**Course Syllabus: MATH 4B – Precalculus**

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| **MATH 4B-51185 RC Hybrid** | **Reedley College** |
| **Instructor:** Mr. Steven Zook  | **Spring 2016** |
| **Email:** steven.zook@reedleycollege.edu  | **Office Hours:** M 11:00 am – 12:00 pm |
| **Phone:** (559) 638-3641 ext. 3279 | T 11:00 am – 12:00 pm |
| **Office:** FEM 4A | Th 9:00 am – 10:00 am |

**Meeting Room:** Web/CCI 201

**Meeting Days:** Introduction: 1/13/16, Exam 1: 2/3/16, Exam 2: 3/9/16, Exam 3: 4/13/16, Final Exam: 5/18/16

**Meeting Time:** 6:00 pm – 8:00 pm

**Course Description:** The course is an analytic and comprehensive study of algebra, geometry and trigonometry designed to prepare students for calculus. Topics include conic sections, inequalities, systems of equations, polynomial, trigonometric, rational, exponential and logarithmic functions and their graphs.

**Course Prerequisites:** MATH 4A or equivalent

**Course Advisories:** Eligibility for English 125 and 126

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| **Student Learning Outcomes:** |
| *Upon completion of this course, students will be able to:*  |
| 1. Produce and interpret graphs of various functions and relations.
2. Apply techniques to solve various types of equations, systems of equations, and inequalities.
3. Use the topics of the course to model real-world situations.
4. Apply techniques to simplify, and manipulate various expressions using the skills obtained in the course.
5. Prove and derive mathematical statements using various methods.
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| **Objectives:***In the process of completing this course, students will:*  |
| 1. Graph and identify the domain and range of conic sections and the following types of functions and their transformations; polynomials, absolute value, rational, exponential, logarithmic and trigonometric.
2. Solve the following types of equations; polynomial, rational, absolute value, trigonometric, logarithmic and exponential.
3. Identify the solution set for inequalities with absolute value, polynomials and rational expressions.
4. Set-up and solve mathematical modeling problems including; interest problems, exponential growth and decay, and motion problems.
5. Learn the analytic aspects of trigonometric functions of right, acute and related angles.
6. Derive basic trigonometric identities and use them to simplify trigonometric expressions and solve trigonometric equations.
7. Apply the unit circle to trigonometry and perform angle conversions.
8. Memorize the trigonometric values of the fundamental angles.
9. Apply the analytic aspects of inverse trigonometric functions and trigonometric formulas to simplify and solve trigonometric problems.
10. Find the inverse of one-to-one functions, and graph the function and its inverse.
11. Convert between polar and rectangular coordinates, as well graph functions and relations in polar coordinates.
12. Solve systems of equations and inequalities. (If time permits)
13. Use partial fraction decomposition to prepare an expression for integration. (If time permits)
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**Required Text:** **Blitzer, Robert, Precalculus, 5th Edition, 2013**. **ISBN: 0-321-83734-7**

This text is required for reading; however, you do not have to purchase a hard copy of the text since it is available online as an eText, included with the required MyMathLab subscription.

**Required Course Material MyMathLab**: You will be required to obtain access to MyMathLab. To access the course, use the **Course ID: zook37106**

You will need to first create an account here: [www.pearsonmylabandmastering.com](http://www.pearsonmylabandmastering.com)

When creating an account, **use your full first and last name as your name appears in official school records**, using usual capitalization rules.

**WARNING: Any students who do not gain *full paid* access to MyMathLab by 1/20/16 may be automatically dropped from the course.**

**Office Hours:** I will be holding regular office hours. I want to be available to you if you need assistance outside of class. Please visit me during the scheduled times for drop-in questions. You may come unannounced during those times. If the scheduled office hours do not suit your schedule, you may arrange a time to meet me in my office. Please don’t hesitate to take advantage of these since I want you to succeed – it’s what I am here for.

**Attendance:** In a traditional face-to-face class you would be expected to attend every class meeting. In an online course, things work differently but the principle is the same. Each week you will be expected to respond to a set of questions in a discussion forum. This will act as a chance to demonstrate class participation and interact with the other students in the class. **Four (4) missed discussions** may result in a drop from the course. If you decide to drop, it is your responsibility to drop the class officially through the Administration and Records office. In failing to do so, you run the risk of receiving a **grade of F**.

**Drop Deadline:** Friday, March 11th

**Assignments & Exams:**

All **online homework** assignments will be completed online at **MyMathLab**. Homework assignments will be due on the due date by **11:59pm** and will cover topics outlined in the course calendar. If you submit your homework late, there is a **10% penalty for each day** that the assignment is late.

There will be weekly **quizzes** that will be completed in **MyMathLab**. These will be available on the date they need to be completed and you will be given a time limit in which to complete the quiz.

