your work.

To upgrade temporary access to full access:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select Upgrade access for Math 4305.
5. Enter an access code or buy access with a credit card or PayPal.
COURSE REQUIREMENTS

The student will be responsible for homework assignments, online discussions, midterm, final exam, and presentations.

Grading Criteria Rubric and Conversion

Homework (100 points)
Presentations (10 x 20) (200 points)
Online Discussions (5 x 20) (100 points)
Midterm (300 points)
Final (300 points)
Total: 1000 Points

Rubric for presentations:

<table>
<thead>
<tr>
<th>Understanding of mathematical concept (10 points)</th>
<th>Excellent</th>
<th>Average</th>
<th>Poor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of technology/manipulatives (6 points)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction with class/audience (4 points)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rubric for online discussions:

<table>
<thead>
<tr>
<th>Understanding of mathematical concept (10 points)</th>
<th>Excellent</th>
<th>Average</th>
<th>Poor</th>
<th>Score</th>
</tr>
</thead>
</table>
Posting of Grades
Student will receive instant feedback on progress on mymathlab for the homework assignments and tests (midterm and final exams). The other assignments’ grades will also be posted on mymathlab.

COURSE OUTLINE AND CALENDAR
Complete Course Calendar

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aug 26</td>
<td>Aug 27</td>
<td>Aug 28 Face-to-face meeting</td>
<td>Aug 29</td>
</tr>
<tr>
<td>Week 2</td>
<td>Sep 2</td>
<td>Sep 3</td>
<td>Sep 4 Face-to-face meeting</td>
<td>Sep 5</td>
</tr>
<tr>
<td></td>
<td>Labor day</td>
<td>No class</td>
<td>Homework on Chapters 1+2 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sep 9</td>
<td>Sep 10</td>
<td>Presentation 1 due</td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>Sep 16</td>
<td>Sep 17</td>
<td>Sep 11 Face-to-face meeting</td>
<td>Sep 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapters 3+4 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 2 due</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>Sep 23</td>
<td>Sep 24</td>
<td>Sep 18 Face-to-face meeting</td>
<td>Sep 19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapters 5+6 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 3 due</td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td>Sep 30</td>
<td>Oct 1</td>
<td>Oct 2 Face-to-face meeting</td>
<td>Oct 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapter 8 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 5 due</td>
<td></td>
</tr>
<tr>
<td>Week 6</td>
<td>Oct 7</td>
<td>Oct 8</td>
<td>Oct 9</td>
<td>Oct 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Oct 14</td>
<td>Oct 15</td>
<td>Oct 16</td>
<td>Oct 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Proctored Midterm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapter 10 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 6 due</td>
<td></td>
</tr>
<tr>
<td>Week 10</td>
<td>Oct 28</td>
<td>Oct 29</td>
<td>Oct 30</td>
<td>Oct 31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapter 11 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 7 due</td>
<td></td>
</tr>
<tr>
<td>Week 11</td>
<td>Nov 4</td>
<td>Nov 5</td>
<td>Nov 6</td>
<td>Nov 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapter 12 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 8 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Online discussion 1 due</td>
<td></td>
</tr>
<tr>
<td>Week 12</td>
<td>Nov 11</td>
<td>Nov 12</td>
<td>Nov 13</td>
<td>Nov 14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapter 13 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 9 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Online discussion 2 due</td>
<td></td>
</tr>
<tr>
<td>Week 13</td>
<td>Nov 18</td>
<td>Nov 19</td>
<td>Nov 20</td>
<td>Nov 21</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Homework on Chapter 14 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Online discussion 3 due</td>
<td></td>
</tr>
<tr>
<td>Week 14</td>
<td>Nov 25</td>
<td>Nov 26</td>
<td>Nov 27</td>
<td>Nov 28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face class</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Online discussion 4 due</td>
<td></td>
</tr>
<tr>
<td>Week 15</td>
<td>Dec 2</td>
<td>Dec 3</td>
<td>Dec 4</td>
<td>Dec 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Presentation 10 due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Review</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Online discussion 5 due</td>
<td></td>
</tr>
<tr>
<td>Week 16</td>
<td>Dec 9</td>
<td>Dec 10</td>
<td>Dec 11</td>
<td>Dec 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Face-to-face meeting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Proctored final exam</td>
<td></td>
</tr>
</tbody>
</table>

