

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

Course Letter/Number	<b>MAT 135</b>	Credits	<b>4</b>	Title	<b>Finite Mathematics</b>		
Lecture/Discussion	<b>4</b>	hrs/semester	Lab	hrs/semester	Clinical	hrs/semester	

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

*This course is for students whose programs do not require trigonometry (or the Calculus sequence). The topics that will be included are linear, exponential, quadratic, polynomial and logarithmic functions and models; systems of linear equations; linear regression; mathematics of finance and financial modeling; matrices, linear programming; permutations; combinations, probability theory; probabilistic simulations; decision theory; descriptive statistics; and Markov chains. 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 should be taken or the prerequisite be retaken to ensure the success of the student.*

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

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

- 1. Demonstrate conceptual understanding of various types of functions; sketch or identify their graphs both by hand and with the aid of a graphing calculator.*
- 2. Explain and use the relationship between exponential and logarithmic function to sketch their graphs and apply their properties in solving applied problems.*
- 3. Demonstrate and apply the concepts associated with the mathematics of finance: simple interest, compound interest, annuities, and sinking funds as they pertain to mortgages, loans, car payments, and savings accounts.*
- 4. Solve application problems with mathematical modeling that involve linear systems, matrices, linear inequalities, graphical techniques, and the Simplex Method.*
- 5. Demonstrate an understanding of the relationships between linear equations, linear inequalities, and discrete optimization problems with occur in business, life, and the social sciences.*
- 6. Solve problems involving counting by using basic counting principles, permutations, and combinations.*
- 7. Demonstrate an understanding of the difference between: theoretical and empirical probability, the various rules of probability, and the relationship between probability and matrices in the use of Markov Chains to study long term behavior.*
- 8. Use appropriate technology as part of their completing the objectives above.*

**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. Also, the instructor may choose to incorporate the use of EXCEL in solving various application problems.*

**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