MATH K186   **PRECALCULUS**   **Spring 2018**

INSTRUCTOR: Joe Amarello   (860) 383-9326 - (C)
                                              (860) 437-2940 - (W)

PREREQUISITE: MATH 172, College Algebra

TEXT: Precalculus, by John Coburn, J.D. Herdlick

COURSE
DESCRIPTION: The course prepares for study of calculus. Students will expand their
                    knowledge of algebraic and some early transcendental functions,
                    and develop skills required for higher level math courses. Topics will also
                    include: trigonometric functions, trigonometric identities and applications,
                    introductory sequences and series.

Grading: Quizzes, projects - 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: Attendance will be taken at each class. You attendance record will be considered for
                    borderline grades. I look forward to seeing you at each class.

Office Hours: I will be available to meet with students before and after class or by appointment as
                    needed.
                       Email: joseph.m.amarello@dom.com

Class Cancellation: In case of increment weather, check the college website for class
                       cancellations or call 860-215-9000 for recorded message on the college phone.

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Disabilities   If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider (DSP) as soon as possible. Please note that accommodations cannot be provided until you provide written authorization from a DSP.

<table>
<tr><td colspan="2" align="center">**TRCC Disabilities Service Providers**
Counseling & Advising Office
Room A-119</td></tr>
<tr><td>**Matt Liscum**
(860) 383-5240</td><td>Physical Disabilities
Sensory Disabilities
Medical Disabilities
Mental Health Disabilities</td></tr>
<tr><td>**Chris Scarborough**
 (860) 892-5751</td><td>Learning Disabilities
ADD/ADHD
Autism Spectrum</td></tr>
</table>

MyCommNet Alert: MyCommNet is a system that sends text messages and emails to anyone signed up in the event of a campus emergency. Additionally, TRCC sends messages when the college is delayed or closed due to weather. All students are encouraged to sign up for myCommNet Alert. A tutorial is available on the Educational Technology and Distance Learning Students page of the web site.
http://www.trcc.commnet.edu/div_it/educationaltechnology/Tutorials/myCommNetAlert/MIR3.html

Digication: All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her learning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportunities. If desired, students will have the option to create multiple portfolios

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COURSE CONTENT:

*Review of Functions/Inverse Functions **1/18/2018 - 1/30/2018**

   1.3) Functions, graphs
   2.1) Analyzing the graph of a function
   2.2) The toolbox functions and transformations
   5.1) One-to-one functions, inverse functions

Chapter 6: **An Introduction to Trigonometric Functions** **2/01/2018 – 2/20/2018**

   6.1) Angle Measure, Special Triangles, and Special Angles
   6.2) Unit Circle and the Trigonometry of Real Numbers
   6.3) Graphs of Sine and Cosine Functions
   6.4) Graphs of the Cosecant, Secant, Tangent, and Cotangent Functions
   6.5) Transformations and Applications of Trigonometric Graphs
   6.6) The Trigonometry of Right Triangles
   6.7) Trigonometry and the Coordinate Plane
   6.8) Trigonometric Equation Models

   TEST #1 2/22/2018

Chapter 7: **Trigonometric Identities, Inverses, and Equations** **2/27/2018 - 3/27/2018**
(3/10/2018 – 3/17/2018 – Spring Break)

   7.1) Fundamental Identities and Families of Identities
   7.2) More on Verifying Identities
   7.3) The Sum and Difference Identity
   7.4) The Double-Angle, Half-Angle and Product-to-Sum Identities
   7.5) The Inverse Trig Functions and Their Applications
   7.6) Solving Basic Trig Equations
   7.7) General Trig Equations and Applications

   Test #2 3/29/2018

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<u>Chapter 8</u>: **Applications of Trigonometry**   **4/03/2018 - 4/12/2018**
                                              (Joe Vacation 4/10)

   8.1) Oblique Triangles and the Law of Sines
   8.2) The Law of Cosines; the Area of a Triangle
   8.5) Complex Numbers in Trigonometric Form
   8.6) De Moivre's Theorem and the Theorem on nth Roots

<u>Chapter 10</u>: **Analytic Geometry and the Conic Sections**   **4/17/2018 - 4/26/2018**

   10.1) A Brief Introduction to Analytic Geometry
   10.2) The Circle and Ellipse
   10.3) The Hyperbola
   10.4) The Analytic Parabola
   10.5) Nonlinear Systems of Linear Equations and Inequalities

   TEST #3 5/01/2018

<u>Chapter 11</u>: **Additional Topics in Algebra and Review for final   5/3/2018 – 5/10/2018**

   11.1) Sequences and Series
   11.2) Arithmetic Sequences
   11.3) Geometric Sequences

   FINAL EXAM   5/15/2018

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HOMEWORK: An assignment will be given at the end of each class. You are expected to have completed the assignment for the next class session. Questions on the homework will be discussed at the beginning of each class.

Homework (odd numbers): This is a guide only. Assignments may vary.

Chapter 1: 1.3   p.43   9, 11, 15, 19-29, 57-67 99, 105

Chapter 2: 2.1.   p. 114   7-25
            2.2   p. 131   11, 13, 39, 41, 47, 49, 77

Chapter 5   5.1   p. 418   9, 15, 27, 39-45, 53-57

Chapter 6: 6.1   p.522   7 - 13, 19, 21, 27-35, 41-47, 51-55, 57-61, 63-83
            6.2   p. 537   19-27, 29-35, 37-43, 45-51, 61-65
            6.3   p.556   11-15, 21-27, 41-45, 53, 63
            6.4   p.572   15, 19-25, 33 – 37
            6.5   p.590   7-15, 23, 55
            6.6   p. 604   7-21, 43-57, 77, 79, 83
            6.7   p.618   7,9,13, 15, 21, 27, 33-63, 65, 69, 73, 75, 77, 81, 85
            6.8   p. 628   7

Chapter 7: 7.1   p. 659   7-23, 25,27, 29, 35-37, 39,41, 51-55
            7.2   p. 666   7 - 23
            7.3   p.676   7-33
            7.4   p.688   7-15, 23-29, 31, 33, 37, 39
            7.5   p.706   9-21
            7.6   p.718   7, 9, 15-27, 29-35, 47- 61
            7.7   p.728   7,10,13,15, 53

Chapter 8: 8.1   p. 754   13-21, 33, 35
            8.2   p. 767   7, 9, 21-27, 35, 40
            8.5   p.810   7-13, 19, 21, 27
            8.6   p.819   7, 11

 Chapter 10: 10.1   p. 966   7, 9
              10.2   p. 979   7, 9, 11, 15, 19, 21, 81
              10.3   p. 993   7, 9, 15, 29, 71
              10.4   p. 1003   7, 8, 31, 32, 37, 39, 45, 63, 65
              10.5   p. 1015   13, 15, 21, 25, 59

Chapter 11: 11.1 p.1086   7, 11, 19, 33-37, 41-45, 57
            11.2 p. 1096   7,11,15, 19, 31, 37, 43

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      11.3 p. 1108   9,11,19, 25,33, 39, 47

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. Identify local maxima, minima on the graphs of functions, and intervals of increase/decrease.
7. Model with functions.
8. Combine the functions, find their compositions, inverses.
9. Find the angle measure in radian, degree.
10. Find all trigonometric ratios in a right triangle.
11. Find trigonometric functions of real numbers using unit circle approach
12. Find the values of trigonometric functions on the coordinate plane from the information given.
13. Graph the trigonometric functions, apply transformations of graphs.
14. Model the real life problem with a trigonometric function.
15. Use the trigonometric identities, addition, subtraction, double, half-angle formula.
16. Evaluate inverse trigonometric functions.
17. Solve trigonometric equations.
18. Solve right triangles.
19. Use the law of Sines and the Law of Cosines to solve a triangle.
20. Plot the complex numbers on the complex plane.
21. Write the trigonometric form of a complex number.
22. Use the De Moivre 's theorem.
28. Work with sequences, series, factorials
29. Work with arithmetic, geometric sequences.
30. Model the real-life problems with arithmetic, geometric sequences.

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BOARD OF REGENTS FOR HIGHTER EDUCATION AND CONNECTICUT STATE COLLEGES AND UNIVERSITIES POLICY REGARDING SEXUAL MISCONDUCT REPORTING, SUPPORT SERVICES AND PROCESSES POLICY

Statement of Policy for Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:
"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking. It is the intent of the BOR and each of its colleges or universities to provide safety, privacy and support to victims of sexual misconduct and intimate partner violence."

•   Title IX clause:

UNITED STATES DEPARTMENT OF EDUCATION AND OFFICE OF CIVIL RIGHTS TITLE IX STATEMENT OF POLICY:
"Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in education programs and activities in federally funded schools at all levels. If any part of a school district or college receives any Federal funds for any purpose, all of the operations of the district or college are covered by Title IX.

Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students (as well as other persons) at recipient institutions are protected by Title IX – regardless of their sex, sexual orientation, gender identity, part-or full-time status, disability, race, or national origin-in all aspects of a recipient's educational programs and activities."
If any student experiences sexual misconduct or harassment, and/or racial or ethnic discrimination on Three Rivers Community College Campus, or fears for their safety from a threat while on campus, please contact Vicki Baker, the Diversity Officer and Title IX Coordinator: 860-215-9208 (vbaker@trcc.commnet.edu)