**62:150 Precalculus**

 **Fall 2016**

Class Time Slot 2: Monday, Wednesday, Friday, 9:30 - 10:20 a.m.

& Location: Room 1-54 Brodie Science Building

Instructor: Kathleen Nichol

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Textbook: Precalculus - Mathematics for Calculus, Sixth Edition

 by James Stewart, Lothar Redlin and Saleem Watson *or earlier editions*

 Cost: $202.25 to purchase new; $151.75 to purchase used; $111.24 for rental.

Course Objectives:

Algebra and trigonometry, the backbones of a pre-calculus course, are two of the most useful subjects you will every study. They can be used to solve applied problems that arise in almost every field. If you are interested in business, architecture, medicine, law, physics, biology, chemistry, agriculture, forestry, or journalism, you will find algebra and trigonometry useful problem-solving tools.

This course is an intense overview of mathematical topics which are important for understanding calculus at the university level. It emphasizes the mathematic concepts and techniques which form the foundation of calculus. By helping students to improve their understanding of these basic ideas, we hope that they will be better able to make a smooth transition to university level calculus. By the end of this course, we hope to bridge the gap between what you know and what you need to know to successfully complete Calculus I.

From the table of contents, we will cover the following sections:

Chapter 1. Fundamentals – 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.10, 1.11

Chapter 2. Functions – 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7

Chapter 3. Polynomial and Rational Functions – 3.1, 3.2, 3.3, 3.4, 3.7

Chapter 4. Exponential and Logarithmic Functions – 4.1, 4.2, 4.3, 4.4, 4.5, 4.6

Chapter 6. Trigonometric Functions of Angles – 6.1, 6.2, 6.3, 6.4, 6.5, 6.6

Chapter 5. Trigonometric Functions of Real Numbers – 5.1, 5.2, 5.3, 5.4

Chapter 7. Analytic Trigonometric – 7.1, 7.2, 7.3 (double angles), 7.4, 7.5

Chapter 10. Systems of Equations and Inequalities – 10.1, 10.2, 10.8, 10.9

Chapter 11. Conic Sections – 11.1, 11.2, 11.3, 11.4

Chapter 12. Sequences and Series – 12.1, 12.2, 12.3, 12.6

Lab: Tuesdays 1:40 p.m. - 3:30 p.m. in Room 1-53 BB.

The lab periods are for writing the Tests and completing the Problem Sets. The Problem Sets will be handed out the previous Friday but due by the end of the lab period. The tests are closed-book tests.

Expectations:

1. Keep up with assignments.
2. Ask questions. Before or after class. At the office. From the Math Centre. In lab. Please make use of the resources.
3. This is a demanding course, but you can do it, with diligent work.
4. You will see the beauty of the math if you keep on top of it.
5. Don’t rely on memorization to learn math – understand.
6. Consider math a foreign language – it must be practiced.

Marking Scheme:

Problem Sets (5): = 15%

Tests (4): = 35%

Final Exam: = 50%

 100%

Note: If all problem sets and tests are written, the lowest of each will be dropped.

Tests are to be written in the scheduled lab period.

Letter Grades: A+ = 90 – 100%

 A = 80 – 89.9%

 B+ = 76 – 79.9%

 B = 70 – 75.9%

 C+ = 66 – 69.9%

 C = 60 – 65.9%

 D = 50 – 59.9%

 F = 0 – 49.9%

Departmental Rule: Less than 45% on the final exam is an automatic F for the course.

Pretest:In the first lab period you will be given a pretest to ensure that this is the best course for you.

# Moodle: The answers for the Problem Sets and Tests will be posted on the Moodle website. Be sure to check them to understand the material better.

# The course password is “mathispowerful!”.

# Some Resources:

# This is a free on-line text called “Precalculus/College Algebra/Trigonometry, much like ours: <https://aimath.org/textbooks/approved-textbooks/stitz-zeager/>

Learning Goals:

\* see / hear / discuss / work through concepts so understand them

\* recognize appropriate techniques to solve various types of algebraic problems

\* carry out the techniques

\* check solutions, by approximation or plugging in or using another method to
 solve the problem

\* recognize how the math concepts relate / build on each other

\* gain confidence in one’s own ability to solve math problems

\* recognize and develop one’s own learning style

\* enjoy the challenge of doing math

\* succeed in the above goals

# Tentative Progress Rate

Chapter Topic Problem Set and Test Schedule

Chapter 1 Review September 13 Pretest & on Problem Set 1

 **September 20 Problem Set 1 part 1 due**

 **September 27 Test 1 & rest of PS1**

Chapter 2 Functions October 4 On Problem Set 2

Chapter 3 Polynomial Functions **October 11 Problem Set 2 part 1 due**

 **October 18 Test 2 & rest of PS2**

Chapter 4 Exponents and Logarithms October 25 On Problem Set 3

Chapter 6 Triangle Trigonometry **November 1 Problem Set 3 part 1 due**

Chapter 5 Trig Graphs **November 8 Test 3 & rest of PS3**

Chapter 7 Trig Functions, Identities, November 15 On Problem Set 4

 & Equations **November 22 Problem Set 4 part 1 due**

Chapter 10 Systems of Equations **November 29 Test 4 & rest of PS4**

 & Inequalities

Chapter 11 Conic Sections

Chapter 12 Sequences and Series

Exam Review given out December 6

**Final Exam Tuesday, December 13, 2016, 2:00 p.m. – 5:00 p.m.**