



## MASTER COURSE OUTLINE

Prepared By: Tyler Wallace

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## COURSE TITLE

Math for Science and Engineering

## GENERAL COURSE INFORMATION

Dept.: SCI

Course Num: 104

(Formerly: )

CIP Code: 27.0304

Intent Code: 11

Program Code:

Credits: 2

Total Contact Hrs Per Qtr.: 22

Lecture Hrs: 22

Lab Hrs: 0

Other Hrs: 0

Distribution Designation: Specified Elective SE

## COURSE DESCRIPTION (as it will appear in the catalog)

Math concepts heavily used by science and engineering coursework are covered. Topics will include (but not be limited to): unit conversions, scientific notation, right angle trigonometry, logarithms and exponents, applications of linear graphs, vectors, and significant figures. All topics will be covered with an emphasis on applications within the sciences.

## PREREQUISITES

MATH 098

## TEXTBOOK GUIDELINES

College level textbook or worksheets at instructor discretion

## COURSE LEARNING OUTCOMES

*Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:*

1. Graph data, identify linear relationships and make predictions based on collected data
2. Model science applications with algebraic relationships
3. Use mathematical models to compare and contrast results of scientific experiments

## INSTITUTIONAL OUTCOMES

IO2 Quantitative Reasoning: Students will be able to reason mathematically.

## COURSE CONTENT OUTLINE

1. Applications of linear graphing including scatterplots, slope, line of best fit
2. Significant figures including adding, multiplication, exponents, and logarithms
3. Scientific notation including conversions, multiplication, division, powers, and use of a calculator
4. Science/engineering math applications including unit conversions, density, percents, proportions, area, and volume
5. Right angle trigonometry and applications including law of sines and cosines
6. Science/engineering applications of exponents and logs including Richter scale, PH, and Astronomy

7. Vectors including adding, dot product, and magnitude

**DEPARTMENTAL GUIDELINES** *(optional)*

Two assessments are to be given, a midterm and final.

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**DIVISION CHAIR APPROVAL**

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**DATE**