

MAC 1147 Pre-Calculus

SECTION 10164

Spring 2016

Monday & Wednesday, 12:00pm - 1:40pm

Building 2 Room 2007

Instructor: Mario Ibanez

E-mail: mario.ibanez@unf.edu

Phone: 954 – 654 – 4112

Office Hours: Building 3, Room 2234 - 2:00pm – 4:00pm, Monday – Thursday

Textbook: Precalculus, 10th Edition by Michael Sullivan

ISBN: 9780321978981

A graphing calculator is recommended.

Prerequisite: Intermediate Algebra

Grading:

Homework	15%
Test 1	15%
Test 2	15%
Test 3	15%
Test 4	15%
Final Exam	25%

Scale:

A	93%
B+	90%
B	87%
C+	77%
C	70%
D	60%

Important Dates:

January 18 th , 2016	Martin Luther King Day (No Class)
January 27 th , 2016	Test 1 (Appendix and 11.1)
February 10 th , 2016	Test 2 (Chapter 1 & 2)
March 9 th , 2016	Test 3 (Chapter 3, 4, 5)
March 14 th – March 19 th	Spring Break (No Class)
March 25 th , 2016	Withdraw Deadline
April 11 th , 2016	Test 4 (Chapter 6, 7, 8)
April 25 th , 2016	Finals Week Begins

Policies: **Attendance** is essential for success. This course is especially fast-paced so it is extremely important that a student **does NOT** fall behind. The student is responsible for any classes missed. This includes exam dates, homework assignments, quizzes, and lecture notes.

Homework will be given each class and assignments must be completed on time. The problems are assigned for the purpose of practice at the end of the sections. Students are expected to prepare questions about problems that give them trouble and ask at the following class period. Homework is vital for proper preparation for tests. The homework will only serve to help your grade. If your homework average is less than the average of the first four tests, then the homework grade will not be counted.

Exams are based on the lectures and homework problems. If anyone requires special test-taking accommodations, please contact me as soon as possible. Please note the dates of exams because make-up exams will be given only for extraordinary circumstances. Excuses must be given in advance in the event of a missed exam.

Academic Honesty

Each student's grade should reflect only that student's achievement. Thus, CHEATING, PLAGAIARISM, ASSISTING OR ALLOWING OTHERS TO VIOLATE ACADEMIC HONESTY are grounds for receiving a grade of F for the entire course.

Disability Resources

Students with disabilities who seek reasonable accommodations in the classroom or other aspects of performing their coursework must first register with the UNF Disability Resource Center (DRC) located in Building 57, Room 1201. DRC staff members work with students to obtain required documentation of disability and to identify appropriate accommodations as required by applicable disability laws including the Americans with Disabilities Act (ADA). After receiving all necessary documentation, the DRC staff determines whether a student qualifies for services with the DRC and if so, the accommodations the student requires will be provided. DRC staff then will prepare a letter for the student to provide faculty advising them of approved accommodations. For further information, contact the DRC by phone at (904) 620-2769 or visit the DRC website <http://www.unf.edu/dept/disabled-services>

General Education Outcomes

MAC 1147 is designed to satisfy the following criteria from the Student Outcomes of General Education:

Know the world.

Demonstrate knowledge of the natural sciences, mathematics, arts, and human societies. This course focuses on the “mathematics” portion of this outcome. The whole course contributes to satisfying this outcome.

Think Critically.

Read, analyze, and understand complex texts or quantitative information. This course focuses on the “quantitative information” portion of this outcome. The whole course contributes to satisfying this outcome.

Solve Problems.

Formulate and/or apply models to evaluate problems and draw conclusions. We reach this goal by setting up and solving linear, quadratic, exponential, logarithmic, and trigonometric word problems and equations.

Plan for dealing with disruption of normal activities:

In the event of disruption of normal classroom activities due to an emergency such as hurricane, pandemic or other unforeseen event or combination of events, the format of this course may be modified in order to enable completion of the course requirements. In that event, you will be provided an addendum to this syllabus that will supersede this version. It is your responsibility as a student participant to be proactive during any emergency to find instructions that will be sent through email (or posted to the osprey website) as determined by the instructor as appropriate for the circumstances.

