

Effective Spring 2011

DIVISION OF NATURAL SCIENCES AND MATHEMATICS
TIDEWATER COMMUNITY COLLEGE
VIRGINIA BEACH CAMPUS
COURSE PLAN

Course Number and Title: MTH 164-PRECALCULUS II

Lecture Hours: 3

Lab Hours: 0

Credit Hours: 3

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Date: 12/5/2010

Approved by: _____
Assistants to the Dean

Date: _____

Academic Dean

Date: _____

Copies: Provost
Dean of Instruction

I. COURSE DESCRIPTION

This course is designed to prepare students for calculus. It includes trigonometric functions, identities, equations and applications, matrices, and conic sections.

II. PREREQUISITES:

Satisfactory score on placement test or SUCCESSFUL completion of MTH 163

III. INTRODUCTION:

This course is designed to acquaint students with the concepts of modern college algebra, trigonometry, matrices and analytic geometry. 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-3 hole punch package 0558697099 or Hardbound package 0558749070;
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 5, sections 5.1 – 5.7 3.5weeks

NOTE: section 5.8 will be covered in Unit III

Unit II - Chapter 6 OMIT 6.4 3 weeks

Unit III- Sections 5.8, 7.1, 7.2, 7.6 2.5weeks
(7.7 optional, OMIT 7.3 – 7.5)

Unit IV- Chapter 9 All sections 3 weeks

Unit V - Sections 2.8(circles), 10.1-10.3 3 weeks
11.1-11.5 (11.4 optional)

VI. BASIC CONCEPTS

Unit I – Trigonometric Functions

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

Unit II – Analytic Trigonometry

- 6.1 Verifying Trigonometric Identities
- 6.2 Sum and Difference Identities
- 6.3 Double-Angle, Power-Reducing, and Half-Angle Formulas
- 6.4 OMIT
- 6.5 Trigonometric Equations

Unit III – Additional Topics in Trigonometry

- 5.8 Applications of Trigonometric Functions
- 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 The Dot Product-OPTIONAL

Unit IV – Matrices and Determinants

- 9.1 Matrix Solutions to Linear Systems
- 9.2 Inconsistent and Dependent Systems and Their Applications
- 9.3 Matrix Applications and Their Applications
- 9.4 Multiplicative Inverses of Matrices and Matrix Equations
- 9.5 Determinants and Cramer's Rule

Unit V – Conic Sections, Sequences and Series

- 2.8 Distance and Midpoint Formulas; Circles-COVER CIRCLES ONLY (p. 312 31-65)
- 10.1 The Ellipse
- 10.2 The Hyperbola
- 10.3 The Parabola
- 11.1 Sequences and Summation Notation
- 11.2 Arithmetic Sequences
- 11.3 Geometric Sequences and Series

- 11.4 Mathematical Induction - OPTIONAL
- 11.5 The Binomial Theorem
- 11.6 OMIT

VII. SUGGESTED WEEKLY SCHEDULE - 15 WEEK SEMESTER

- Week 1: 5.1, 5.2
 - Week 2: 5.3, 5.4
 - Week 3: 5.5, 5.6
 - Week 4: 5.7, Test Unit I
 - Week 5: 6.1, 6.2
 - Week 6: 6.3, 6.5 (OMIT 6.4)
 - Week 7: 6.5, Test Unit II
 - Week 8: 5.8, 7.1
 - Week 9: 7.2, 7.6 (OMIT 7.3-7.5, OPTIONAL 7.7)
 - Week 10: Test Unit III, 9.1
 - Week 11: 9.2 - 9.4
 - Week 12: 9.5, Test Unit IV
 - Week 13: 2.2(circles only), 10.1, 10.2
 - Week 14: 10.3, 11.1, 11.2
 - Week 15: 11.3, 11.5, Test Unit V
- Final Exam during Scheduled exam period

VIII. SUGGESTED WEEKLY SCHEDULE - 10 WEEK SEMESTER

- Week 1: 5.1-5.3
- Week 2: 5.4-5.7
- Week 3: Test Unit I, 6.1, 6.2
- Week 4: 6.3, 6.5 (OMIT 6.4)
- Week 5: Test Unit II, 5.8, 7.1
- Week 6: 7.2, 7.6 (OMIT 7.3-7.5, OPTIONAL 7.7)
- Week 7: Test Unit III, 9.1-9.3
- Week 8: 9.4, 9.5, Test Unit IV
- Week 9: 2.2(circles), 10.1 – 10.3
- Week 10: 11.1-11.3, 11.5, Test Unit V, Final Exam

IX. Additional Material Available to Students

Complete Solutions Guide in Math Lab

Note: To use the above, a student ID is required.

