University of Delaware
Department of Mathematical Sciences
MATH 115 - PRECALCULUS
Syllabus
Fall 2011

TEXTBOOK: *Precalculus Essentials* by Blitzer, 3rd edition

ISBN: A new book from the bookstore comes packaged with an access code for Course Compass with ISBN 978-0-321-74452-4.
You must have an access code for CourseCompass. If you have purchased a used textbook, then you can buy the access code online at www.coursecompass.com

Course Content

MATH 115 - Precalculus, is designed to prepare students for entry into MATH 221 Calculus. Students who are planning on taking MATH 241 Calculus should enroll in MATH 117 - Precalculus for Scientists and Engineers. Any student who is not required to take precalculus for his/her major may wish to consult their advisor to determine whether MATH 114 or MATH 113 is more appropriate.

MATH 115 is an in-depth study of the concept of functions. We will specifically study linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions. Both algebraic and graphical techniques will be used throughout the course.

Prerequisites:

It is expected that you have a solid understanding of algebra topics. A review of these topics appears in the **Prerequisites Chapter (P.1 - P.9),** Intermediate Algebra, MATH 010, is a prerequisite for this course. Please be advised that it is not recommended that you enroll in this class without this prerequisite or proficiency with the topics of that course. If you are registered without the proper prerequisite, you do so at your own risk. The content of MATH 010 will be assumed to be known to the students in this class, and you may be at serious jeopardy if you have not mastered it before.

Course Organization

This MATH 115 section meets each week for 2.5 hours in three 50- minute classes. Although most of you have studied precalculus in high school and many may have studied calculus, there are several important distinctions between high school and university mathematics courses that you should note:

- The pace of the course is considerably faster than most high school courses.
- You are expected to spend significant time outside of class reading the text, doing homework problems, and preparing yourself to participate in class.
- There are common exams that all MATH 115 students take at the same time - three specific Wednesday evenings.
- The grading scale is fixed. **There is no "curving"**, nor any special grading arrangements.

Sample syllabus -- The official syllabus will be provided by the course instructor.

Graphing Calculator

A graphing calculator is required. The **TI-83, TI-83+, TI-84, TI-84+** graphing calculator is recommended. You may not use a **TI-89** on exams. While it is permissible to use another brand of graphing calculator, you must know how to use it. The graphing calculator is an important tool for exploring and understanding the mathematical concepts in this course. It will be used in class, for homework assignments, and will be required on exams. Always take your calculator to class. It is your responsibility to insure that your calculator is working properly during examinations and to know how to use its features. Calculators will **NOT** be provided.

Testing and Grading

Your course grade depends solely on the number of points earned throughout the semester. The points are distributed as follows:

EXAM 1 _____100 points
EXAM 2 _____100 points
EXAM 3 _____100 points
FINAL EXAM (cumulative) _____ 150 points
INSTRUCTOR DESIGNATED POINTS_____ 115 points
Total possible points _____ 565 points

Grading Scale

	Points	Percent		Points	Percent
A	508 - 565	90-100	C	395 - 417	70-73
A-	491 - 507	87-89	C-	378 - 394	67-69
B+	474 - 490	84-86	D+	361 - 377	64-66
B	452 - 473	80-83	D	339 - 360	60-63
B-	435 - 451	77-79	D-	322 - 338	57-59
C+	418 - 434	74-76	F	< 322	< 57

Please note that there is no "curving" of grades in this course. There are no special grading arrangements. No exceptions will be made to this grading scheme.

NOTE: The last day to drop a course is Tuesday, October 25, 2011.

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Hourly Exams:

The three exams will be administered from 5:00 p.m. to 6:15 p.m. on three (3) specific Wednesday evenings. **It is your responsibility to insure that you have no scheduling conflicts. There are no provisions for taking exams at other times.** Exam room assignments will be announced by your instructor. Please be in your assigned exam room by 4:45 p.m. The exams this semester are as follows:

Exam I:	Wednesday, September 21	P.7, P.9, 1.1, 1.2, 1.3, 1.4, 1.5
Exam II:	Wednesday, October 19	1.6, 1.7, 1.8, 1.10, 2.2, 2.3, 2.6, 2.7
Exam III:	Wednesday, November 16	3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 4.8

Note: The sections covered on each exam are subject to change.

Students who have a **verified approved university excuse** to miss a regularly scheduled course examination will have that exam score replaced with the average of the percentage scores of all other exams and the final.

The **Final Exam** is cumulative (including all material covered beyond Exam 3) and will be scheduled during finals week: Friday, December 9 through Friday, December 16. Please do NOT make travel arrangements until you know when your final exam is scheduled. This information is made known to the entire UD community within a few weeks of the beginning of the semester.

