MIDSTATE COLLEGE
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Updated 11/11/09

Course number & Name: MAT 150 PreCalculus

Credit hours: 4 quarter hours **Method of Delivery:** classroom

Text(s) & Manual: Precalculus: Functions and Graphs

Author(s): Larson, Hostetler, and Edwards, 5th ed.

Publisher: Houghton Mifflin, 2008

Course Description: This course is designed for students who have had at least three years of high school algebra and trigonometry, but who lack the preparation needed to study Calculus. Topics include functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions, and topics related to analytic geometry.

Requirements for Completing the Course: Pass with 70% average or better.

Topics: A review of graphs of functions and shifting, reflecting, ans stretching graphs; combinations of functions; inverse, quadratic, and polynomial functions of higher degree; real zeros of polynomial functions; complex numbers, the fundamental theorem of algebra and ration functions and asymptotes; graphs of rational functions. The actual course begins with exponential and logarithmic functions and their graphs; properties of logarithms; solving exponential and logarithmic equations; radian and degree measure; trigonometric functions; right angle trigonometry; trigonometric functions of any angle, graphs of sine and cosine functions; additional topic include the Law of Sines and the Law of cosines. Solve matrix and determinants and solve and graph the conics.

Course Objectives: Upon completion of this course, the student will be able to:
1. graph polynomials and rational functions
2. solve for and graph exponential and logarithmic functions.
3. evaluate and radian and degree measure
4. evaluate right triangle trigonometry
5. evaluate and graph cosine and sine trigonometric functions.
6. evaluate other trig functions
7. use fundamental identities
8. solve matrices and determinants

Midstate Grading scale:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Midstate Plagiarism Policy:
Plagiarism is using another person's words without giving credit to the author. Original speeches, publications, and artistic creations are sources for research. If students use the author's words in a paper or assignment, they must acknowledge the source. Plagiarism is strictly against the academic policy of the college and is grounds for failing the course. If repeated, plagiarism may result in suspension from the college. (See the Midstate College catalog and/or Student Handbook for additional information.)

In courses containing writing assignments, the college promotes the use of an electronic resource which compares the student's writing against previously submitted papers, journals, periodicals, books, and web pages. Students and instructors can use this service to reduce the incidence of plagiarism. This electronic resource has been found to conform to legal requirements for fair use and student confidentiality. It is able to provide a report to the student indicating the parts of the assignment that match.

Instructor Information: Alan M. Paredes Ph.D., Room 226, (309) 692-4092, aparedes@midstate.edu, Office Hours: M/W 9 am – 11 am.

Participation Requirements/Polices and Procedures: Homework will be assigned each day in class. I do not collect homework for a grade. You will be responsible for doing the homework and asking questions.

Assessment of learning/Methods of evaluating student performance:

Grading Specifications: Four Tests 100%

Examination Information: All tests are 20 problems worth 5 points each.

Class Schedule/Course Outline:

Week One

Topics: Slopes, intercepts, parabolas

Objectives: Upon completion of this week, the student will be able to graph straight line, polynomials and rational functions

Assignments: Page 11 (7 – 41, odds), Page 24 (1- 9, odds), Page 25 (27 – 41, odds), page 29 (87 – 91, odds).

Week Two

Topics: shifting, reflecting, stretching of polynomials

Objectives: Upon completion of this week, the student will be able to graph polynomials and rational functions.

Assignments: page 48 (1- 11, odds), page 49 (21 – 55, odds), page 58 (5-25, odds), page 59 (39- 48, odds), page 69 (9- 19, odds),

Review for test one

Week Three

Test one

Topics: Polynomials, rational functions.

Objectives: Upon completion of this week, the student will be able to graph polynomials and rational functions.

Assignments: Page 99 (7- 25, odds), page 112 (11 – 43, odds), page 127 (1 – 23, odds), page 128 (43 – 59, odds)

Week Four

Topics: Polynomials, rational functions

Objectives: Upon completion of this week, the student will be able to graph polynomials and rational functions.

Assignments: Page 137 (1 – 43, odds), page 144 (9 – 28 odds), page 145 (51 – 57, odds), page 153 (31 – 37, odds), page 161 (9 – 25 odds)
Review for test two

Week Five

Test two

Topics: logarithmic and exponential functions and their graphs

Objectives: Upon completion of this week, the student will be able to solve for and graph exponential and logarithmic functions

Assignments: page 193 (1- 43 odds), page 204 (1- 45, odds)

Week Six

Topics: logarithmic and exponential functions and their graphs

Objectives: Upon completion of this week, the student will be able to solve for and graph exponential and logarithmic functions

Assignments: page 211 (1- 19, odds, 25 – 55, odds 59 – 75, odds),

Week Seven

Topics: logarithmic and exponential functions and their graphs

Objectives: Upon completion of this week, the student will be able to solve for and graph exponential and logarithmic functions

Assignments: page 221 (9- 43, odds, 85 – 105, odds)
Review for test three

Week Eight

Test three

Topics: radian and degree measure

Objectives: Upon completion of this week, the student will be able evaluate radian and degree measure to solve for and graph exponential and logarithmic functions

Assignments: page 265 (3 – 46, odds),

Week Nine

Topics: right triangle trigonometry and the unit circle

Objectives: Upon completion of this week, the student will be able evaluate right triangle trigonometry

Assignments: page 274 (5- 43, odds), page 285 (1 – 15, odds, 69 – 75, odds),

Week Ten

Topics: Graphs of the trig functions

Objectives: Upon completion of this week, the student will be able to evaluate graphs of cosine and sine trigonometric functions, plus evaluate other trig functions

Assignments: page 284 (1 – 15, odds), page 286 (69 – 75 odds)

Week Eleven

Topics: fundamental identity functions

Objectives: upon the completion of this week, the student will be able to use fundamental identities

Assignments: page 304 (1 – 59, odds)
Review for test four

Week Twelve

Test four