

**Course number, title and credits; total time allocation**

Course Letter/Number	<b>MAT 141</b>	Credits	<b>5</b>	Title	<b>Precalculus</b>
Lecture/Discussion	<b>5</b>	hrs/semester	Lab	hrs/semester	Clinical
				er	hrs/semester

**Catalog Description and Pre- and Co-requisites (Same as taxonomy and catalog)**

*Major emphasis is on the concept of functions. Study polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, their properties, graphs, and related equations and applications. Additional topics include systems of equations, matrices, and conic sections. A graphing calculator is required and used extensively. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. Prerequisite: MAT 131\**

*Prerequisite: MAT 131, with 2.0 minimum, within 2 years*

**Knowledge, Skills and Abilities Students Acquire from this Course (Educational Objectives)**

1. Simplify polynomial, radical, and rational expressions, and algebraic expressions involving radicals, integer exponents, rational exponents, trigonometric functions, and matrices using appropriate algebraic properties, algebraic skills, and algorithmic processes.
2. Use appropriate algorithmic processes (this includes processes that involve matrices) to solve:
  - linear, absolute value, quadratic, radical, rational, exponential, and logarithmic equations
  - linear, absolute value, polynomial, and rational inequalities
  - linear and nonlinear systems of equations
  - trigonometric and inverse trigonometric equations
3. Manipulate and identify functions graphically, symbolically, and numerically.
4. Solve application problems involving many different subject areas using algebraic processes.
5. Apply fundamentals of right triangle trigonometry and solve application problems.
6. Use appropriate technology (such as a graphing calculator) to enhance the understanding of objectives.

**Associate Degree Outcomes Addressed in this Course (These must appear in course syllabus.)**

- ADO 3: Demonstrate computational skills and mathematical reasoning
- ADO 7: Critical Thinking and Problem Solving

**Units/topics of Instruction**

*See course description and educational objectives.*

**Instructional Techniques and Procedures**

*Although techniques vary from instructor to instructor, this course usually consists of mostly lecture and group work.*

**Instructional Use of Computer or Other Technology**

*A graphing calculator is used extensively in this course. The instructor may choose to incorporate the use of MyMathLab in homework, quiz and test assignments. Instructors may also use PowerPoint presentations as a teaching tool. Students may be required to do a project outside of class that involves a laboratory type analysis and may be required to use a CBR and/or graphing calculator, depending on the instructor. Also, some instructors may choose to use MyMathLab as their homework, quiz and/or exam delivery method.*

**Instructional Materials and Costs to Students**

*The instructional material for this course consists of the textbook and a graphing calculator.*

### Skills and abilities students should bring to the course

Able to read	<input type="checkbox"/> a limited amount of material <input checked="" type="checkbox"/> an average amount of material <input type="checkbox"/> an above average amount of material	Able to compute	<input type="checkbox"/> basic, pre-algebraic problems <input type="checkbox"/> simple algebraic problems <input checked="" type="checkbox"/> higher order mathematical problems
Able to read	<input type="checkbox"/> relatively easy material <input checked="" type="checkbox"/> moderately difficult material <input type="checkbox"/> technical or sophisticated material	Able to write	<input checked="" type="checkbox"/> short compositions <input type="checkbox"/> medium length compositions <input type="checkbox"/> lengthy compositions
Able to use technology	<input checked="" type="checkbox"/> keyboard skills/familiar with computer <input checked="" type="checkbox"/> computer application <input checked="" type="checkbox"/> web navigation	Other necessary abilities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

### The course is usually scheduled

Day: ☒ Fall ☒ Winter ☐ Spring

Evening: ☒ Fall ☒ Winter ☒ Spring

Prepared by \_\_\_\_\_

Date \_\_\_\_\_

Approved by Dept. \_\_\_\_\_

Date \_\_\_\_\_

Approved by Dean \_\_\_\_\_

Date \_\_\_\_\_

Approved by Curr. Comm. \_\_\_\_\_

Date \_\_\_\_\_

(Last names, please)

Form Revised 12/4/00