# MATH 1353: Geometry and Measurement for Teachers

## Department: Mathematics | School: Liberal Arts and Life Sciences

### Instructor Name: Dr. Gwendolyn Johnson
Office Location: Founders Hall room 232
Office Phone: 972-338-1320
Email Address: Gwendolyn.johnson@untdallas.edu

### Office Hours:
- Mondays and Wednesdays 11:30 to 1:00 and 2:30 to 3:30 (I can stay later if needed.)
- Tuesdays 1:00 to 2:30 and 4:00 to 5:30
- Thursdays and Fridays by appointment

### Classroom Location: Founders Hall room 243
Class Meeting Days & Times: Mondays and Wednesdays 1:00 to 2:20

### Course Description:
This course is intended for individuals seeking EC-6 or Grades 4-8 teaching certification. (Students seeking Math 4-8 certification must take MATH 4060.) This class will cover basic geometry (types of angles and polygons), similar figures, area, perimeter, circumference, the coordinate plane, transformations, the Pythagorean theorem, measurement (customary and metric), and three-dimensional figures.

### Prerequisites:
- TSI Math-complete or Math 1010 with a grade of C or better

### Required Text:
There is no textbook for this class. All materials will be posted in Blackboard.

### Learning Resources:
- **Blackboard Learn:**
  - [https://learn.untdallas.edu/](https://learn.untdallas.edu/)
  - Assignments, grades, and PowerPoint presentations will be posted in Blackboard. Students are expected to access Blackboard regularly.
- **UNT Dallas Math Lab**
  - Building 1 room 336
  - Free math tutoring and homework help

### Course Goals or Overview:
The goals of this course are as follows -
1. To prepare teacher candidates for the mathematics portion of the TExES EC-6 Core Subjects test
2. To equip teacher candidates with the mathematics content knowledge needed to teach elementary school.

### Learning Objectives/Outcomes:
At the end of this course, students will be able to:
1. Describe the meanings of basic geometric terms such as parallel lines, perpendicular lines, acute, right, and obtuse angles, etc.
2. Describe the types of and properties of polygons such as triangles, quadrilaterals, pentagons, and hexagons.
3. Solve problems related to similar figures.
4. Calculate the area and perimeter (or circumference) of triangles, quadrilaterals, circles, and nonstandard shapes.
5. Answer questions and solve problems related to coordinate geometry and transformations.
6. Solve problems related to the Pythagorean Theorem.
7. Solve problems related to the customary (traditional American) and metric systems of measurement.
8. Answer questions and solve problems related to three-dimensional shapes, surface area, and volume.
## Course Outline