Please take your student I.D., sharpened #2 pencils, an eraser and a functioning calculator to your exam room. **No electronic devices other than a calculator will be allowed on any exam. This includes phones, ipods, ipads, computers, and electronic translators. All of these items must be stowed away in a separate bag under your seat, not on your person. You will receive a grade of zero if you are found with any electronic devices (other than a calculator.)**

"Scheduling Conflicts"

As established by the Faculty Senate, the policy of the University of Delaware is:
"The Registrar's Office will insure that there are no conflicts among the common examinations scheduled and will announce the dates and times of the common examinations in the Registration Booklet" (which is now on the UD website).

"In the few instances where it may be necessary for a student to schedule a course in conflict with a common examination, the instructor of the single section course will treat the student's absence from class on that day as excused."

Academic Honesty: The following statement is from the Student Guide to University Policies.

"All students must be honest and forthright in their academic studies. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Any violation of this standard must be reported to the Office of Student Conduct."

Also included in the Student Guide is a statement about cheating. The policies in detail are at: **http://www.udel.edu/stuguide/11-12/code.html** .

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Resources

The textbook is an invaluable resource for this course. It contains several useful sub-sections within the assigned problems for each section. These include: Practice Exercises, Practice Plus, Application Exercises, Writing in Mathematics, Technology Exercises, and Critical Thinking Exercises. In addition, each section lists the section objectives and each chapter contains a mid-chapter check point, chapter overview of concepts, review problems and a chapter text. All of these textbook features should be useful learning resources throughout the course. Additional resources to keep up with the material and help you to succeed in the course are:

Instructor's office hours
Mathematics Department Tutorial Site
Online materials
Academic Enrichment Center

The Mathematics Tutorial Site, located in 106 Ewing Hall, is a tutorial and resource room for Math 115 and many other mathematics courses. Limited, but free, tutorial assistance is available there. No appointment is necessary. There are copies of the Instructor's Edition of the textbook, with answers to even numbered problems and also manuals with the solutions for all problems. You may use the materials by checking them out with your ID card.

Also available are some actual exams that were left over from previous semesters. You may take one to practice. You may also access and print copies of previous semester exams, with answers and solutions, from the Department of Mathematical Sciences website at:

http://www.math.udel.edu/placement/m115_info.html

Please note: Do not rely solely on previous semester exams for studying. In general, exams from previous semesters are valuable only when included as part of an overall studying strategy. **Topics included in a given exam will always vary from semester to semester.**

The Academic Enrichment Center, located at 148/150 South College (831-2805), provides lists of private tutors for hire. These tutors are not employed by the University.
Fees must be negotiated between the student and the tutor. Based on student interest, the Academic Enrichment Center will schedule group tutoring sessions for Math 115. These sessions are usually scheduled in the evenings. Please inquire if you're interested.

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Homework Assignments

The following pages contain the homework assignments for the course. Doing all the homework in a timely manner is the most important thing you can do to help yourself learn the course material and be successful on the exams.

Sec	Topic	Due	Textbook Problems to Be Done on CourseCompass	Additional Textbook Problems
P.7	Linear, Rational, Quadratic Equations	9/6	1, 3, 11, 13, 15, 17, 23, 25, 29, 31, 33, 35, 37, 39, 41, 55, 57, 59, 61, 65, 75, 79, 81, 83, 87, 95, 99, 101, 105, 107, 111, 113, 131	10, 16, 22, 26, 38, 163, 164, 165, 166
P.9	Linear Inequalities	9/11	3, 5, 11, 13, 17, 19, 27, 31, 37, 39, 41, 43, 45, 49, 55	44
1.1	Graphs and Graphing Utilities	9/11	29, 31, 33, 35, 37, 39, 41, 43, 45, 55, 57, 59	71, 72, 73, 74, 75, 76, 77, 78, 79, 80
1.2	Basics of Functions and Their Graphs	9/15	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 103, 105	10, 32, 64, 76, 90, 106, 118, 119, 120, 121, 122-126
1.3	More Functions and Graphs	9/18	1, 3, 5, 7, 9, 11, 13, 15, 33, 35, 37, 39, 41, 43, 45, 47, 49, 57, 59, 61, 63, 65, 67, 69, 71, 73, 83, 85, 87, 89, 91	114, 116, 117, 118
1.4	Linear Functions and Slope	9/20	3, 5, 7, 9, 13, 15, 17, 21, 23, 25, 27, 31, 35, 37, 45, 47, 49, 51, 53, 55, 61, 67, 73, 75, 77, 79, 81, 83, 89	105, 106, 107, 108, 109, 110, 111, 112
1.5	More on Slope	9/21	1, 3, 5, 7, 9, 11, 21, 23, 25, 27	none
1.6	Transformations of Functions	9/25	17, 19, 21, 23, 25, 27, 31, 45, 47, 51, 55, 57, 61, 67, 69, 71, 77, 83, 87, 97, 99, 123, 125	124, 126, 141, 142, 143, 144, 145, 146, 147, 149, 150, 151, 152
1.7	Combinations and Composite Functions	10/2	1, 3, 5, 7, 9, 11, 17, 19, 25, 27, 31, 39, 41, 43, 45, 49, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 89, 91, 93	112, 113, 114, 115,
1.8	Inverse Functions	10/6	1, 3, 5, 7, 9, 11, 15, 17, 19, 21, 23, 25, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63	30, 32, 34, 36, 38, 54, 56, 58, 60, 62, 64, 91, 92, 93, 94
1.10	Modeling with Functions	10/9	7, 9, 11, 13, 15, 17, 21, 23, 25, 27, 29, 31, 43, 45	18, 26, 30, 57, 59, 61
2.2	Quadratic Functions	10/13	1, 3, 5, 7, 9, 11, 13, 15, 17, 21, 23, 35, 37, 39, 41, 43, 45, 47, 57, 63, 65, 67, 69, 73, 75	94, 95, 96, 97, 99, 100, 101, 104

