University of North Texas at Dallas

Fall 2016

MATH 1353   Geometry and Measurement for Teachers   3 credit hours

Division: Liberal Arts and Life Sciences

Department: Mathematics and Information Sciences

Instructor: Dr. Gwendolyn Johnson

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Office hours: Mondays and Wednesdays 11:30 to 1:00 and 2:30 to 3:30
Thursdays 3:00-5:30
Tuesdays and Fridays by appointment
Because I often have meetings on campus, I might not be in my office during these hours. Please email me to make sure I will be available before you visit.

Class Location: Building 1 Room 243

Class Times: Mondays and Wednesdays 10:00 to 11:20

Course Catalog Description:

We will study basic geometry, the coordinate plane, the Pythagorean Theorem, polygons, circles, congruence and similarity, transformations, symmetry, perimeter, area, surface area and volume.

Required Materials:

There is no textbook for this class, but you will need to bring a calculator and a ruler to class.

Learning Objectives:

1. Students will describe the <u>types of</u> and <u>properties of</u> two-dimensional shapes such as triangles, quadrilaterals, pentagons, and hexagons.
2. Students will answer questions and solve problems related to the measurement of two-dimensional shapes including perimeter, circumference, area of basic and composite (nonstandard) shapes, the Pythagorean Theorem and similar figures.
3. Students will answer questions and solve problems related to three-dimensional shapes, surface area, and volume.
4. Students will answer questions and solve problems related to coordinate geometry, transformations, and symmetry.
5. Students will solve problems related to the customary (traditional American) and metric systems of measurement.

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.

Learning Resources:

> UNT Dallas Math Lab is located in Bldg 1 room 336.

> UNT Dallas Writing Center can be found at www.unt.edu/wc

> Academic Advising and Student Support is located in Bldg 1, third floor.   972-338-1645

Grading:

Five Tests	500 points
Final Exam	100 points
Homework	100 points
Group Activities	50 points
Attendance	50 points
	800 points total

Course Outline

Dates	Monday	Wednesday	Assignments	Articles
Aug. 22, 24	PPT 1A: Lines & Angles Group Activity: Using Rulers and Protractors	PPT 1B: Polygons and Their Angles Group Activity: Polygons and Their Angles	Practice 1A and 1B	• Measurement of Length • Defining Supports Geometry
Aug 29, 31	PowerPoint 1C: Triangles Group Activity: Tangrams	PowerPoint 1D: Quadrilaterals	Practice 1C and 1D	What's the Big Deal About Vocabulary
Sept. 7		PowerPoint 1E: Similar Figures & Scale Drawings	**Homework #1 due Friday Sept. 9**	
Sept. 12, 14	**Test #1**	PPT 2A: Perimeter Group Activities: • What kind of number is the perimeter? • Perimeter Misconceptions	Practice 2A	Perimeter and Beyond
Sept. 19, 21	PowerPoint 2B: Area Group Activity: Can the perimeter of a square be larger than the area?	PowerPoint 2C: Area and circumference of circles	**Homework #2 due Friday Sept. 23**	
Sept. 26, 28	PowerPoint 2C: Area of nonstandard shapes Group Activity: Using the Moving and Additivity Principles	**Test #2**		
Oct. 3, 5	PowerPoint 3A: Translations & Their Rules	PowerPoint 3B: Reflections & Their Rules	Practice 3A and 3B	
Oct. 10, 12	PowerPoint 3C: Reflections & Their Rules	PowerPoint 3D: Fraction Multiplicat. and Dilations	**Homework #3 due Friday October 14**	
Oct. 15	Midterm grades are viewable online			
Oct 17, 19	**Test #3**	PowerPoint 4A: Customary Measur. (Weight & Length)	Practice 4A	
Oct. 24, 26	PowerPoint 4B: Custom. Measur. (Capacity)	PowerPoint 4C: Metric Measurement	Practice 4B and 4C	
Oct. 31, Nov. 2	PowerPoint 4D: Pythagorean Theorem	Review	**Homework #4 due Friday Nov. 4**	Pythagorean Theorem with Jelly Beans
Nov. 4	Last day to drop with a grade of W (instructor's approval required)			
Nov. 7, 9	**Test #4**	PowerPoint 5A: The 3-D Figures	Practice 5A	Prisms and Pyramids

Nov. 14, 16	PowerPoint 5B: Faces, Edges, and Vertices	PowerPoint 5C: Volume	Practice 5B and 5C	
Nov. 21	PowerPoint 5D: Lateral area and surface area		**Homework #5 due Friday November 25**	
Nov. 28, 30	Review	**Test #5**		
Dec. 5	Exam review			
Finals Week	**Comprehensive final exam**			

Course Policies

Attendance and Participation

It is important to attend class! If you must miss class, it is your responsibility to learn the information by downloading the PowerPoint and practice problems from Blackboard and scheduling an appointment with the instructor.

Participation includes attending class, paying attention to the instructor and other students, asking and answering questions, and volunteering to solve problems at the board. Students who miss class or who arrive late or leave early will lose participation points.

Blackboard

I use Blackboard a lot and expect that you will log in to check for announcements and download materials at least twice per week. Most homework assignments must be submitted to Blackboard.

Group Work

You will be expected to learn some of the material by working with a group of students. Working in groups will help you learn how to…

- Explain math concepts in clear, helpful ways
- Teach in ways that are consistent with constructivist learning theory
- Work with people who think differently than you do

Homework

Homework will be accepted up to three weeks past the due date, but a late penalty will apply. The late penalty will be 10% for one day to one week late, 20% for eight days to two weeks late, and 30% for 15 days to three weeks late.

Illness

All absences affect your participation grade, regardless of the reason for the absence. You do NOT need to provide any documentation from a doctor or hospital.

University Policies and Procedures

Students with Disabilities (ADA Compliance): 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 Founders Hall, room 204. (UNTD Policy 7.004)

CoursEval 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.

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 (Policy 7.002) at http://www.untdallas.edu/sites/default/files/page_level2/pdf/policy/7.002%20Code%20of%20Academic_Integrity.pdfRefer to the Student Code of Student Rights, Responsibilities and Conduct at http://www.untdallas.edu/sites/default/files/page_level2/hds0041/pdf/7_001_student_code_of_conduct_may_2014.pdf 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. In addition, all academic work turned in for this class, including exams, papers and written assignments must include the following statement: "*On my honor, I have not given, nor received, nor witnessed any unauthorized assistance that violates the UNTD Academic Integrity Policy*."

Bad Weather Policy:

Campus facilities will close and operations will be suspended when adverse weather and/or safety hazards exist on the UNTD campus or if travel to the campus is deemed dangerous as the result of ice, sleet or snow. In the event of a campus closure, the Marketing and Communication Department will report closure information to all appropriate major media by 7 a.m. That department will also update the UNTD website, Facebook and Twitter with closing information as soon as it is possible. For more information please refer to http://www.untdallas.edu/police/resources/notifications

Attendance and Participation Policy:
The University attendance policy is in effect for this course. Please refer to Policy 7.005 Student Attendance at http://www.untdallas.edu/hr/upol

Diversity/Tolerance Policy: Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive and 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. (UNTD Policy 7.001)