MAT 186 - 10894   Precalculus   4 Credits
Three Rivers Community College   Spring 2015

Instructor:	Michael Bergwell	Class Time:	MW 1:00-2:40
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PREREQUISITE: MATH 172, College Algebra

TEXT: Precalculus, 9th edition by: Ron Larson

COURSE DESCRIPTION: This course prepares students for the study of Calculus I. The topics include: polynomial, rational, exponential, logarithmic, trigonometric functions, their graphs, their transformations, combinations, and inverses, trigonometric identities and applications, trigonometric representation of complex numbers, sequences, series, and partial fractions.

MEASUREMENTS: Quizzes - 20%, 3 tests, each test – 20%, final exam – 20%.
Grade equivalents: A 93 – 100, A- 90 – 93, B+ 87 -89, B 83 – 86, B- 80 – 82, C+ 77 – 79, C 73 – 76, C- 70 – 72, D+ 67 – 69. D 63 – 66. D- 60 – 62, F below 60.

Attendance: Your attendance, participation, and preparation for each class is required and is essential to success in the course. If you cannot attend a class, please contact me so we can make the arrangements for makeup work.

Class Cancellation: In case of inclement weather, check the college website for cancellations.

Methods of Evaluation: Quizzes will be given each Wednesday of every non-exam week. **Quiz make-ups will not be allowed**. I will drop your lowest two quiz scores. We will have three regular exams throughout the semester. A student's lowest exam will be replaced by the final exam score (provided the final exam score is higher) – **make-up exams will not be given**. I will assign homework from the textbook as practice – homework will not be graded. I will also make problems available online through webassign. Go to www.webassign.net and create an account. The class key is **trcc.mohegan 9358 5757**. Webassign homework is also optional.

Plagiarism and Academic Honesty: At TRCC, we expect the highest standards of academic honesty. The Board of Trustees' Proscribed Conduct Policy prohibits cheating on examinations, unauthorized collaboration on assignments, unauthorized access to examinations or course materials, plagiarism.

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COURSE CONTENT:

CHAPTER 1   Functions and their graphs
                       Sec. 1.4 - 1.10

CHAPTER 2   Polynomial and rational functions
                       Sec . 2.2 , 2.6

                       Exam 1 (2/11)

CHAPTER 3   Exponential and logarithmic functions
                       Sec . 3.1- 3.5

CHAPTER 4   Trigonometry
                       Sec . 4.1- 4.8

                       Exam 2 (4/6)

CHAPTER 5   Analytic Trigonometry
                       Sec . 5.1 – 5.5

CHAPTER 6   Additional topics in trigonometry
                       Sec . 6.1, 6.2, 6.5

                       Exam 3 (5/4)

CHAPTER 9   Sequences, Series
                       Sec . 9.1 - 9.3

                       FINAL EXAM (5/18)

COURSE OUTCOMES:

After the successful completion of the course the student must be able to:

1. Evaluate a function at any given value of x.
2. Find the domain and range of the function.
3. Graph the functions, using the tables, transformations.
4. Graph the piece-wise defined functions.
5. Determine whether the function is even, odd, or neither.
6. Find local max, min for some functions, intervals of increase/decrease.
7. Model with functions.
8. Combine the functions, find their compositions, inverses.
9. Graph polynomials, find their zeroes, the x - intercepts, analyze their end behavior. Factor Theorem.
10. Graph rational functions, find the asymptotes.
11. Perform the operations with complex numbers.
12. Find trigonometric form of a complex number.
13. Evaluate, graph exponential and logarithmic functions.
14. Solve exponential and logarithmic equations, model with exponential and logarithmic equations.
15. Find the angle measure in radian, degree.
16. Find all trigonometric ratios in a right triangle.
17. Find the values of trigonometric functions from the information given.
18. Solve a right triangle.
19. Solve a triangle using the Law of Sines, the Law of Cosines.
20. Find trigonometric functions of real numbers using unit circle approach.
21. Graph the trigonometric functions.
22. Use the trigonometric identities, addition, subtraction, double, half-angle formula.
23. Evaluate inverse trigonometric functions.
24. Solve trigonometric equations.
25. Find the partial fraction decomposition of rational functions.
26. Use sequence notation to write the terms of sequences
27. Use factorial notation.
28. Use summation notation to write sums.
29. Model the real-life problems with arithmetic, geometric sequences.