PRECALCULUS MAC 1147 CONTENT:

Appendix A: sections A.1, A.3, A.5, A.6, A.7, A.8, A.9, A.10

Chapter 1: sections 1.1, 1.2, 1.3, 1.4

Chapter 2: all sections

Chapter 3: sections 3.1, 3.3, 3.4 (omit subsection on building quadratic functions from data), 3.5

Chapter 4: sections 4.1, 4.2 (omit asymptotes), 4.4, 4.6 (Fundamental Theorem of Algebra)

Chapter 5: sections 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8

Chapter 6: sections 6.1, 6.2, 6.3, 6.4, 6.5, 6.6 (omit sinusoidal curve fitting)

Chapter 7: all sections

Chapter 8: section 8.1

Chapter 11: section 11.1 (systems of two equations with two unknowns)

CORE CONTENT FOR MAC1147:

1. Basic concepts

- a) Properties of Exponents
- b) Properties of Radicals
- c) Polynomials and Factoring
- d) Operations on Complex Numbers
- e) Operations on Rational Expressions

2. Equations of One Variable

- a) Linear Equations and Their Applications
- b) Linear Inequalities
- c) Quadratic Equations and Their Applications
- d) Rational Expressions and Equations
- e) Quadratic and Rational Inequalities

3. Equations of Two Variables

- a) Cartesian Coordinate System
- b) Linear Equations and their Forms
- c) Solving Two Equations with Two Unknowns and Their Applications
- d) Parallel and Perpendicular Lines
- e) Linear Inequalities
- f) Circles

4. Functions and their Graphs

- a) Introduction to Functions and their Graphs
- b) Linear and Quadratic Functions with and their Graphs and Applications
- c) Operations on Functions
- d) Inverses of Functions and their Graphs

5. Exponential and Logarithmic Functions

- a) Exponential Functions and their Graphs
- b) Logarithmic Functions and their Graphs
- c) Applications of Exponential and Logarithmic Functions (Population Growth, Radioactive Decay, Compound Interest)

6. Trigonometric Functions

- a) Angles and Their Measure
- b) Unit Circle Approach
- c) Definitions of Trigonometric Functions
- d) Properties of the Trigonometric Functions
- e) Graphs of the Sine, Cosine, and Tangent Functions
- f) Amplitude, Frequency and Phase Shifts

7. Analytic Trigonometry

- a) The Inverse Sine, Cosine, and Tangent Functions
- b) Trigonometric Identities
- c) Sum and Difference Formulas
- d) Double-angle and Half-angle Formulas
- e) Trigonometric Equations

8. Applications of Trigonometric functions

- a) Right Triangle Trigonometry; Applications

Tentative Schedule:

Day	Date	Sections Covered	Assignment Due
Wednesday	01/06/16	A.1, A.3, A.5	
Monday	01/11/16	A.5, A.6, A.7	<p>HW 1</p> <p>A.1: 51 – 119, every other odd A.3: 35 – 59, every other odd and 77 – 121, every other odd, 131, 135, 139</p>
Wednesday	01/13/16	A.7, A.8, 11.1, A.9	<p>HW 2</p> <p>A.5: 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38, 41, 44 A.6: 15 – 83, every other odd, 95-107 every other odd Solve equations using any method.</p>
Monday	01/18/16	Martin Luther King Day (University Holiday)	
Wednesday	01/20/16	A.10	<p>HW 3</p> <p>A.7: 11 – 73, every other odd A.8: 19, 21, 26, 27, 33, 36, 36, 46, 47 11.1: 19, 25, 33, 61, 67, 71 A.9: 58, 61, 64, 67, 70, 73, 76, 79, 82, 85, 88, 91, 94, 97, 100, 103</p>
Monday	01/25/16	Complete Appendix and Review	<p>HW 4</p> <p>A.10: 11 – 113, odds</p>
Wednesday	01/27/16	Test 1 (Appendix and 11.1)	
Monday	02/01/16	1.1, 1.2, 1.3, 1.4, 2.1	
Wednesday	02/03/16	2.1, 2.2, 2.3, 2.4	<p>HW 5</p> <p>1.1: 26, 34, 42 1.2: 14, 20, 24, 46, 48, 55, 68, 71 1.3: 18, 24, 26, 30, 35, 43, 46, 52, 59, 69, 91, 97, 108 1.4: 24, 28, 33, 36</p>
Monday	02/08/16	2.4, 2.5, 2.6	<p>HW 6</p> <p>2.1: 28, 30, 44, 52, 56, 66, 70, 77, 78, 80, 83, 84, 88 2.2: 12, 16, 29, 35 (a) – (d) 2.3: 13 – 24 all, 31, 39, 47, 66, 73</p>
Wednesday	02/10/16	Test 2 (Ch 1 & 2)	<p>HW 7</p> <p>2.4: 11 – 18 all, 23, 28, 35, 39, 44 2.5: 41, 50, 52, 56 2.6: 11, 13, 15, 18</p>
Monday	02/15/16	3.1, 3.3, 3.4	

