

University of North Texas at Dallas

Summer 2016

EDCI 5900-021 Data Analysis, Geometry, and Measurement for Teachers of Grades 4-6

Department: Teacher Education and Administration

Instructor: Dr. Gwendolyn Johnson

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Office Hours: Mondays and Wednesdays noon to 2:00

Class Location: Founders Hall room _____

Class Times: Mondays and Wednesdays 10:00 to noon

Course Catalog Description:

This course is intended for individuals who possess a Texas teaching certificate and who will be teaching mathematics during the following academic year. The purpose of the course is to deepen teachers' pedagogical content knowledge related to the geometry and measurement concepts that are required by the Texas Essential Knowledge and Skills in grades 4, 5, and 6.

Textbook:

Beckmann, S. (2014). *Mathematics for Elementary Teachers with Activities* (fourth edition).

Learning Objectives:

1. Students will learn content related to angles and two-dimensional shapes and will evaluate various strategies for teaching children about two-dimensional shapes.
2. Students will learn content related to area and perimeter and will evaluate various strategies for teaching children about area and perimeter.
3. Students will learn content related to volume of three-dimensional shapes and will evaluate various strategies for teaching children about volume.
4. Students will learn content related to measurement including length, time, capacity, and mass and will evaluate various strategies for teaching children about measurement.
5. Students will learn content related to data analysis including stem-and-leaf plots and scatterplots and will evaluate various strategies for teaching children about data analysis.

INTASC Standards:

InTASC Standard #4 Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make these aspects of the discipline meaningful for learners to ensure mastery of the content.

InTASC Standard #5 Application of Content The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

Texas Essential Knowledge and Skills:

- 4.5 D Solve problems related to perimeter and area of rectangles where dimensions are whole numbers
- 4.6 D Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size
- 4.7 C Determine the measures of angles in degrees using a protractor
- 4.8 C Solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division
- 5.4 H Represent and solve problems related to perimeter, area and/or volume
- 5.9 C Solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot
- 6.8 D Area and volume – dimensions are positive rational numbers

Learning Resources:

UNT Dallas Learning Commons

<http://www.untDallas.edu/aas/tutoring>

Blackboard Learn is online at <https://learn.untDallas.edu>

Grading:

| | |
|-------------------|------------------|
| Midterm Exam | 100 points |
| Final Exam | 100 points |
| Project & Paper | 150 points |
| Presentation | 50 points |
| Attendance | 50 points |
| Group Assignments | <u>50 points</u> |
| | 500 points total |

Course Outline

| Dates | In Class | On Your Own |
|--|---|---|
| July 11-15 Two-D Shapes | Monday: <ul style="list-style-type: none"> • PowerPoint on Section 10.2 • Group paper: Two-dimensional shapes • Class Activity 10S Wednesday: <ul style="list-style-type: none"> • PowerPoint on Section 10.5 • Class Activity 10T | <ol style="list-style-type: none"> 1. Read and do problems in sections 10.2 and 10.5 2. Decide on topic for “Revising Assignments” project 3. With Dr. Johnson, identify an article related to your topic. Read that article. |
| July 18-22 Area and Perimeter | Monday: <ul style="list-style-type: none"> • Group paper: Students’ issues with area, perimeter • Class Activities 11B and 12C Wednesday: <ul style="list-style-type: none"> • Discuss problems from sections 12.1, 12.2, 12.8 • Class Activities 12R and 12S • Midterm Exam | <ol style="list-style-type: none"> 1. Read and do problems in sections 12.1, 12.2, and 12.8 2. Arrange a date for your article presentation and plan it. 3. Identify two assignments that you give to students that need revision. |
| July 25-29 Volume | Monday: <ul style="list-style-type: none"> • Article Presentations • Class Activity 11I Wednesday: <ul style="list-style-type: none"> • Article Presentations • Discuss problems from sections 11.1, 11.2, 13.3 • Class Activity 13K | <ol style="list-style-type: none"> 1. Read and do problems in sections 11.1, 11.2 and 13.3 2. Work on the paper and turn in what you have written up to this point. |
| August 1-5 Measurement | Monday: <ul style="list-style-type: none"> • Article Presentations • Class Activity 11C Wednesday: <ul style="list-style-type: none"> • Article Presentations • Discuss problems from sections 11.3 and 11.4 • Class Activity 11F | <ol style="list-style-type: none"> 1. Read and do problems in sections 11.3 and 11.4 2. Work on the paper and revise the two assignments. |
| Aug. 8-12 Data Analysis | Monday: <ul style="list-style-type: none"> • Class Activity 15E • Discuss problems from section 15.2 Wednesday: <ul style="list-style-type: none"> • Final Exam | <ol style="list-style-type: none"> 1. Read and do problems in section 15.2 2. Finish and turn in the paper and the two revised assignments. |

Assignments and Assessments

Exams

The midterm and final exam will be based on material from the Beckmann textbook and mathematics content discussed in class.

“Revising Assignments” Project and Paper

Each student will identify a mathematical topic to research. The student and Dr. Johnson will jointly identify an article for the student to read and present to the class. The student will identify two assignments that he or she uses with children. The student will revise these assignments based on what was learned from the article and the Beckmann textbook. The student will write a paper describing the problems faced in teaching this topic, describing what was learned from the article and textbook, and describing how and why the two assignments were revised. Both the original and revised assignments will be submitted.