Important University dates:
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUG 22 THU</td>
<td>Fall 2019 Convocation</td>
<td>22 Aug @ 09:30 am</td>
</tr>
<tr>
<td>AUG 23 FRI</td>
<td>Classes End for Minimester</td>
<td>23 Aug @ All-day</td>
</tr>
<tr>
<td></td>
<td>Teacher Education Program Info Session</td>
<td>23 Aug @ 01:30 pm</td>
</tr>
<tr>
<td>AUG 26 MON</td>
<td>Add, Drop, and Late Registration Begins for 16- and First 8-Week CI</td>
<td>26 Aug @ All-day</td>
</tr>
<tr>
<td></td>
<td>Classes Begin for Fall Semester</td>
<td>26 Aug @ All-day</td>
</tr>
<tr>
<td></td>
<td>1st Day of Class Pictures in the Lobby</td>
<td>26 Aug @ 09:00 am</td>
</tr>
<tr>
<td>AUG 27 TUE</td>
<td>Breakfast in the Library sponsored by CPD</td>
<td>27 Aug @ 09:00 am</td>
</tr>
<tr>
<td></td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>27 Aug @ 11:00 am</td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>27 Aug @ 02:00 pm</td>
</tr>
<tr>
<td>AUG 28 WED</td>
<td>Deadline for Add, Drop, and Late Registration for 16- and First 8-Week CI</td>
<td>28 Aug @ All-day</td>
</tr>
<tr>
<td>SEP 2 MON</td>
<td>University closed for the observance of Labor Day</td>
<td>02 Sep @ All-day</td>
</tr>
<tr>
<td>SEP 3 TUE</td>
<td>Deadline to Drop First 8-Week Classes with No Record</td>
<td>03 Sep @ All-day</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>03 Sep</td>
<td>Deadline to Drop First 8-Week Classes with No Record</td>
<td></td>
</tr>
<tr>
<td>03 Sep</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td></td>
</tr>
<tr>
<td>03 Sep</td>
<td>Campus Cupboard (WH 109)</td>
<td></td>
</tr>
<tr>
<td>04 Sep</td>
<td>Stress Less for Success</td>
<td></td>
</tr>
<tr>
<td>10 Sep</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td></td>
</tr>
<tr>
<td>10 Sep</td>
<td>Campus Cupboard (WH 109)</td>
<td></td>
</tr>
<tr>
<td>11 Sep</td>
<td>Deadline to drop 16-Week Classes with No Record</td>
<td></td>
</tr>
<tr>
<td>11 Sep</td>
<td>Deadline to drop 16-Week Classes with No Record</td>
<td></td>
</tr>
<tr>
<td>13 Sep</td>
<td>Ninth Annual Central Texas Military History Symposium</td>
<td></td>
</tr>
<tr>
<td>17 Sep</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td></td>
</tr>
<tr>
<td>17 Sep</td>
<td>Campus Cupboard (WH 109)</td>
<td></td>
</tr>
<tr>
<td>18 Sep</td>
<td>Work for the Fair Workshop</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Location</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>SEP 19</td>
<td>CENTEX Scale Modelers Society</td>
<td>Founder's Hall-Bernie Beck</td>
</tr>
<tr>
<td>SEP 24</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>WH Lobby</td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>WH 109</td>
</tr>
<tr>
<td>SEP 25</td>
<td>HireWarriors Internship &amp; Career Fair</td>
<td>Bill Yowell Conference Center</td>
</tr>
<tr>
<td>OCT 1</td>
<td>Deadline for Teacher Education and Professional Certification Applic...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>WH Lobby</td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>WH 109</td>
</tr>
<tr>
<td>OCT 4</td>
<td>Deadline to Drop First 8-Week Classes with a Quit (Q) or Withdraw (W)</td>
<td></td>
</tr>
<tr>
<td>OCT 7</td>
<td>Last day to register to vote.</td>
<td></td>
</tr>
<tr>
<td>OCT 8</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>WH Lobby</td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>WH 109</td>
</tr>
<tr>
<td>OCT 11</td>
<td>Teacher Mock Interviews</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Time</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>OCT 15</td>
<td>Deadline for Clinical Teaching/Practicum Applications</td>
<td>All-day</td>
</tr>
<tr>
<td></td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>11:00 am</td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>02:00 pm</td>
</tr>
<tr>
<td>OCT 17</td>
<td>CENTEX Scale Modelers Society</td>
<td>06:00 pm</td>
</tr>
<tr>
<td>OCT 18</td>
<td>Classes End for First 8-Week Session</td>
<td>All-day</td>
</tr>
<tr>
<td></td>
<td>Deadline to Withdraw from University for First 8-Week Classes (WF)</td>
<td>All-day</td>
</tr>
<tr>
<td>OCT 21</td>
<td>Classes Begin for Second 8-Week Session</td>
<td>All-day</td>
</tr>
<tr>
<td></td>
<td>Class Schedule Published for Spring Semester</td>
<td>All-day</td>
</tr>
<tr>
<td></td>
<td>First day of early voting.</td>
<td>All-day</td>
</tr>
<tr>
<td></td>
<td>Add, Drop, and Late Registration Begins for Second 8-Week Classes</td>
<td>All-day</td>
</tr>
</tbody>
</table>
Deadline for Faculty Submission of First 8-Week Class Final Grades (…)
📆 22 Oct @ All-day
Coffee with the Blue Coats (WH Lobby)
📆 22 Oct @ 11:00 am
Campus Cupboard (WH 109)
📆 22 Oct @ 02:00 pm
Deadline for Add, Drop, and Late Registration for Second 8-Week Class...
