

**Humboldt State University
Mathematics Department
Math 115: Algebra and Elementary Functions**

Fall Semester, 2016

Instructor:	Dr. Peter Goetz
Office Location:	BSS 358
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Office Hours:	Monday: 11:00 - 12:00 Tuesday: 2:00 - 3:00 Wednesday: 9:00 - 10:00 Thursday: 11:00 - 12:00 Friday: 9:00 - 10:00
Class Days/Time:	MWF from 3:00 - 3:50 PM; Th from 2:00 – 2:50 PM or 3:00 – 3:50 PM
Classroom:	MWF in FH 125; Th in HGH 225 or BSS 302
Prerequisites:	Math 42 or Math 44 or equivalent

Course Description

In-depth treatment of polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. We will cover most of Chapters 1-7 of the textbook. The format of the course is lecture-discussion.

Course Goals and Student Learning Outcomes

Course learning outcomes:

- 1) Improve algebraic and mathematical thinking skills.
- 2) Apply methods of analytic geometry and trigonometry to problem solving.
- 3) Apply algebraic skills and calculator or computer software to problem solving.
- 4) Apply various functions and their graphs to problem solving.
- 5) Organize and express ideas clearly and convincingly in oral and written forms.

Program learning outcomes:

- 1) Reason mathematically and statistically.
- 2) Solve complex problems using mathematics and statistics.
- 3) Communicate mathematical and statistical ideas.
- 4) Demonstrate mathematical knowledge commensurate with national norms.

HSU learning outcomes:

HSU graduates will have demonstrated:

- 1) Effective communication through written and oral modes.
- 2) Competence in a major area of study.

Required Texts/Course Website

Textbook:

Precalculus: Building Concepts and Connections, Second Edition, R. Narasimhan

ISBN-13: 9781577664451

Course Website:

Course announcements and links to course handouts, homework assignments, solutions to exams and other material will be posted at

<http://users.humboldt.edu/pgoetz/math115.html>

Course Expectations

I expect you to participate in the course by attending all of the lectures, to arrive to class on time and prepared to learn, and to turn in all homework assignments by the due date. I expect you to read the required section in the textbook before each lecture. I expect you to be polite and respectful of your fellow class members and myself. Please refrain from cell phone use in class except for emergencies and have your phone on silent during class. In general, it is expected that students spend at least two hours studying outside of class for each class meeting. Plan on spending at least 8 hours per week studying Precalculus. (If you really want to excel in the course, you might need to study 12 or more hours per week.)

You may expect that I: come to class prepared to teach, give clear lectures, assign homework problems that are relevant to the course, and prepare exam questions that accurately measure your progress in the course. Additionally, I am available outside of class for consultation in office hours. I hope to share with you my passion for mathematics!

Assignments and Grading Policy

Homework:

There will be one homework assignment per week. Homework will be done using the online system available at www.xyzhomework.com. Each assignment will be due at 11:59 PM on Sunday evening. The assignment will cover the lecture material for the previous week. I highly suggest working on the homework throughout the week as the sections are covered in lecture. Starting the assignment at 11:00 PM on Sunday night is more than likely a “bad idea”.

For instructions on how to get started see:

http://www.xyzhomework.com/media/xyzhomework_getting_started_guide_student.pdf

In order to enroll in the system, you'll need to set up an account, and once you've done that, you should enroll in the course; the Course ID is 8894.

I encourage you to work together and to discuss the homework with your classmates, but you must turn in your own work. Plagiarizing work from the internet, or copying from anyone will absolutely not be tolerated. If you are caught, or if I suspect that you have copied work that is not your own, you will be given no points on the assignment, and it will be necessary that you meet with me in my office. For more detailed steps that will be taken, please read:

<http://www2.humboldt.edu/studentrights/academic-honesty>

Absolutely no late homework will be accepted.

Homework is worth 20% of your overall course grade.

Quizzes:

There will be a short quiz given during the last 20 minutes of the Thursday lecture, excepting the weeks of the exams and the last week of the course. Quiz problems will be similar to homework problems. I will announce the sections to study for the quiz in lecture.

Quizzes are worth 20% of your overall course grade.

Exams:

We will have two inter-semester exams. The dates for these exams are given below. Mark your calendars and plan according as **no makeup** exams will be given.

Exam I: Friday, September 23, 2016

Exam II: Friday, October 28, 2016

Each Exam is worth 20% of your overall course grade.

Final Exam:

The final exam will not be cumulative.

Day-Date-Time-Place: Friday; December 16, 2016; 3:00 – 4:50 PM; FH 125

The Final Exam is worth 20% of your overall course grade.

