Piedmont Technical College Course Syllabus

COURSE INFORMATION

Course Prefix/Number: MAT 140
Title: Analytical Geometry & Calculus I
Responsible Division: Arts and Sciences
Last Day to Withdraw from this Course: For the last date to withdraw from this course, consult the current Student Calendar.

Course Description:
For course, credit hour, pre-requisite(s) and co-requisite(s) information, visit the Detailed Course Information page: http://www.ptc.edu/courses/MAT140.

Textbook and Other Materials:
For textbook information and additional required and/or supplemental materials, visit the college bookstore (www.ptc.edu/bookstore).

Proctored Examinations:
Proctored examinations for distance learning courses taken at non-PTC campuses may require a proctoring fee for each exam taken.

COURSE POLICIES

Course policies are available online through the Academic Catalog and Student Handbook. Visit the Course Policies page (www.ptc.edu/syllabus/policies) for a detailed list of important policies and more information.

GRADE POLICY

Detailed grading policy information can be found on the Grading Policy webpage (http://www.ptc.edu/grading-policy). Final grade appeal information is available in the Academic Catalog (http://www.ptc.edu/catalog/).
ACCOMMODATIONS

Accommodations for ADA:

Information is available on the Student Disability Services webpage (http://www.ptc.edu/ada).

RATIONALE

Why do I need this course?

MAT 140 provides a strong foundation in the techniques and applications of differential and elementary integral calculus necessary for careers in engineering and natural sciences. Emphasis is placed on applying the fundamental methods of calculus to the solution of problems modeling physical phenomena, with the appropriate theoretical basis developed as needed.

PROGRAM INFORMATION

For program information including required courses, program learning outcomes, gainful employment information and advisement information, refer to the Academic Program webpage. Go to Academics (http://www.ptc.edu/academics), select your program, and then select Credentials Offered.

COURSE STUDENT LEARNING OUTCOMES

Upon successful completion of this course and/or clinical, each student will be able to:

- Evaluate limits graphically and analytically and apply limits to investigating the continuity of functions.
- Differentiate polynomial, rational, radical, and trigonometric functions and implicitly defined functions.
- Apply differentiation to solving problems involving related rates and approximation of functional quantities.
- Sketch the graphs of functions using extrema, increasing/decreasing properties, inflection points, concavity, intercepts and asymptotes.
- Solve problems involving optimization of functional quantities.
• Evaluate indefinite and definite integrals of elementary functions.
• Apply indefinite and definite integrals to solving problems involving initial values and area.

GENERAL EDUCATION COMPETENCIES

Piedmont Technical College General Education Competencies for All Graduates:

This course may address one or more of the following General Education Competencies (assessment will be stated when applicable):

Communicate effectively.
Assessment:
• N/A

Apply mathematical skills appropriate to an occupation.
Assessment:
• Tests and graded homework questions.

Employ effective processes for resolving problems and making decisions.
Assessment:
• Tests and graded homework questions.

Demonstrate the basic computer skills necessary to function in a technological world.
Assessment:
• N/A

To validate proficiency in the general education competencies, students in some programs will be tested using Work Keys.