Wednesday	02/17/16	4.1, 4.2, 4.3	HW 8 <u>3.1:</u> 16, 29, 37, 39, 40, 42, 46, 48 <u>3.3:</u> 39 – 87, every other odd <u>3.4:</u> 3, 5, 11 (a) (b) (c), 17
Monday	02/22/16	3.5 & 4.4, 4.6	HW 9 <u>4.1:</u> 49 – 63 every other odd, 69-72 all, 73-97 every other odd <u>4.2:</u> 15 – 27 odds, 31, 33, 45-55 odds <u>4.3:</u> 9, 33, 35 (SKIP step 6)
Wednesday	02/24/16	5.1, 5.2, 5.3	HW 10 <u>3.5:</u> 7, 17, 20, 23, 33, 36 <u>4.4:</u> 19 – 47 every other odd <u>4.6:</u> 23, 24, 31, 32, 36
Monday	02/29/16	5.4, 5.5, 5.6	HW 11 <u>5.1:</u> 15 – 45 every other odd <u>5.2:</u> 13 – 73 every other odd <u>5.3:</u> 57, 58, 63 – 81 odds, 102, 105 (a) (b), 107 (a) (b)
Wednesday	03/02/16	5.7, 5.8	HW 12 <u>5.4:</u> 11 – 49 odds, 89 – 111 odds, 118 <u>5.5:</u> 13 – 69 every other odd <u>5.6:</u> 5 – 67 every other odd, 91
Monday	03/07/16	Review Chapters 3, 4, 5	HW 13 <u>5.7:</u> 9, 15, 25, 29, 33, 36 <u>5.8:</u> 2, 4, 7-13 odds
Wednesday	03/09/16	Test 3 (Chapters 3, 4, 5)	
Monday	03/14/16	Spring Break	
Wednesday	03/16/16		
Monday	03/21/16	8.1, 6.1	

Wednesday	03/23/16	6.2 (Quiz) Handouts	<u>HW 14</u> <u>8.1:</u> 9 – 17 odds, 35, 42, 49 – 61 every odd, 66, 71, 74 <u>6.1:</u> 11 – 21 odd, 35 – 57 odd, 71 – 81 odd, 91
Monday	03/28/16	6.3, 7.4 (Quiz)	<u>HW 15</u> <u>6.2:</u> 13 - 63 every other odd, 85, 91
Wednesday	03/30/16	6.4, 6.5, 6.6 (Quiz)	<u>HW 16</u> <u>6.3:</u> 15 – 87, multiples of 3 <u>7.4:</u> 22, 25, 29, 33, 39, 41, 47, 49, 51, 55, 80
Monday	04/04/16	7.1, 7.2, 7.3 (Quiz)	<u>HW 17</u> <u>6.4:</u> 33-55 every other odd <u>6.5:</u> 17, 33, 37 <u>6.6:</u> 3 – 8 all
Wednesday	04/06/16	7.5, 7.6, 7.7 (Quiz)	<u>HW 18</u> <u>7.1:</u> 15 - 26 all, 39 – 57 odds, 61, 68 <u>7.2:</u> 9 - 42 odds <u>7.3:</u> 13-26 all and 59-81 odds
Monday	04/11/16	Review Trigonometry	<u>HW 19</u> <u>7.5:</u> 15-39 multiples of 3 <u>7.6:</u> 9-27 multiples of 3
Wednesday	04/13/16	Test 4 – Trigonometry (Chapters 6 and 7 and Section 8.1)	
Monday	04/18/16	Final Exam Review	
Wednesday	04/20/16	No Class (Reading Day)	
Finals Week (April 25th - April 29th)			