Notes to Instructor:

1. In chapter 5, students are expected to give the exact values of the trigonometric functions of special angles.

2. In chapter 6, emphasize solving trigonometric equations.
3. In chapter 6, students are expected to remember the fundamental trigonometric identities. Students do not need to remember sum and difference or multiple angle identities.
4. Section 9.1 should have been covered in MTH 163. Teach the material as a review.
5. In the sections on conic sections, students should be able to get the standard form of the conic and graph. Students do not need to know the vocabulary (directrix, foci, etc).

Recommended Homework Assignment for Math 164
ALGEBRA & TRIGONOMETRY, CUSTOM EDITION FOR TIDEWATER COMMUNITY
COLLEGE
by Robert Blitzer
Effective SPRING 2011

SUGGESTED PROBLEM SETS

- These problems indicate the content to be covered.
- If you give problems that are not on this list, you should be sure that they match what you have covered.
- Be careful about exercises that may require a graphing calculator.
- This list does not include writing exercises which you may wish to use.
- You do not need to include each exercise in the list.
- This list is intended to be a guide to help you pick problems.

5.1	p. 496	7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 35, 41, 43, 45, 47, 49, 51, 89
5.2	p. 511	3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 25, 31, 33, 35, 37, 39, 73, 75, 77, 79
5.3	p. 527	1, 5, 7, 13, 15, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 61, 65, 71
5.4	p. 534	5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 53
5.5	p. 556	9, 11, 13, 19, 21, 25, 27, 41, 45, 47, 49, 51, 53, 59, 61, 63, 65, 67, 113
5.6	p. 569	5, 9, 11, 19, 21, 23, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 59, 61, 89
5.7	p. 586	1, 3, 5, 9, 13, 17, 23, 27, 31, 39, 41, 43, 47, 49, 51, 53, 63, 65, 93, 119
5.8	p. 597	1, 3, 11, 13, 15, 17, 29, 35, 41, 45, 47, 49, 51, 53, 55, 57, 59, 61, 73
6.1	p. 616	1, 3, 7, 9, 11, 17, 23, 27, 31, 33, 35, 41, 43, 45, 47, 53, 55, 57, 59, 89
6.2	p. 625	3, 5, 7, 9, 15, 19, 25, 27, 29, 31, 33, 37, 39, 43, 45, 49, 51, 57, 59, 79
6.3	p. 636	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 27, 31, 39, 41, 43, 47, 51, 57, 65
6.4		OMIT
6.5	p. 658 1	1, 19, 27, 33, 39, 41, 47, 49, 63, 65, 69, 71, 75, 77, 81, 93, 97, 105, 113, 115
7.1	p. 673	17, 19, 21, 23, 25, 27, 29, 31, 33, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59
7.2	p. 683	3, 5, 9, 17, 31, 37, 39, 41, 43, 45, 47, 49, 51, 61
7.3		OMIT
7.4		OMIT
7.5		OMIT
7.6	p. 731	1, 5, 13, 31, 33, 41, 43, 47, 49, 61, 65, 71, 73, 75, 77, 79, 81, 83, 85, 107
7.7	p. 741	3, 7, 11, 19, 21, 23, 27, 35, 37, 43, 45, 49, 51, 53, 55, 57, 59, 61, 63, 79
9.1	p. 832	7, 11, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45
9.2	p. 842	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 33

9.3	p. 856	3, 5, 9, 11, 19, 21, 25, 27, 29, 31, 35, 37, 39, 41, 43, 49, 51, 53, 55, 57
9.4	p. 871	1, 7, 11, 13, 15, 17, 21, 23, 31, 35, 37, 39, 41
9.5	p. 884	1, 3, 5, 7, 9, 15, 17, 19, 21, 23, 27, 29, 31, 33, 35, 37, 39, 41, 43, 53
10.1	p. 901	7, 25, 29, 35, 39, 43, 45, 47, 49, 51, 53, 55, 65, 67, 79, 81
10.2	p. 915	3, 5, 7, 9, 21, 23, 27, 29, 31, 33, 39, 43, 45, 47, 49, 61, 63
10.3	p. 927	13, 15, 17, 21, 25, 35, 39, 43, 45, 61, 63, 65, 67
10.4		OMIT
10.5		OMIT
10.6		OMIT
11.1	p. 978	1, 7, 9, 13, 17, 19, 21, 23, 25, 27, 29, 39, 43, 49, 51, 53, 55, 57, 59
11.2	p. 987	1, 3, 5, 9, 11, 17, 19, 21, 23, 29, 33, 37, 43, 45, 47, 59
11.3	p. 1001	3, 5, 11, 13, 17, 21, 25, 27, 29, 31, 33, 37, 41, 43, 45, 47, 49, 77, 110
11.4	p. 1012	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 41, 43
11.5	p. 1019	1, 3, 5, 7, 9, 11, 13, 15, 17, 27, 31, 37, 39, 43, 47, 83