

Effective Fall 2010

DIVISION OF NATURAL SCIENCES AND MATHEMATICS

TIDEWATER COMMUNITY COLLEGE

VIRGINIA BEACH CAMPUS

COURSE PLAN

Course Number and Title: MTH 163-PRECALCULUS I

Lecture Hours: 3

Lab Hours: 0

Credit Hours: 3

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Date: 7/6/2010

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

Date: _____

Greg Frank
Academic Dean

Date: _____

I. COURSE DESCRIPTION

This course is designed to give students a thorough understanding of functions. It includes relations and functions, and their graphs; inverse functions; applications of functions; polynomial, rational, exponential, and logarithmic functions; systems of equations; and an introduction to matrices.

II. PREREQUISITES:

Successful completion of MTH 4 or MTH 158 or satisfactory score on placement test.

III. INTRODUCTION:

This course is designed to acquaint students with the concepts of modern college algebra, matrices and analytic geometry. It will provide students with the necessary background for a first course in applied calculus (i.e., MTH 270). 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 ALL SECTIONS	3 weeks
Unit II	Chapter 2 ALL SECTIONS	3.5 weeks
Unit III	Chapter 3 ALL SECTIONS	3 weeks
Unit IV	Chapter 4 ALL SECTIONS	2.5 weeks
Unit V	Chapters 8 and section 9.1 (OMIT 8.3, 8.6)	3 weeks

VI. BASIC CONCEPTS**Chapter 1: Equations and Inequalities**

1.1 Graphs and Graphing Utilities(NOTE: Section 1.1 can be covered with chapter 2)

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 Polynomial and Rational Inequalities

Chapter 2: Functions and Graphs

- 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 Modeling Using Variation

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 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

VII. SUGGESTED WEEKLY SCHEDULE – 16 WEEK SEMESTER:

- Week 1: 1.1 – 1.3
- Week 2: 1.4 – 1.6
- Week 3: 1.7, 1.8, Test Unit I
- Week 4: 2.1-2.3
- Week 5: 2.3 - 2.5
- Week 6: 2.6 - 2.8
- Week 7: Test Unit II, 3.1
- Week 8: 3.2, 3.3
- Week 9: 3.4, 3.5
- Week 10: 3.6, Test Unit III, 4.1
- Week 11: 4.2-4.4

Week 12: 4.4, 4.5, Test Unit IV
Week 13: 8.1, 8.2
Week 14: 8.4, 8.5
Week 15: 9.1, Test Unit V
Final Exam to be given at the scheduled exam period

VIII. SUGGESTED WEEKLY SCHEDULE – 10 WEEK SEMESTER

Week 1: 1.1 – 1.5
Week 2: 1.6 – 1.8, Test Unit I
Week 3: 2.1 – 2.4
Week 4: 2.5 – 2.8
Week 5: Test Unit II, 3.1 – 3.3
Week 6: 3.4 - 3.6
Week 7: Test Unit III, 4.1 – 4.3
Week 8: 4.4, 4.5, Test Unit IV
Week 9: 8.1, 8.2, 8.4, 8.5
Week 10: 9.1, Test Unit V, **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. Videos available through MML