Math 085 Applied Geometry for Technicians – Hope Factory

Syllabus Extended Spring 2026 Lane Community College

Credits:	4	**Instructor Information:**	
CRN:	TBD	Instructor:	Brian Kau
Class Time:	Variable	Office:	Building 16 Room 236
Location:	Online/HOPE factory site	Email:	kaub@lanecc.edu
Moodle:	http://classes.lanecc.edu	Phone:	541-463-5016
STEM Learning Center:	Bldg. 16, Room 193	Office Hours:	
Hours: M – T 9 am – 4 pm, F 9 am – 1 pm		In Office: MW 9 – 9:50 am,	

This is an online class. All work, meetings, quizzes, and tests will be done online. You will need a way to meet during zoom sessions and your computer/phone will need to be able to show video and audio during those meeting. All information about the class will be on Moodle: https://classes.lanecc.edu/

PREREQUISITES
None.

COURSE DESCRIPTION
MTH 085 Applied Geometry includes the following: linear, square, and cubic units, dimensional analysis in metric and US customary measures, problem solving, angle measure, properties of pairs of angles formed by system of parallel, perpendicular, and transversal lines; perimeter and area of polygons and circles; surface area and volume of solid figures such as prisms and pyramids; similarity, ratio, and proportion, right triangle trigonometry. Oblique triangle trigonometry is an optional topic. Some algebra topics from MTH 075 will be applied. The course will emphasize clear communication of mathematical results. Application problems are realistic with some data to be collected, analyzed, and discussed in a group setting.

Required Materials:

1. The packet, *Applied Algebra I*, by Doug Gardner, book is online
2. Scientific Calculator. (The Sharp D.A.L. 500 series is a good choice.)
3. A notebook for class notes & homework (graph paper is good).

Optional Materials:

1. Metric and US customary ruler.
2. Protractor, clear plastic, not the kind with a moving leg on it.

COURSE OBJECTIVES
Upon successful completion of this course, the student will:

1. Determine angle measurements in drawings involving triangles, parallel lines, and central angles.
2. Use a protractor appropriately.
3. Name basic shapes and describe their properties.
4. Determine what folds up into a simple 3D shape.
5. Apply properties of isosceles and equilateral triangles.
6. Utilize the US Customary and metric system of units for length, area, volume, and weight.
7. Use unit analysis to convert measurements including square and cubic units.

8. Use conversion charts to convert measurements.
9. Apply densities to determine weight or volume.
10. Calculate perimeters, areas, volumes, and surface areas of geometric shapes.
11. Evaluate formulas related to geometric measure.
12. Solve applied ratio and proportion problems.
13. Apply properties of similar triangles to find lengths.
14. Apply properties of right triangles and use the Pythagorean Theorem.
15. Apply trigonometric ratios to determine angles and lengths in right triangles.
16. Apply the Law of Sines and the Law of Cosines (Optional).
17. Solve application problems involving geometry and measurement appropriate to technical fields.
18. Simplify elementary algebraic expressions.
19. Solve elementary algebraic equations and formulas.
20. Communicate problem-solving steps clearly, particularly in graphics and writing.

Success in meeting above objectives will be assessed by in class group activities, quizzes based on homework, a midterm, and a final exam. Grades are calculated as follows:

Homework & Activities (30%)
Activities are done online at home or at work site if time is allotted. You may work in groups to complete activities, but everyone must turn in a paper. Homework is done online from home. I will be grading on process and answers will be provided on feedback of the submissions. Completeness of homework is key to homework grade. Late work will be accepted up to 2 days after due date.

Quizzes (50%)
There will be four quizzes. They will consist of homework problems, or questions very similar to the homework. By doing homework problems, you will be prepared for the quizzes. There are no make-ups on quizzes that are missed. For each quiz you may use 1 page of notes (2 sides) and a calculator. You will be taking the quizzes on HOPE factory site during week 4, 7, 10, and 13.
If you miss a quiz, email or call me as soon as possible to see if a make-up can be scheduled. I will not administer a quiz to a student after graded quizzes have been returned to the class.

