

- A. This course is the second in a two course sequence that prepares students for the study of Calculus.
- B. This course serves as a co-requisite to courses in Computer Science, as a requirement in the AS degree in Environmental Science, and a pre-requisite to any program (for example, mathematics, engineering, physics, etc.) which requires a math of Calculus I or above.

IV. Place of Course in College Curriculum

- A. This course is a free elective.
- B. This course serves as a General Education course in Mathematics.
- C. This course meets a program requirement for various A.S., A.A.S. and A.A. degrees.
- D. This course transfers as a mathematics course in most liberal arts programs.
Course transferability: for New Jersey schools go to the NJ Transfer website, www.njtransfer.org. For all other colleges and universities go their individual websites.

V. Outline of Course Content

- A. Trigonometric Functions
 - 1. Radian and degree measure
 - 2. Circular and right triangle trigonometry
 - 3. Trigonometric graphs
 - 4. Inverse trigonometric functions
 - 5. Trigonometric models
- B. Analytic Trigonometry
 - 1. Trigonometric identities
 - 2. Trigonometric equations
 - 3. Trigonometric formulas
 - 4. Law of Sines, Law of Cosines
 - 5. Vectors
- C. Topics in Analytic Geometry
 - 1. Parabolas
 - 2. Hyperbolas
 - 3. Ellipses
 - 4. Polar coordinates and polar graphs (optional)

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes

Students will:

1. apply mathematical arguments to problems. (GE-2)
2. solve problems quantitatively and symbolically. (GE-2)

B. Course Learning Outcomes

At the completion of the course Students will be able to:

1. Specify the graphical and algebraic characteristics of trigonometric functions.
2. Solve application problems using the Law of Cosines, the Law of Sines, vectors, and Right Triangle Trigonometry.
3. Verify identities and solve equations by using fundamental trigonometric identities, double angle, product-to-sum, sum-to-product, sum, difference, and half-angle.
4. Identify the characteristics of the conic sections graphically and algebraically.

C. Assessment Instruments

Student learning outcomes are assessed using a combination of the following:

- A. tests
- B. final examination
- C. projects
- D. laboratory products
- E. quizzes

VII. Grade Determinants

Final grades are determined by a combination of the following:

- A. cumulative final examination
- B. tests
- C. Exploratory/Practice assignments
- D. projects
- E. individual teacher determinants

Instructors can use a variety of modes of teaching including, but not limited to the following:

- A. lecture/discussion
- B. small-group work
- C. computer-assisted instruction
- D. Exploratory/Practice assignments
- E. student oral presentations
- F. student collaboration
- G. independent study

VIII. Texts and Materials

The following text and materials are required for the course:

- A. Suggested Textbook: *Precalculus* by Blitzer, published by Pearson Prentice Hall
- B. Graphing calculator is required. TI-82, TI-83, or TI-84 is recommended.

Please Note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.

IX. Resources

No unusual resources are needed.

X. Honors Option

This course does not have an honors option because there is a dedicated course (Math 114H) for students wishing to take an honors level Precalculus course.