Grading Components:

Homework	20%
Quizzes	20%
Exam I	20%
Exam II	20%
Final Exam	20%

Grading Scale:

All numbers listed below are in percentages. I will round your overall weighted course percentage to the nearest whole percent. Participation in class may work in your favor for borderline cases.

A: 92-100; A-: 90-91; B+: 88-89; B: 82-87; B-: 80-81; C+: 78-79; C: 68-77; C-: 64-67;
D: 55-63;

F: 0-54

Weekly Schedule

During class time we will have a mix of lecture and discussion. On the weekly schedule below, you will see a column titled “Reading”. Those are the sections in our textbook I will expect you to have read in preparation for that week’s lecture. Reading the sections **before** lectures will enable you to gain more information from the lectures.

Week	Sections/Topics	Reading	Assignments
1 (8/22-8/26)	1.5-1.8 Equations and Inequalities	1.5-1.8	Quiz 1 (1.5-1.6) Homework 1
2 (8/29-9/2)	2.1-2.3 Coordinate Geometry and Functions	2.1-2.3	Quiz 2 (1.7-1.8) Homework 2
3 (9/5-9/9)	2.4-2.5 Graphs of Functions	2.4-2.5	Quiz 3 (2.1-2.3) Homework 3
4 (9/12-9/16)	2.6-2.8	2.6-2.8	Quiz 4 (2.4-2.5)

	Graph Transformations and Linear Functions		Homework 4
5 (9/19-9/23)	3.1-3.2 Polynomial Functions and Graphs	3.1-3.2	Exam I (1.5-1.8, 2.1-2.8) Homework 5
6 (9/26-9/30)	3.3-3.5 Algebra of Polynomials	3.3-3.5	Quiz 5 (3.1-3.2) Homework 6
7 (10/3-10/7)	3.6-3.8 FTA and Rational Functions	3.6-3.8	Quiz 6 (3.3-3.5) Homework 7
8 (10/10-10/14)	4.1-4.3 Inverse, Exponential and Logarithmic Functions	4.1-4.3	Quiz 7 (3.6-3.8) Homework 8
9 (10/17-10/21)	4.4-4.6 Properties of Logarithms, Exponential and Logarithmic Equations and Models	4.4-4.6	Quiz 8 (4.1-4.3) Homework 9
10 (10/24-10/28)	5.1-5.2 Angles and Trigonometric Functions	5.1-5.2	Exam II (3.1-3.8, 4.1-4.6) Homework 10
11 (10/31-11/4)	5.3-5.5 Right Triangle Trigonometry and Graphs of Sine and Cosine	5.3-5.5	Quiz 9 (5.1-5.2) Homework 11
12 (11/7-11/11)	5.6-5.7 Graphs of Trigonometric Functions and Inverse Trigonometric Functions	5.6-5.7	Quiz 10 (5.3-5.5) Homework 12
13 (11/14-11/18)	6.1-6.2 Trigonometric Identities	6.1-6.2	Quiz 11 (5.6-5.7) Homework 13
14 (11/28-12/2)	6.3-6.4 More Identities and Trigonometric	6.3-6.4	Quiz 12 (6.1-6.2) Homework 14

	Equations		
15(12/5-12/9)	7.1-7.3 Law of Sines and Cosines and Polar Coordinates	7.1-7.3	Homework 15
16(12/16) Finals Week			Final Exam (5.1-5.7, 6.1-6.4, 7.1-7.3) Friday, December 16, 2016 3:00 – 4:50 PM

Additional Resources:

Supplemental Instruction:

There is a weekly Supplemental Instruction (SI) meeting attached to this course. This is a semester long class that will review the content covered in lecture in an active and collaborative manner. It will also reinforce good study habits. It meets

MW 4:00 pm – 4:50 pm BSS 308

Enrollment is on a first come – first serve basis. There is limited seating, so be sure and come to the first meeting on **Monday, August 22, 2016**. At the end of the third week, students will sign a semester contract. Research shows that students that participate in SI courses earn close to a letter grade higher than those who do not.

Math Tutoring Lab:

The Math Tutoring Lab is located on the 1st floor of the Library (near the Help Desk). Here you can get help on homework from qualified tutors. See:

<http://www2.humboldt.edu/learning/math-tutoring-lab>

for more information and a detailed schedule.

University Policies

The following link provides HSU policies on: academic honesty, attendance and disruptive behavior, complaints against faculty, staff, or administrators, student code of conduct, and animals in classrooms or laboratories. It also has procedures for dropping or adding a class, **please note that September 5, 2016 is the deadline to Add or Drop courses without a serious and compelling reason for the Fall 2016 semester**, and campus emergencies. Finally there is information regarding counseling and psychological services, the student disabilities resource center, financial aid, and academic and career advising.

<http://www2.humboldt.edu/academicprograms/syllabus-addendum-capus-resources-policies>