

## Technical Math Applications (TECM 1349) Online



**Credit:** 3 semester credit hours (3 hours lecture)

**Prerequisite/Co-requisite:** Online Orientation and answering “Yes” to seven or more questions on the Distance Education Self-Evaluation: <http://www.lit.edu/depts/DistanceEd/OnlineOrientation/OOStep2.aspx>

### Course Description

Trigonometry and geometry as used in a variety of technical settings. Includes the use of plane and solid geometry to solve areas and volumes encountered in industry. *This course is time-bound, structured, and mostly online. All tests and the final exam are administered in a proctored environment by the instructor.*

### Student Identification Fees

This course requires all test and the final exam be administered in a proctored environment. The instructor will be offering proctored testing sessions. Other testing centers may require a fee for proctoring services.

### Required Textbook and Materials

1. There is no textbook for this class; instructor created materials will be used.
2. A **basic** scientific calculator with the trigonometric functions (sin, cos, tan) and a build in  $\pi$  key (no graphing or programmable calculators). *Please check with your individual instructor as to the specific type of calculator required.*
3. Protractor

### Course Objectives

Upon completion of this course, the student will be able to:

1. Solve right triangle applications.
2. Calculate areas of plane surfaces.
3. Solve volumes of standard solids.
4. Add and subtract vectors.

### Course Outline

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|---|---|
| <p>A. Unit 1: Introduction to Geometry</p> <ol style="list-style-type: none"><li>1. Fundamental Definitions of Geometry</li><li>2. Angles</li><li>3. Relations of Lines</li><li>4. Polygons and Their Properties</li><li>5. Triangles and Their Properties</li><li>6. Quadrilaterals and Their Properties</li></ol> | <p>B. Unit 1: Polygons</p> <ol style="list-style-type: none"><li>1. Perimeter vs. Area</li><li>2. Area of a Square and Rectangle</li><li>3. Area of a Parallelogram</li><li>4. Area of a Triangle</li><li>5. Area of a Trapezoid</li></ol> <p>C. Unit 2: Triangles</p> <ol style="list-style-type: none"><li>1. Congruent Triangles</li><li>2. The Right Triangle</li></ol> |
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## TECM 1349 Online

### Course Syllabus

3. The Square and its Diagonals
4. Isosceles Triangles and Their Properties
5. Equilateral Triangles and Their Properties
6. Hexagons and Their Properties
7. Similar Triangles
- D. Unit 3: The Circle
  1. Definitions
  2. Properties
  3. Relations between Diameter, Radius, and Circumference
  4. Historical Note Concerning Pi
  5. Intercepted Arc Length
  6. Area of a Circle
  7. Area of a Ring (Annulus)
  8. Area of a Sector
  9. Segments
10. Ellipse
11. Regular Polygons and Circles
- E. Unit 4: Geometric Solids
  1. Prisms
  2. Cylinders
  3. Pyramids
  4. Cones
  5. Frustums
  6. Spheres
  7. Torus
- F. Unit 5: Trigonometry
  1. Introduction to Trigonometry
  2. Right Triangle Trigonometry
  3. Oblique Triangle Trigonometry
- G. Unit 6: Vectors
  1. Introduction to Vectors
  2. Addition and Subtraction of Vectors

### Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

### Course Evaluation

Final grades will be calculated according to the following criteria:

Tests ( <i>schedule of tests to be posted in Blackboard</i> )	60%
Comprehensive Final Exam	12%
Course Assignments and Participation	28%

### Course Requirements

1. Proctored tests and proctored final exam.
2. Course assignments.
3. Blackboard logon and access to course a minimum of four times per week.
4. Additional course requirements as defined by the individual course instructor.

### Course Policies

1. Cheating of any kind will not be tolerated.
2. The students are responsible for initiating and completing the drop process. Students who stop participating in class and fail to drop the course will earn an “F” in the course.
3. Additional class policies as defined by the individual course instructor.

## **TECM 1349 Online**

### Course Syllabus

#### **Technical Requirements (for courses using Blackboard)**

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

[https://help.blackboard.com/en-](https://help.blackboard.com/en-us/Learn/9.1)

[us/Learn/9.1](https://help.blackboard.com/en-us/Learn/9.1) [2014\\_04/Student/015\\_Browser\\_Support/015\\_Browser\\_Support\\_Policy](#) A

functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

#### **Disabilities Statement**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:

<http://www.lit.edu/depts/stuserv/special/defaults.aspx>

#### **Student Code of Conduct Statement**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu) or obtained in print upon request at the Student Services Office.