Presentation

Each student will read one article for the “Revising Assignments” project and present this article to the class. The student should prepare material ahead of time, such as a handout or PowerPoint presentation to help the class understand the article.

Group Assignments

Group Papers

During class, students will be divided into groups and asked to write a “group paper” that outlines their experiences teaching children about a particular mathematics topic. Students in the group will receive the same grade for the group paper.

Class Activities

During class, students will be divided into groups and asked to complete a Class Activity from the Beckmann textbook. All students in the group will receive the same grade for the class activity.

Attendance

Students will receive credit for attending and participating in class. A student who misses class for any reason will not be given credit for attending the class. Participating in group work is required.

Policies and Procedures

Blackboard

Students are expected to login to Blackboard at least twice a week to check for announcements, download documents, upload assignments, and check grades.

Children on Campus

University policy does NOT allow you to bring your children to class. The university policy states, "UNT Dallas students may not bring children to campus and leave them unattended. UNT Dallas students may not bring children to campus and take them to class."

Diversity/Tolerance Policy

Students are encouraged to contribute their perspectives and insights to class discussions in the online environment. However, offensive and inappropriate language (swearing) and remarks of offensive to others of particular nationalities, ethnic groups, sexual preferences religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Dean of Students as the instructor deems appropriate.

Inclement Weather and Online Participation

Online classes may or may not be effected by campus closures due to inclement weather. Unless otherwise notified by your instructor via e-mail, online messaging, or online announcement, students should assume that assignments are due as scheduled.

Online "Nettiquette"

In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. Emails, Discussion Board messages and/or any other forms of written communication in the online environment should use proper "netiquette" (i.e., no writing in all caps (usually denotes yelling), no curse words, and no "flaming" messages (angry, personal attacks).

Racial, ethnic, or gender slurs will not be tolerated, nor will pornography of any kind.

Any violation of online netiquette may result in a loss of points or removal from the course and referral to the Dean of Students, including warnings and other sanctions in accordance with the University's policies and procedures. Refer to the Student Code of Student Rights Responsibilities and Conduct at <http://www.untDallas.edu/osa/policies>. Respect is a given principle in all online communication. Therefore, please be sure to proofread all of your written communication prior to submission.

Online Attendance and Participation

The University attendance policy is in effect for this course. Class attendance in the Blackboard classroom and participation is expected because the class is designed as a shared learning experience, and because essential information not in the textbook will be discussed in the discussion board. Online presence and participation in all class discussions is essential to the integration of course material and your ability to demonstrate proficiency.

Attendance for this online or hybrid course is considered when you are logged in and active in Blackboard, i.e., posting assignments, taking quizzes, or completing Discussion Boards. To maintain financial aid award eligibility, activity must occur before the census date of the session or term of the course. Refer to <http://www.untDallas.edu/registrar> for specific dates. If you are absent/not active in the course shell, it is YOUR responsibility to let the instructor know immediately, upon your return, the reason for your absence if it is to be excused. All instructors must follow university policy 7.005

covering excused absences; however, it is the instructor's discretion, as outlined in the course syllabus, of how unexcused absences may or may not count against successful completion of the course

Students with Disabilities (ADA Compliance):

Chapter 7(7.004) Disability Accommodations for Students

The University of North Texas at Dallas makes reasonable academic accommodation for students with disabilities. Students seeking accommodations must first register with the Disability Services Office (DSO) to verify their eligibility. If a disability is verified, the DSO will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, DSO notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet/communicate with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Disability Services Office website at <http://www.untdallas.edu/disability>. You may also contact them by phone at 972-338-1777; by email at UNTDdisability@untdallas.edu or at Building 2, room 204.

Blackboard Learn Accessibility Statement:

University of North Texas at Dallas is committed to ensuring its online and hybrid courses are usable by all students and faculty including those with disabilities. If you encounter any difficulties with technologies, please contact our ITSS Department. To better assist them, you would want to have the operating system, web browser and information on any assistive technology being used. Blackboard Learn course management system's accessibility statement is also provided: <http://www.blackboard.com/Platforms/Learn/Resources/Accessibility.aspx>

NOTE: Additional instructional technology tools, such as Turnitin, Respondus, Panopto, and publisher cartridge content (i.e. MyLab, Pearson, etc.) may NOT be fully ADA compliant. Please contact our Disability Office should you require additional assistance utilizing any of these tools.

Technology Requirements:

In order to successfully access the materials in an online or hybrid course, UNT Dallas advises that your computer be equipped with the minimum system requirements.

Blackboard Learn 9.1 is the platform software for this course. Blackboard Learn supports major web browsers such as Windows Internet Explorer, Apple Safari, Mozilla Firefox, and Google Chrome. However, since the latter two are updated continually, some recent versions may not be compatible. If you experience difficulty accessing or using components of the course, try using Internet Explorer. Also, no matter what browser you use, always enable pop-ups. For more information see:

- <http://www.untdallas.edu/dlit/ecampus/requirements>
- <https://blackboard.secure.force.com/publicbarticleview?id=kAB700000008Oom>
- https://learn.unt.edu/bbcswebdav/institution/BrowserCheck/check_full.html