📆 23 Oct @ All-day
Deadline for Graduation Application for Ceremony Participation
📆 25 Oct @ All-day
Deadline to Drop Second 8-Week Classes with No Record
📆 28 Oct @ All-day
LinkedIn Workshop
📆 29 Oct @ 11:00 am 📍 Bill Yowell Conference Center
Coffee with the Blue Coats (WH Lobby)
📆 29 Oct @ 11:00 am
Campus Cupboard (WH 109)
📆 29 Oct @ 02:00 pm
Deadline for GRE/GMAT Scores to Graduate School
📆 01 Nov @ All-day
Last day of early voting.
📆 01 Nov @ 07:00 pm
Registration Opens for Spring Semester
📆 04 Nov @ All-day
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 5</td>
<td>Federal Resume Workshop</td>
<td>11:00 am</td>
<td>Bernie Beck Lecture Hall</td>
</tr>
<tr>
<td>Nov 5</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>11:00 am</td>
<td></td>
</tr>
<tr>
<td>Nov 5</td>
<td>Campus Cupboard (WH 109)</td>
<td>02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Nov 5</td>
<td>Election Day</td>
<td>07:00 pm</td>
<td></td>
</tr>
<tr>
<td>Nov 8</td>
<td>Deadline to Drop 16-Week Classes with a Quit (Q) or Withdraw (W)</td>
<td>All-day</td>
<td></td>
</tr>
<tr>
<td>Nov 11</td>
<td>University closed for the observance of Veteran’s Day</td>
<td>All-day</td>
<td></td>
</tr>
<tr>
<td>Nov 12</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>11:00 am</td>
<td></td>
</tr>
<tr>
<td>Nov 12</td>
<td>Campus Cupboard (WH 109)</td>
<td>02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Nov 15</td>
<td>Etiquette Lunch</td>
<td>11:00 am</td>
<td>Bernie Beck Lecture Hall</td>
</tr>
<tr>
<td>Nov 19</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>11:00 am</td>
<td></td>
</tr>
<tr>
<td>Nov 19</td>
<td>Campus Cupboard (WH 109)</td>
<td>02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Nov 21</td>
<td>CENTEX Scale Modelers Society</td>
<td>06:00 pm</td>
<td>Founder's Hall-Bernie Beck</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Nov 22</td>
<td>Deadline for Final Committee-Edited Thesis with Committee Approval</td>
<td>22 Nov @ All-day</td>
<td></td>
</tr>
<tr>
<td>Nov 26</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>26 Nov @ 11:00 am</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>26 Nov @ 02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Nov 28</td>
<td>University closed for the observance of Thanksgiving</td>
<td>28 Nov — 29 Nov</td>
<td>All-day</td>
</tr>
<tr>
<td>Nov 29</td>
<td>Deadline to Drop Second 8-Week Classes with a Quit (Q) or Withdrawal</td>
<td>29 Nov @ All-day</td>
<td></td>
</tr>
<tr>
<td>Dec 3</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>03 Dec @ 11:00 am</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>03 Dec @ 02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Dec 10</td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>10 Dec @ 11:00 am</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>10 Dec @ 02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 13</td>
<td>Deadline for Degree Conferral Applications to the Registrar's Office</td>
<td>13 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td>Dec 13</td>
<td>Deadline to Withdraw from University for 16- and Second 8-Week Clin</td>
<td>13 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall Semester Ends</td>
<td>13 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deadline for Applications for Tuition Rebate for Fall Graduation (5pm)</td>
<td>13 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall Commencement Ceremony</td>
<td>13 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall Commencement Ceremony</td>
<td>13 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td>Dec 17</td>
<td>Deadline to Clear Thesis Office for Fall Semester</td>
<td>17 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deadline for Faculty Submission of 16-Week and Second 8-Week Fin</td>
<td>17 Dec @ All-day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coffee with the Blue Coats (WH Lobby)</td>
<td>17 Dec @ 11:00 am</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Campus Cupboard (WH 109)</td>
<td>17 Dec @ 02:00 pm</td>
<td></td>
</tr>
<tr>
<td>Dec 19</td>
<td>CENTEX Scale Modelers Society</td>
<td>19 Dec @ 06:00 pm</td>
<td>Founder's Hall-Bernie Beck</td>
</tr>
<tr>
<td>Dec 23</td>
<td>University closed for Winter Break</td>
<td>23 Dec – 01 Jan</td>
<td>All-day</td>
</tr>
</tbody>
</table>
TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements
All students are expected to have access to a laptop/computer with internet access and Excel available to use. All the course materials will be completed online, so it is imperative that the student has access to CANVAS and MYMATHLAB. Student will be required to use ExamEdge for the labs. Each student will receive login credential for ExamEdge.