Most class meetings will include a group activity. If you miss class, download the activity from Blackboard and turn it in before the next class meeting.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>SLO</th>
<th>In Class</th>
<th>On Your Own</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon. Aug. 21</td>
<td>Lines and Angles</td>
<td>1</td>
<td>PowerPoint 1A: Types of Lines and Angles</td>
<td>Practice 1A</td>
</tr>
<tr>
<td>Wed. Aug. 23</td>
<td>Lines and Angles</td>
<td>1</td>
<td>PowerPoint 1B: Angles Created by Parallel Lines &amp; a Transversal</td>
<td>Practice 1B</td>
</tr>
<tr>
<td>Mon. Aug. 28</td>
<td>Polygons</td>
<td>2</td>
<td>PowerPoint 1C: Triangles &amp; Their Angles; the Triangle Inequality</td>
<td>Practice 1C</td>
</tr>
<tr>
<td>Wed. Aug. 30</td>
<td>Polygons</td>
<td>2</td>
<td>PowerPoint 1D: Quadrilaterals and Their Angles</td>
<td>Practice 1D</td>
</tr>
<tr>
<td>Wed. Sept. 6</td>
<td>Similar Figures and Scale Drawings</td>
<td>3</td>
<td>PowerPoint 1E: Similar Figures and Scale Drawings</td>
<td>Practice 1E</td>
</tr>
<tr>
<td>Mon. Sept. 11</td>
<td>optional</td>
<td></td>
<td>Review and homework help</td>
<td>Unit 1 Homework</td>
</tr>
<tr>
<td><strong>Wed. Sept. 13</strong></td>
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<td><strong>Test #1</strong></td>
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<tr>
<td>Mon. Sept. 18</td>
<td>Area and Perimeter</td>
<td>4</td>
<td>PowerPoint 2A: Group Activities:</td>
<td>Practice 2A</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• What kind of number is the perimeter?</td>
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<td></td>
<td>• Perimeter misconceptions</td>
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<tr>
<td>Wed. Sept. 20</td>
<td>Area and Perimeter</td>
<td>4</td>
<td>PowerPoint 2B: Area of Rectangles and Triangles</td>
<td>Practice 2B</td>
</tr>
<tr>
<td>Mon. Sept. 25</td>
<td>Area and Perimeter</td>
<td>4</td>
<td>PowerPoint 2C: Area of Circles and Trapezoids</td>
<td>Practice 2C</td>
</tr>
<tr>
<td>Wed. Sept. 27</td>
<td>Area and Perimeter</td>
<td>4</td>
<td>PowerPoint 2D: Circumference</td>
<td>Practice 2D</td>
</tr>
<tr>
<td>Wed. Oct. 4</td>
<td>The Coordinate Plane</td>
<td>5</td>
<td>PowerPoint 2F: The Coordinate Plane</td>
<td>Practice 2F</td>
</tr>
<tr>
<td>Mon. Oct. 9</td>
<td>optional</td>
<td></td>
<td>Review and homework help</td>
<td>Unit 2 Homework</td>
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<tr>
<td><strong>Wed. Oct. 11</strong></td>
<td></td>
<td></td>
<td><strong>Test #2</strong></td>
<td></td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>Lessons</td>
<td>Notes</td>
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<tr>
<td>Mon. Oct. 16</td>
<td>Transformations</td>
<td>PowerPoint 3A: Translations &amp; Rotations</td>
<td>Practice 3A</td>
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<tr>
<td>Wed. Oct. 18</td>
<td>Transformations</td>
<td>PowerPoint 3B: Reflections &amp; Dilations</td>
<td>Practice 3B</td>
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<tr>
<td>Mon. Oct. 23</td>
<td>Pythagorean Theorem</td>
<td>PowerPoint 3C: Pythagorean Theorem</td>
<td>Practice 3C</td>
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<tr>
<td>Mon. Oct. 30</td>
<td>Measurement</td>
<td>PowerPoint 3E: Metric System</td>
<td>Practice 3E</td>
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<tr>
<td>Wed. Nov. 1</td>
<td>optional</td>
<td>Review and homework help</td>
<td>Unit 3 Homework</td>
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<tr>
<td><strong>Mon. Nov. 6</strong></td>
<td></td>
<td><strong>Test #3</strong></td>
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<tr>
<td>Wed. Nov. 8</td>
<td>Three-dimensional Figures</td>
<td>PowerPoint 4A: Faces, Edges, Vertices, and Nets</td>
<td>Practice 4A</td>
<td></td>
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<tr>
<td>Mon. Nov. 13</td>
<td>Three-dimensional Figures</td>
<td>PowerPoint 4B: Finding the Area of the Base</td>
<td>Practice 4B</td>
<td></td>
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<tr>
<td>Wed. Nov. 15</td>
<td>Three-dimensional Figures</td>
<td>PowerPoint 4C: Volume of Rectangular Prisms</td>
<td>Practice 4C</td>
<td></td>
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<tr>
<td>Mon. Nov. 20</td>
<td>Three-dimensional Figures</td>
<td>PowerPoint 4D: Volume of Cylinders, Cones, and Pyramids</td>
<td>Practice 4D</td>
<td></td>
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<tr>
<td>Mon. Nov. 27</td>
<td>Three-dimensional Figures</td>
<td>PowerPoint 4E: Volume of Spheres; Dilating 3-D Figures</td>
<td>Practice 4E</td>
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<tr>
<td>Wed. Nov. 29</td>
<td>Three-dimensional Figures</td>
<td>PowerPoint 4F: Surface Area</td>
<td>Practice 4F</td>
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<tr>
<td>Mon. Dec. 4</td>
<td>optional</td>
<td>Review</td>
<td></td>
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<tr>
<td><strong>Wed. Dec. 6</strong></td>
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<td><strong>Test #4</strong></td>
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<tr>
<td>Finals Week</td>
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<td>Comprehensive Final Exam</td>
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</tbody>
</table>
Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Total Points</th>
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</thead>
<tbody>
<tr>
<td>Four Tests (100 points each)</td>
<td>400</td>
</tr>
<tr>
<td>Final Exam (if required)</td>
<td>150</td>
</tr>
<tr>
<td>Homeworks</td>
<td>100</td>
</tr>
<tr>
<td>Attendance</td>
<td>50</td>
</tr>
<tr>
<td>Group Activities</td>
<td>50</td>
</tr>
<tr>
<td>Total:</td>
<td>600 or 750</td>
</tr>
</tbody>
</table>

Grade Determination
A = 90% or better
B = 80 – 89%
C = 70 – 79%
D = 60 – 69%
F = less than 60%

Course Policies

Attendance
Missing class for any reason will affect your attendance grade. There is no such thing as an “excused” absence. You do NOT need to bring doctor’s notes. Arriving late or leaving early will affect your attendance grade. If you will be arriving late or leaving early on a regular basis, please let the instructor know the reason.

Blackboard
You are expected to use Blackboard to check announcements, participate in discussions, check your grades, download documents, and upload your homework. If you need help using Blackboard, please ask the instructor or call the Helpdesk at 972-338-5580.

Grades on Tests and Homework
Tests are usually graded within two business days. Homework is generally graded within one week. You can monitor your progress in the class by checking “My Grades” in Blackboard.

Group Activities
You will be expected to work in groups and to be an active and respective group member. If you miss class, you need to download the activity from Blackboard and turn it in before graded activities are passed back to the class. Once graded activities are passed back to the class, you lose the opportunity to receive credit for the group activity.

Late Homework
A late penalty will be assessed for work turned in after the due date. No work will be accepted after the final exam. Work will not be accepted more than two weeks after the due date.

Make-up Tests
If you must miss a test, please let the instructor know ahead of time. You must take a make-up test within one week of the original test date. The make-up test must be taken in one sitting. (You can’t leave and come back to finish later.)
University Policies and Procedures

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 using any of these tools.

Course Evaluation Policy:
Student’s evaluations of teaching effectiveness is a requirement for all organized classes at UNT Dallas. This short 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 students’ evaluations to be an important part of your participation in this class.

Exam Policy: All tests must be taken on campus (NOT online).

Academic Integrity:
Academic integrity is a hallmark of higher education. You are expected to abide by the University’s code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University’s policies and procedures. Refer to the Student Code of Academic Integrity at http://www.untdallas.edu/sites/default/files/page_level2/pdf/policy/7.002%20Code%20of%20Academic_Integrity.pdf for complete provisions of this code.

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.

Web-based Plagiarism Detection: Please be aware in some online or hybrid courses, students may be required to submit written assignments to Turnitin, a web-based plagiarism detection service, or another method. If submitting to Turnitin, please remove your title page and other personal information.
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.

Inclement Weather and Online Classes: Online classes may or may not be affected 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 “Netiquette:
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.

Diversity/Tolerance Policy:
Students are encouraged to contribute their perspectives and insights to class discussions in the online environment. However, offensive & inappropriate language (swearing) and remarks 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.

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/publickarticleview?id=kAB700000008Oom
- https://learn.unt.edu/bbcswebdav/institution/BrowserCheck/check_full.html