

Clackamas Community College
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Section #1 General Course Information

Department: Mathematics

Submitter

First Name: Stefan

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Course Prefix and Number: MTH - 080

Credits: 3

Contact hours

Lecture (# of hours): 33

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 33

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Course Title: Technical Mathematics II

Course Description:

This course is the second in a sequence designed for career-technical students. The topics focus on critical thinking, problem solving, and mathematical communication using applications in arithmetic, algebra, geometry, and trigonometry.

Type of Course: Developmental Education

Can this course be repeated for credit in a degree?

No

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

Are there any requirements or recommendations for students taken this course?

Yes

Recommendations:

Requirements: MTH-050 with a C or better

Will this class use library resources?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ **Not every term**

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. demonstrate rigorous and analytical thinking by reading, writing, and utilizing the technical and logical language and symbolism necessary to do mathematics and be effective problem solvers;
2. solve a variety of "real world" math applications involving MTH 080 content,
3. read and comprehend technical mathematics writing,
4. effectively communicate mathematical information,
5. present mathematical and technical information in a professional manner,
6. work effectively as a team member to solve a variety of math problems,
7. work with a small group of students to explore and present a related mathematical topic complementing the content of this course,
8. demonstrate an understanding of the concept of a variable,
9. translate English phrases into algebraic expressions,
10. distinguish between an expression and an equation,
11. use algebra to model an application,
12. evaluate an algebraic expression,
13. identify like terms in an algebraic expression,

14. simplify an algebraic expression,
15. define the "solution" to an equation,
16. solve a linear equation in one variable,
17. check the solution(s) to an algebraic equation,
18. use linear equations to model applications,
19. solve problems modeled by linear equations,
20. model and solve business applications involving revenue, cost, profit, and marginal quantities;
21. find the break-even point for a product in business applications,
22. manipulate formulas and solve them for a particular variable,
23. model and solve motion problems,
24. model and solve mixture problems in a variety of application-settings,
25. model and solve percent problems,
26. use the work relationship to model and solve work problems,
27. solve problems involving resistance in parallel circuits,
28. construct a ratio to compare quantities with similar units,
29. construct a rate to compare quantities with different types of units,
30. simplify a rate,
31. solve a proportion,
32. use proportions to model and solve an application,
33. solve problems involving direct variation,
34. solve problems involving inverse variation,
35. define the basic trigonometric ratios on a right triangle: Sine, cosine, and tangent;
36. give trigonometric ratios as exact values for 30° , 45° , and 60° angles;
37. use a calculator to evaluate trigonometric ratios for any acute angle,
38. define and evaluate the reciprocal trigonometric ratios: Secant, cosecant, and cotangent;
39. Use the inverse trigonometric functions to find the measure of an angle in a right triangle,
40. solve a right triangle,
41. use right-triangle trigonometry to model and solve applications.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Introduction to Algebra.
2. Applications of Algebra in One Variable.
3. Ratios, Proportions, and Variation.
4. Right-Triangle Trigonometry.

Does the content of this class relate to job skills in any of the following areas:

- | | |
|--------------------------------------|-----------|
| 1. Increased energy efficiency | No |
| 2. Produce renewable energy | No |
| 3. Prevent environmental degradation | No |
| 4. Clean up natural environment | No |
| 5. Supports green services | No |

Percent of course: 0%

First term to be offered:

Next available term after approval

:
