Effective Fall 2010

DIVISION OF NATURAL SCIENCES AND MATHEMATICS

TIDEWATER COMMUNITY COLLEGE

VIRGINIA BEACH CAMPUS

COURSE PLAN

Course Number and Title: MTH 166-PRECALCULUS with TRIGONOMETRY

Lecture Hours: 5 Lab Hours: 0 Credit Hours: 5

Submitted by: T. Froncillo, J. Gallo, J. Conner
C. Newsom, C. Hewett, M. Kirby
Date: 07/13/2010

Approved by: C. Newsom, M Kirby
Assistants to the Dean
Date: _____

Greg Frank
Academic Dean
Date: _____

MTH 166 PRECALCULUS with TRIGONOMETRY Effective Fall 2010

I. COURSE DESCRIPTION

Math 166 is designed to prepare students for Calculus. It includes algebra, analytical geometry, algebraic and transcendental functions and matrices.

II. PREREQUISITES:

Satisfactory score on placement test or SUCCESSFUL completion of MTH 4 or MTH 158

III. INTRODUCTION:

This course is designed to acquaint students with the concepts of modern college algebra, trigonometry, matrices and analytic geometry. It will provide students with the necessary background for a first course in calculus. The MTH 163/164 series or MTH 166 is a necessary prerequisite for engineering calculus (i.e., MTH 173).

IV. INSTRUCTIONAL MATERIALS:

Textbook: Algebra & Trigonometry-Custom Edition, by Blitzer, 2010;
ISBN 0558697099 (3 hole punch package) or
ISBN 0558749070 (Hardbound package);
Prentice Hall **REQUIRED**

Scientific or graphing calculator **REQUIRED**

MyMathLab **OPTIONAL**

NOTE: Students with the e-book through MyMathLab are not required to have a printed book.

V. MATERIAL TO BE COVERED:

Unit I	Chapter 1 & Chapter 2 ALL SECTIONS	3 weeks
Unit II	Chapter 3 (OMIT 3.6)	2 weeks
Unit III	Chapter 4 & 10.1 – 10.3	2 weeks
Unit IV	Chapter 5-sections 5.1 – 5.7	3 weeks
Unit V	Chapter 6 (OMIT 6.4)	2 weeks
Unit VI	Chapter 7 & section 5.8 (OMIT 7.3, 7.4, 7.5, 7.7)	1.5 weeks
Unit VII	Chapter 8 & section 9.1 (OMIT 8.3 and 8.6)	1.5 weeks

VI. BASIC CONCEPTS

Chapter 1: Equations and Inequalities

1.2 Linear Equations and Rational Equations
1.3 Models and Applications
1.4 Complex Numbers
1.5 Quadratic Equations
1.6 Other Types of Equations
1.7 Linear Inequalities and Absolute Value Inequalities
1.8 Poynomial and Rational Inequalities

Chapter 2: Functions and Graphs
1.1 Graphs and Graphing Utilities
2.1 Basics of Functions and Their Graphs
2.2 More on Functions and Their Graphs
2.3 Linear Functions and Slope
2.4 More on Slope
2.5 Transformations of Functions
2.6 Combinations of Functions; Composite Functions
2.7 Inverse Functions
2.8 Distance and Midpoint Formulas; Circles

Chapter 3: Polynomial and Rational Functions
3.1 Quadratic Functions
3.2 Polynomial Functions and Their Graphs
3.3 Dividing Polynomials: Remainder and Factor Theorems
3.4 Zeros of Polynomial Functions
3.5 Rational Functions and Their Graphs
3.6 OMIT

Chapter 10: Conic Sections and Analytic Geometry
10.1 The Ellipse
10.2 The Hyperbola
10.3 The Parabola
10.4 OMIT
10.5 OMIT
10.6 OMIT

Chapter 4: Exponential and Logarithmic Functions
4.1 Exponential Functions
4.2 Logarithmic Functions
4.3 Properties of Logarithms
4.4 Exponential and Logarithmic Equations
4.5 Exponential Growth and Decay; Modeling Data

Chapter 5: Trigonometric Functions
5.1 Angles and Radian Measure
5.2 Right Triangle Trigonometry
5.3 Trigononmetric Functions of Any Angle
5.4 Trigononmetric Functions of Real Numbers and Periodic Functions
5.5 Graphs of Sine and Cosine Functions
5.6 Graphs of Other Trigonometric Functions
5.7 Inverse Trigonometric Functions
5.8 Applications of Trigonometric Functions

Chapter 6: Analytic Trigonometry
6.1 Verifying Trigonometric Identites
6.2 Sum and Difference Formulas
6.3 Double-Angle, Power Reducing, and Half-Angle Formulas
6.4 OMIT
6.5 Trigonometric Equations

Chapter 7: Additional Topic in Trigonometry
7.1 The Law of Sines
7.2 The Law of Cosines
7.3 OMIT
7.4 OMIT
7.5 OMIT
7.6 Vectors
7.7 OMIT

Chapter 8: Systems of Equations and Inequalities
8.1 Systems of Linear Equations in Two Variables
8.2 Systems of Linear Equations in Three Variables
8.3 OMIT
8.4 Systems of Nonlinear Equations in Two Variables
8.5 Systems of Inequalities
8.6 OMIT
9.1 Matrix Solutions to Linear Systems
9.5 Determinants and Cramer's Rule

VII. SUGGESTED WEEKLY SCHEDULE – 16 WEEK SEMESTER:

Week 1: Chapter 1 – All sections (cover as a review)
Week 2: 2.1 – 2.4
Week 3: 2.5 – 2.7, Test Unit I, 3.1
Week 4: 3.1 – 3.4
Week 5: 3.5 (OMIT 3.6), Test Unit II, 10.1
Week 6: 10.2, 10.3 (OMIT 10.4-10.6), 4.1 – 4.3
Week 7: 4.4, 4.5, Test Unit III, 5.1
Week 8: 5.2 – 5.4
Week 9: 5.5 - 5.7
Week 10: Test Unit IV, 6.1, 6.2
Week 11: 6.3 (OMIT 6.4), 6.5, Test Unit V
Week 12: 5.8, 7.1, 7.2 (OMIT 7.3 – 7.5, 7.7)
Week 13: 7.6, Test Unit VI, 8.1, 8.2 (OMIT 8.3)
Week 14: 8.4, 8.5 (OMIT 8.6), 9.1
Week 15: 9.5, (cover 9.2 – 9.4 if time permits), Test Unit VII
Final Exam to be given at the scheduled exam period

VIII. SUGGESTED WEEKLY SCHEDULE – 10 WEEK SEMESTER

Week 1: Chapter 1, 2.1, 2.3
Week 2: 2.3 – 2.7, Test Unit I
Week 3: 3.1 – 3.5 (OMIT 3.6)
Week 4: Test Unit II, 10.1 – 10.3 (OMIT 10.4 – 10.6), 4.1, 4.2
Week 5: 4.3 – 4.5,Test Unit III, 5.1
Week 6: 5.2 – 5.6
Week 7: 5.7, Test Unit IV, 6.1, 6.2, 6.3 (OMIT 6.4)
Week 8: 6.5, Test Unit V, 5.8, 7.1, 7.2 (OMIT 7.3 – 7.5, 7.7)
Week 9: 7.6, Test Unit VI, 8.1, 8.2 (OMIT 8.3), 8.4
Week 10: 8.5, 9.1, 9.5, **Final Exam**

IX. ADDITIONAL MATERIAL AVAILABLE TO STUDENTS

TCC Student ID Required to Use these Resources

1. Instructor's Solution Manual Available in Math Lab
2. MyMathLab CD (with videos) Available in Math Lab