Final Exam (20%)
At the end of the term there will be a cumulative final exam over all 4 chapters. You may use your notes sheets from the quizzes, and a calculator. This will be scheduled during week 15. This will be scheduled during your on site work schedule (while you are at HOPE site).
To be well-prepared,

- complete all homework assignments
- review your quizzes
- get help with topics that are challenging

If you miss a quiz, email or call me as soon as possible to see if a make-up can be scheduled. I will not administer a quiz to a student after graded quizzes have been returned to the class online.

Grading scales

98 – 100%	A+	88 – 89%	B+	78 – 79%	C+	68 – 69%	D+	F = below 60%
93 – 97%	A	83 – 87%	B	73 – 77%	C	63 – 67%	D	
90 – 92%	A-	80 – 82%	B-	70 – 72%	C-	60 – 62%	D-	
Non-passing grades are D and F.								

Attendance and Participation

- Participation also involves asking and answering questions, sharing solutions with the class in forums, and interacting positively and respectfully with classmates.
- Please check Moodle and email daily. Students may need your feedback on forums to continue their work on the problems. It may be useful to have a classmate's contact information.

Incomplete:

Students may request an incomplete grade (I) if they have some special circumstance that has occurred, they are currently passing the class, and less than 25% of the course work remains to be completed. Students must initiate the Incomplete contract prior to the end of class.

Attendance/No Show Drop Policy:

(Online Classes) Students who do not attend at least one class session during the first week of classes will be dropped from the course. Since we are meeting online, the first week attendance will be recorded by completing the first assignment. Failure to complete assignment will result in being "no-show" dropped from the course.

Grading Note:

If you decide not to complete the course, or if you are concerned you may not pass, you must change your grading options by May 23rd. I will be assigning course grades for every student that is enrolled at the end of the term. NP or F grades can affect academic standing and financial aid eligibility (more information). It is your responsibility to manage your enrollment and grading options.

Class Policies:

- Help to make this class a positive learning experience for everyone.
- Check in daily with Moodle and email.
- Speak and behave respectfully to all classmates as well as your professor. Never do or say anything that would make anyone feel bad.
- Let's value diversity of all types: race, ethnicity, national origin, sex, marital status, familial relationship, sexual orientation, gender identity/expression, pregnancy, age, disability, religion, or veteran status.
- Use no profanity.
- Ask questions in meeting or on forums. Please do not dominate the class forums. Be aware that this learning experience is for everyone.
- Please silence your phone during meetings on zoom. If you choose to check your phone during meetings, please do so in a way that will not distract me or your classmates.

Accessibility and Accommodations:

Lane Community College (LCC) is dedicated to providing inclusive learning environments. The Center for Accessible Resources (CAR) coordinates all academic accommodations for students at LCC. If you anticipate or experience academic barriers due to a disability, to request assistance or accommodations, contact the Center for Accessible Resources 541-463-5150 or accessibleresources@lanecc.edu.

Tentative Schedule:

Week	Section	Topic
1	1.1	Operations with Real Numbers
2	1.2	Measurement
2	1.3	Ratio, Proportion, & Percent (review for quiz 1)
4	1.4	Quiz 1 (sections 1.1 – 1.3), Dimensional Analysis
5	1.5	Order of Operations
6	2.1	Solving Simple Equations (review for quiz 2)
7	2.2	Quiz 2 (sections 1.4, 1.5, 2.1), Solving for Different Variables
8	2.3	Solving Complex Equations
9	3.1	Pythagorean Theorem (review for quiz 3)
10	3.2	Quiz 3 (sections 2.2, 2.3, 3.1), Angles
11	3.3	Trigonometry (finding sides) Trigonometry (finding angles)
12	4.1	Area & Perimeter (review for quiz 3)
13	4.2	Quiz 4 (sections 3.2, 3.3, 4.1), Surface Area
14	4.3	Volume (review for Final)
15		Final Exam over Chapters 1-4

Each week there will be two items to complete. This will include an activity and a homework assignment for the section covered that week. On weeks with a quiz review, the review will replace the activity. On weeks with a quiz, the quiz will replace the activity.

