# CASPER COLLEGE COURSE SYLLABUS

**Course**: MATH 1400-03: Pre-Calculus Algebra **Semester:** Fall 2015

**Lecture Hours**: 4 **Credits:** 4

**Instructor:** Kendall Jacobs **Office:** PS 338

**Class Time:** MW 7pm-8:50pm **Room:** PS 117

**Phone**: 268-2043 **Email:** kjacobs@caspercollege.edu

**Office Hours:**
TTH 8:00-8:50 TTH11:00-11:50 MWF 1:00-1:50 W 6:30-7:00 in PS 117
**If the above times don't work for you, please feel free to make an appointment- or just drop by!**

**Course Description**: Math 1400 Pre-Calculus Algebra (4L,4CR)
Elementary functions and graphing for mathematics, science, business, and engineering majors preparing for the regular calculus sequence. Includes exponential and logarithmic functions. (From the Casper College Catalog).

**Prerequisites:** A grade of "C" or better in MATH 0930, MATH 0934, an ACT math score of 23 or better or appropriate COMPASS exam score (Algebra 66 -100 or College Algebra 0 – 64) or other appropriate placement test score within the past year

**Goal:** The primary goal of this course is to teach students to think logically and critically. The course will also provide students with mathematical tools they can use to solve problems associated with their field of study and to prepare them for further studies in trigonometry and calculus.

**Course Outcomes:** Students who successfully complete this course will:
- Be able to use function concepts including; evaluating, operations, composition, inverses, and transformations.
- Be able to solve polynomial, exponential, and logarithmic equations and relate and interpret these solutions.
- Be able to graph linear, polynomial, exponential, logarithmic, absolute value, square root, piecewise defined, and rational functions.
- Be able to model and interpret real-world problems using polynomial equations or regressions.
- Be able to solve systems of equations.
- Be prepared to take Math 1405, Math 2350, Stat 2050 or Stat 2070 within the next academic year.

**Course Objectives correlating to CC learning outcomes**
1. Solve problems using critical thinking and creativity
2. Use appropriate technology and information to conduct research
3. Use quantitative analytical skills to evaluate and process numerical data

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

**Materials Needed for the Course:**

BOOK**:** *Precalculus with Modeling and Visualiztion* by Rockswold, 5th Edition - Pearson

MY MATH LAB: My Math Lab is NOT required for this course. However, if there is an interest, I will set up a class in My Math Lab for those who would like to use the My Math Lab Learning Tools. Most of the daily assignments will be done via WebWork

CALCULATOR: A graphing/programmable calculator would be required for this course. Calculators that perform symbolic calculations are advantageous. I recommend a TI 83 or TI 84. If you have any questions about your calculator, please do not hesitate to ask. I may disallow the use of some calculators on portions of the exams.

PROGRAMS: We will also be doing some work with spreadsheets(like Excel) and Mathematica/Sage. You will also need to be able to submit assignments in drop-boxes via Moodle. You are also expected to have access to a computer with updated browsers and applications.

**Methodology:** Class will be a combination of lecture, group work, and explorations. Besides being proficient with the algebra, students should also make connections and understand why algebra is important. You will be expected to OWN everything taught in class (whether or not you are present). I recommend that you study with the intent to understand and not just to get by on the test. Besides contributing to lectures and class discussions, you will be asked to participate in group activities and several in-class and out of class investigations. You will be strongly encouraged to participate in class. I hope you ask LOTS of questions.

**Evaluation Criteria:** Your letter grade will be based on your performance on the following:

**Proctored Exams (approx. 70%):** You are **required** to take all exams and the final exam at the scheduled hours. If you miss an exam, you MUST contact the instructor ASAP - In the event an exam is unavoidably missed, the instructor may approve a 200 point final depending on the reason for the missed exam.

**Homework /Quizzes/ Projects (30%)** Proficiency in mathematics requires practice! You will be required to complete 5-10 Webwork problems daily. There will also be additional paper and pencil assignments – some of which will require the use of technology. Students can expect 1-2 short quizzes each week. There will also be several graded in-class activities. You are EXPECTED to be in class ON TIME every day. In general, missed quizzes or in-class assignments cannot be made up. However, I will give you a few opportunities to "replace" a few low scores towards the end of the semester.