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Sec	Topic	Due	Textbook Problems to Be Done on CourseCompass	Additional Textbook Problems
2.3	Polynomial Functions	10/13	1, 5, 7, 9, 19, 21, 23, 25, 27, 29, 43, 53, 55, 59, 61, 63, 65,	11, 12, 13, 14, 15, 16, 17, 18, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 104, 105, 106, 107
2.6	Rational Functions	10/16	1, 3, 7, 21, 25, 27, 29, 31, 33, 37, 39, 41, 43, 45, 47, 49, 51, 55, 57, 59, 61, 67, 69	9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 120, 121, 122, 123
2.7	Inequalities	10/19	1, 5, 13, 17, 29, 31, 41, 43, 45, 47, 49, 51, 55, 57, 59	85–90, 98, 99, 100, 101
3.1	Exponential Functions	10/23	3, 7, 9, 15, 19, 21, 23, 25, 27, 29, 31, 35, 37, 47, 51, 53, 55, 57, 61, 63, 65, 73	66, 74, 81, 87, 88, 89, 90, 91
3.2	Logarithmic Functions	10/27	1, 5, 7, 9, 11, 13, 15, 17, 21, 27, 29, 37, 29, 43, 27, 47, 51, 53, 55, 65, 69, 73, 75, 81, 89, 93, 97, 101, 103, 105, 109, 111	139, 140, 141, 142, 143, 144
3.3	Properties of Logarithms	10/30	1, 3, 7, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 43, 47, 53, 57, 59, 63, 65, 67, 69, 71, 75, 79, 81, 83, 85, 87	89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 125, 126, 127, 128
3.4	Exponential and Logarithmic Equations	10/30	1, 7, 13, 17, 19, 21, 25, 27, 31, 33, 37, 39, 41, 43, 45, 47, 49, 51, 43, 55, 57, 59, 61, 65, 67, 69, 71, 73, 75, 77, 81, 83, 85, 87, 89, 91, 95, 97, 101, 105, 107, 109, 111, 115, 117	116, 123-129 odd, 140, 141, 142, 143
3.5	Exponential Growth, Decay	11/6	1, 3, 5, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 35, 37, 39, 41, 43, 45, 47, 49	79, 80, 81, 82
4.1	Angles and Radian Measure	11/6	7, 9, 15, 17, 19, 21, 25, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 93, 95	none
4.2	Trig Functions: The Unit Circle	11/10	1, 3, 5, 7, 11, 13, 19, 21, 23, 25, 27, 29, 31, 33, 35, 39, 41, 43, 45, 53, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79	none
4.3	Right Triangle Trigonometry	11/13	1, 3, 9, 13, 15, 19, 23, 27, 29, 31, 33, 37, 39, 43, 45, 47, 51, 53, 55, 57, 59	74, 75, 76, 77
4.8	Right Triangle Applications	11/16	1, 3, 9, 11, 29, 31, 33, 35, 41, 43, 45, 49	46, 50, 75, 76, 77

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Sec	Topic	Due	Textbook Problems to Be Done on CourseCompass	Additional Textbook Problems
4.4	Trigonometric Functions of Any Angle	11/28	1, 7, 9, 11, 13, 15, 17, 21, 23, 25, 29, 33, 35, 41, 45, 59, 51, 53, 55, 57, 59, 61, 65, 67, 69, 71, 73, 77, 79, 81, 83, 85, 87, 89, 91, 99, 101, 103	20, 28, 62, 64, 70
4.5	Graphs of Sine and Cosine	12/1	1, 3, 9, 17, 21, 23, 33, 35, 37, 39, 43, 45, 47, 49, 53, 61, 53, 65	62, 64, 66
5.1	Trigonometric Identities	12/4	1, 3, 7, 11, 15, 21, 23, 27, 29, 31, 35, 45, 51, 53, 57, 59, 67, 59, 71	78
5.2	Sum, Difference Formulas	12/4	1, 3, 5, 7, 9, 11, 15, 17, 25, 29, 33, 39, 41, 57, 59, 61	none
5.3	Double Angle Formulas	12/4	1, 5, 7, 9, 11, 15, 17, 25, 27	none
5.5	Trigonometric Equations	12/7	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27	26, 28

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