



Technical Math Applications (TECM 1349)

Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: None

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.

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 π key (no graphing or programmable calculators). *Please check with your individual instructor as to the specific type of calculator required.*

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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| A. Unit 1: Introduction to Geometry | 6. Hexagons and Their Properties |
| 1. Fundamental Definitions of Geometry | 7. Similar Triangles |
| 2. Angles | D. Unit 3: The Circle |
| 3. Relations of Lines | 1. Definitions |
| 4. Polygons and Their Properties | 2. Properties |
| 5. Triangles and Their Properties | 3. Relations between Diameter, Radius, and Circumference |
| 6. Quadrilaterals and Their Properties | 4. Historical Note Concerning Pi |
| B. Unit 1: Polygons | 5. Intercepted Arc Length |
| 1. Perimeter vs. Area | 6. Area of a Circle |
| 2. Area of a Square and Rectangle | 7. Area of a Ring (Annulus) |
| 3. Area of a Parallelogram | 8. Area of a Sector |
| 4. Area of a Triangle | 9. Segments |
| 5. Area of a Trapezoid | 10. Ellipse |
| C. Unit 2: Triangles | 11. Regular Polygons and Circles |
| 1. Congruent Triangles | E. Unit 4: Geometric Solids |
| 2. The Right Triangle | 1. Prisms |
| 3. The Square and its Diagonals | 2. Cylinders |
| 4. Isosceles Triangles and Their Properties | 3. Pyramids |
| 5. Equilateral Triangles and Their Properties | 4. Cones |
| | 5. Frustums |
| | 6. Spheres |

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Course Syllabus

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	60%
Comprehensive Final Exam	12%
Course Assignments and Participation	28%

Course Requirements

1. Attendance is mandatory.
2. The student must purchase all of the required course materials.
3. Additional course requirements as defined by the individual course instructor.

Course Policies

1. Cheating of any kind will not be tolerated.
2. No food, drinks, or use of tobacco products in class.
3. All devices (except the scientific calculator) must be turned off while in class.
4. The students are responsible for initiating and completing the drop process.
Students who stop coming to class and fail to drop the course will earn an “F” in the course.
5. Additional class policies as defined by the individual course instructor.

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-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)

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880-1737 or visit the office in Student Services, Cecil Beeson Building. You may also visit the online resource at <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 or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

Starfish

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

