master +1

SPRING 2012 SYLLABUS

CRN 11323

T-6

COURSE: MATH 186, Pre-calculus, 4 credit hours
DAY AND TIME: 8:00-9:50 Mon/Wed Rm E204
PREREQUISITE: MATH 137, Intermediate Algebra
INSTRUCTOR:

D. PATRICK COLBURN Email: patrickcolburn@sbcglobal.net

TEXT: Pre-calculus, 6th edition by: J. Stewart, L. Redin, and S. Watson
SUPPLEMENTAL MATERIAL: TI-83 calculator

COURSE DESCRIPTION: This course prepares students for the study of Calculus 1. The topics include: polynomials and rational functions and their graphs, quadratic and absolute inequalities, radical expressions, conic sections, exponential and logarithmic functions, trigonometric functions, trigonometric identities and applications.

MEASUREMENTS: There will be a test after every chapter. Grade will be determined by finding the arithmetic mean of all assessments. Homework equates to ½ Chap. Assessment (each based on a check, check minus, and zero nature).

Any missing hmwk may be passed in before the administration of the relevant assessment

ACADEMIC HONESTY: At TRCC, we expect the highest standards of academic honesty. The Board of Trustees' Prescribed Conduct Policy prohibits cheating on examinations, unauthorized collaboration on assignments, or plagiarism. Anyone caught cheating will receive an "F" for that exam.

No cell phones

MAKE-UP TESTS: Any test missed on a scheduled day will be made up during the instructor's discretionary days.

HOMEWORK: will be collected daily. Place on my desk as you enter the room

EXTRA HELP: Available by app't M/W/F 11AM-11-45

MAT186 Course Outcomes

1. For each function, identify the domain, range, end behavior, local behavior and average rate of change over given intervals.
2. From an equation graph each function; and from a graph or data identify an equation
3. To any function, apply transformations involving vertical and horizontal shifting and stretching/shrinking.
4. Perform symbolic manipulations for algebraic representations of the various functions
   a) Factor polynomials
   b) Apply rules for radicals
   c) Evaluate expressions with rational exponents
   d) Apply rules for exponents and logarithms
   e) Apply trigonometric formulas and identities: Pythagorean, reciprocal, sum, difference, double and half angle formulas.
5. Given an independent variable, find the dependent variable (given and x find y): evaluate
6. Given a dependent variable, find all possible independent variables (given y find x):solve
7. Graph piecewise defined functions.
8. Use elementary functions to model data and solve practical problems.

9. Find the sum, difference, product and quotient of functions
10. Compose functions
11. De-compose functions
12. Tell if a function is invertible
13. Find the inverse of a function
14. Tell whether two functions are inverses by composition
15. Graph the inverse of a function using symmetry to y=x

16. Find the six trigonometric values of an acute angle, and the inverse trig values of a ratio of sides.
17. Solve triangles using right triangle trig, distinguish between the angle of depression and elevation.
18. Solve non –right triangles using the laws of sines and cosines
19. Solve applied problems using right triangle trigonometry

20. Add, subtract, multiply and divide complex numbers
21. Evaluate an integral power of *i*
22. Identify the conjugate of complex numbers

23. Find determinants of an nxn matrix
24. Solve a system using Cramer's rule
25. Solve a system using row reduced echelon form

Precalculus MAT186 (Precalculus, mathematics for Calculus 6th ed., James Stewart, L Redlin, S Watson)

Selected topics from Chapter 1 FUNDAMENTALS

2.1 – 2.5, 2.7, 2.8
3.1 – 3.6
4.1 – 4.5
5.2 – 5.4
6.1 -6.5
7.1 – 7.5
9.3 – 9.8