This course will use the A&M-Central Texas Instructure Canvas learning management system. Logon to A&M-Central Texas Canvas [https://tamuct.instructure.com/].

Username: Your MyCT username (xx123 or everything before the "@" in your MyCT e-mail address)
Password: Your MyCT password

Canvas Support
Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.
For issues related to course content and requirements, contact your instructor.

Other Technology Support
For log-in problems, students should contact Help Desk Central.
24 hours a day, 7 days a week:
Email: helpdesk@tamu.edu
Phone: (254) 519-5466
Web Chat: [http://hdc.tamu.edu]

Please let the support technician know you are an A&M-Central Texas student.

The course will also use mymathlab:

Purchase an access code to mymathlab at:

[www.mymathlab.com](http://www.mymathlab.com)

Student will also be required to utilize video conferencing software (skype/webex/google hangouts) for tutoring/office hours.

---

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy.
If you discover that you need to drop this class, you must complete a Drop Request Form [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].
Professors cannot drop students; this is always the responsibility of the student. The Registrar’s Office will provide a deadline on the Academic Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar’s Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar’s Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

**Academic Integrity.**

Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student’s academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student’s work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university’s Office of Student Conduct. Ignorance of the university’s standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

**Academic Accommodations.**

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Office of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university’s programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Office of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.

For more information please visit our [Access & Inclusion](https://www.tamuct.edu/student-affairs/access-inclusion.html) web page.

**Important information for Pregnant and/or Parenting Students.**

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education’s Office of Civil Rights, the Dean of Student Affairs’ Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more
information, please visit the Student Affairs web page [https://www.tamuct.edu/student-affairs/index.html]. Students may also contact the institution’s Title IX Coordinator. If you would like to read more about these requirements and guidelines online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University’s Title IX Coordinator.

Tutoring.
Tutoring is available to all A&M-Central Texas students, both on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Programs at (254) 519-5796, or by emailing Dr. DeEadra Albert-Green at deeadra.albertgreen@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive FREE online tutoring and writing support. This tool provides tutoring in over 40 subject areas. Access Tutor.com through Canvas.

University Writing Center.
Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free workspace open to all TAMUCT students from 10:00 a.m.-5:00 p.m. Monday thru Thursday with satellite hours in the University Library Monday thru Thursday from 6:00-9:00 p.m. This semester, the UWC is also offering online only hours from 12:00-3:00 p.m. on Saturdays.

Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via WCOnline at [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu for any assistance needed with scheduling.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing
more effective composing practices. By providing a practice audience for students’ ideas and writing, our tutors highlight the ways in which they read and interpret students’ texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

If you have any questions about the UWC, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu.

University Library.
The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our Library website [http://tamuct.libguides.com/index].

OPTIONAL POLICY STATEMENTS:
A Note about Sexual Violence at A&M-Central Texas
Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).
Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don’t agree with their behaviors and tell survivors we will support them. Your actions matter. Don’t be a bystander; be an agent of change. For additional information on campus policy and resources visit the Title IX webpage [https://www.tamuct.edu/departments/compliance/titleix.php].

INSTRUCTOR POLICIES.
The deadlines are clearly outlined in the weekly schedule. Please complete assignments on time. No extensions will be granted.

Copyright Notice.
Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas’ Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

Copyright. 2019 by Dr. Mienie Roberts at Texas A&M University-Central Texas, (College of Arts and Sciences; 1001 Leadership Place, Killeen, TX 76549; 903-705-9703; dekock@tamuct.edu