Academic Integrity Resources:

- **Inclusion Policy**

We are a college community enriched by the diversity of our students and staff. Each individual and group has the potential to contribute to our learning environment. Each has dignity. To diminish the dignity of one is to diminish the dignity of us all. It is the policy of Lane Community College and its Board to ensure equal opportunity and promote diversity among the staff and students, and within the college community as consistent with applicable federal, state, and local laws and regulations, and to provide a working and learning environment that is free from discrimination, harassment and retaliation.

- **Student code of conduct**

Lane Community College maintains a written statement of Student Rights and Responsibilities. This document outlines the essential provisions for academic freedom and guides students in becoming responsible participants in the college community. This document is updated by Student Life and Leadership Development and is approved by the Executive Dean of Student Affairs.

- **Artificial Intelligence statement**

You may use AI programs e.g. ChatGPT to help generate ideas and brainstorm. However, you should note that the material generated by these programs may be inaccurate, incomplete, or otherwise problematic. Beware that use may also stifle your own independent thinking and creativity.

You may not submit any work generated by an AI program as your own.

Any plagiarism or other form of cheating will be addressed as described in the student code of conduct.

- **Important Dates: (see table below)**

Extended Spring Term 2026

January 26, 2026	Classes begin
May 22, 11:59 pm	Last day for schedule changes
May 18 - 22	Finals week

Student Support Resources:

- **STEM Learning Zone**
  Building 16, room 193 – Hours: M – T 9:00 am – 4:00 pm, F 9:00 am – 1:00 pm

- **On and off campus student resources**
  - SHeD (Student Help Desk)
  - Moodle Basics for Students (self-enroll)
  - LCC Computer Labs
  - Tutoring Services
  - Library
  - LCC Rainy Day Pantry
  - LCC Clothing Stash
  - Student Health & Wellness Center
  - Free 24/7 Peer Support for Students
  - Racial Equity Support Line
  - **TRiO/TRiO STEM**

EMERGENCY INFORMATION (at LCC campus)

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<td>CALL:

All Emergencies:
Public Safety – Ext. 5555 or 541-463-5555

Ambulance or Sheriff: 911 or 9-911 from campus phone

Non-Emergency Medical:
Health Clinic –
Ext. 5665 or 541-463-5665</td>
<td>EVACUATION ROUTE:
Follow instructor's directions to exit the building or follow the exit signs. Walk, don't run. Move away from the building.

FIRE: Pull alarm in hallway. Exit building by staying low if smoke impairs breathing and vision.

EARTHQUAKE: Drop, cover, and hold, away from windows until motion stops. Then, carefully evacuate the building.</td>
<td>Public Phones

Located in the SE and NW 2nd floor lobbies of Building 16, outside of rooms 202 and 226. Familiarize yourself with their locations.</td>
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<td colspan="3">LCC ALERT
LCCAlert is an emergency notification service from Lane Community College for weather closures, delays or emergencies at Lane. LCCAlert messages are sent by text and sometimes email.

Employees and students are automatically signed up for LCCAlert if they are employed or registered for classes in the current term. To update your information:

● Login to ExpressLane with your L number and password.
● Select LCCAlert Emergency Notification in the Personal Information window.
● Enter your cell number and email addresses you'd like to use.
● Save your changes and logout.</td>
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<td colspan="3">BAD WEATHER: If class is canceled, please log into Moodle for information and assignments. If roads are icy/snowy please drive very carefully and allow for enough travel time so that you arrive safely and on time. Watch for black ice in shady locations on freezing temperature days. See weather closure information.</td>
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