**Grading Scale:** You are guaranteed a traditional grading scale of 90% + A, 80-89% B, 70-79% C, 60-69% D, 59%-F. But I reserve the right to lower this without notice if I deem it necessary.

**Student Rights and Responsibilities:**

Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu . The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**Course Content:** See attached schedule:

**Last Day to Change to Audit or Withdraw:** Nov 12, 2015 will be the LAST day to drop this class. If you are thinking about changing your course status, please see me BEFORE this date.

**Help:** I recommend you keep up with the class. If you need help, then get it . . . FAST! I will be available to help individuals during my office hours or by appointment. PLEASE don't hesitate to stop by or give me a call. I want you to succeed! The Math Lab (PS 104) is also a great place to go for assistance.

## IF YOU ARE HAVING TROUBLE IN THIS CLASS, PLEASE SEE ME AS SOON AS POSSIBLE!!!

# Let's have a GREAT semester!

# TENTATIVE SCHEDULE WITH COURSE CONTENT

**Course:** Math 1400-03 Pre-Calculus Algebra **Semester:** Fall 2015

| WEEK | TOPICS |
|---|---|
| WEEK ONE<br>Aug 24-28 | Course Introduction<br>Sections 1.1-1.4<br>Numbers – Data – Problem Solving – Distance Formula<br>Functions and Rate of Change |
| WEEK TWO<br>Aug 31-Sept 4 | Sections 2.1-2.4<br>Equations of Lines – Modeling with Functions |
| WEEK THREE<br>Sept 7 – Sept 11 | Sections 2.5 -3.1<br>Absolute Value and Inequalities – Intro to Quadratics<br>**Sept 7 Labor Day – No Class** |
| WEEK FOUR<br>Sept 14-Sept 18 | Sections 3.2-3.4<br>Quadratic Models and Problem Solving- Complex Numbers |
| WEEK FIVE<br>Sept 21-Sept 25 | Sections 3.4-3.5<br>Quadratic Inequalities- Transformations of Graphs<br>**Exam I** |
| WEEK SIX<br>Sept 28-Oct 1 | Sections 4.1-4.2<br>More Nonlinear Functions- Polynomial Functions/Models |
| WEEK SEVEN<br>Oct 5 – Oct 9 | Sections 4.3-4.4<br>Polynomial Division<br>Real Zeros of Polynomials |
| WEEK EIGHT<br>Oct 12-Oct 16 | Sections 4.5 -4.8<br>Fundamental Thm of Algebra<br>Rational Functions – Variation – Power Functions |
| WEEK NINE<br>Oct 19-Oct 23 | Sections 4.6 -4.8<br>Rational Functions – Variation<br>Inequalities Radical and Power Functions |
| WEEK TEN<br>Oct 26-Oct 30 | 5.1-5.2<br>Composition of Functions and Inverse Functions<br>**Exam II** |
| WEEK ELEVEN<br>Nov 2-Nov 6 | Sections 5.3-5.5<br>Exponential and Logarithmic Models<br>**Nov 6 – Advising Day** |
| WEEK TWELVE<br>Nov 9 – Nov 13 | Sections 5.6-5.7<br>Properties of Logarithms – Exponential and Logarithmic Equations<br>**Nov 12- Withdrawal Deadline** |
| WEEK THIRTEEN<br>Nov 16-Nov 20 | Sections 5.6-5.7<br>Properties of Logarithms – Exponential and Logarithmic Equations |
| WEEK FOURTEEN<br>Nov 23-Nov 26 | Sections 9.1-9.4 Systems of Equations<br><br>**Nov 25 – 27 Thanksgiving Holiday – No Class** |
| WEEK FIFTEEN<br>Nov 30-Dec 4 | Sections 9.5-9.7<br>Using Matrices to Solve Systems of Equations |
| WEEK SIXTEEN<br>Dec 7 – Dec 10 | Additional Topics as time Allows – Course Review |
| Dec 14-Dec 18 | **Finals Week: Final Exam TBA** |