Throughout the course there will regularly be **discussion questions** covering material related to the topic for the week. Participation in the weekly discussions is a requirement for this course. I will post a variety of topics for discussion on the BlackBoard page and there are two types of required responses:

1. You are required to respond to an initial discussion question with a substantive response by midnight Sunday each week. (2 points)
2. You are required to respond to two (2) classmates’ responses on at least two *different*days of the week. Multiple responses made on the same day will count as a single response. (each 1 point)

The above requirements will ensure that you participate on at least three (3) different days of each week. A response that is substantive is a response that provides all the needed steps to solve a given problem and uses complete English sentences where necessary. A response that is not appropriate, does not pertain to the topic, or is not substantive will receive no credit. There are a total of 60 available points for the discussion (4 points for each of the 15 discussions).

There will be **three class assignments** this semester that will require work and intellectual investment beyond the minimum. The projects will be aligned with the content we are working through in class at the time they are assigned. Details on these assignments will be available on BlackBoard. Each class assignment will be given **one week** before it is due. They will require the full week to complete and no late assignments will be accepted unless an extension is granted in advance on a case-by-case basis.

There will be **three exams** (not including the final exam) during the semester and the dates they will be held are in the course calendar and they will cover the specified content. There will be no make-up exams allowed although it will be possible to schedule a time to take an exam early if it is prearranged.

The **comprehensive final exam** will be held during finals week on **Wednesday, May 18th, 6:00 pm – 8:00 pm**. If it is to your benefit, the cumulative final exam score will replace your lowest exam score.

**Assignment Categories and Weighting**

| ***Assignment*** | ***Weighting*** |
| --- | --- |
| Online Homework | 10% |
| Quizzes (10 @ 1% each) | 10% |
| Weekly Discussion Board | 5% |
| Class Assignments (3 @ 5% each) | 15% |
| Exams (3 @ 15% each) | 45% |
| Final Exam (cumulative) | 15% |

**Final Grades**

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| --- | --- |
| ***Letter Grade*** | ***Percent*** |
| A | 90-100 |
| B | 80-89 |
| C | 70-79 |
| D | 60-69 |
| F | 0-59 |

**SPECIAL NEEDS REQUESTS:** If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Please refer to the RC Catalog for the Policies on Academic Dishonesty, Cheating, and Plagiarism, pg. 44.**

**Course Outline and Schedule**

Week 1: **Course Introduction**: Wednesday, Jan. 13th, CCI 201

Begin Chapter 1: Functions

**Homework 1** due on Friday, Jan. 15th

 **Discussion 1** completed before Sunday, Jan. 17th

Week 2: **Homework 2** due on Tuesday, Jan. 19th

 Begin Chapter 2: Polynomial and Rational Functions

**Quiz 1:** Wednesday, Jan 20th

**Homework 3** due on Friday, Jan. 22nd

 **Discussion 2** completed before Sunday, Jan. 24th

Week 3: **Homework 4** due on Tuesday, Jan. 26th

 **Quiz 2:** Wednesday, Jan 27th

**Homework 5** due on Friday, Jan. 29th

 **Discussion 3** completed before Sunday, Jan. 31st

Week 4: **Homework 6** due on Tuesday, Feb. 2nd

 **Exam 1 (Chapters 1, 2):** Wednesday, Feb. 3rd, CCI 201

**Discussion 4** completed before Sunday, Feb. 14th

Week 5: Continue Chapter 2: Polynomial and Rational Functions

**Homework 7** due on Tuesday, Feb. 9th

**Class Assignment 1** due on Friday, Feb. 12th

 **Discussion 5** completed before Sunday, Feb. 14th

Week 6: Begin Chapter 3: Exponential and Logarithmic Functions

**Homework 8** due on Tuesday, Feb. 16th

 **Quiz 3:** Wednesday, Feb 17th

**Homework 9** due on Friday, Feb. 19th

 **Discussion 6** completed before Sunday, Feb. 21st

Week 7: **Homework 10** due on Tuesday, Feb. 23rd

 **Quiz 4:** Wednesday, Feb 24th

**Homework 11** due on Friday, Feb. 26th

 **Discussion 7** completed before Sunday, Feb. 28th

Week 8: **Homework 12** due on Tuesday, Mar. 1st

 **Quiz 5:** Wednesday, Mar. 2nd

**Class Assignment 2** due on Friday, Mar. 4th

 **Discussion 8** completed before Sunday, Mar. 6th

Week 9: **Homework 13** due on Tuesday, Mar. 8th

 **Exam 2 (Chapters 2, 3):** Wednesday, Mar. 9th, CCI 201

 Last day to drop a full-term class Friday, Mar. 13th

Week 10: Begin Chapter 4: Trigonometric Functions

**Homework 14** due on Tuesday, Mar. 15th

**Homework 15** due on Friday, Mar. 18th

 **Discussion 9** completed before Sunday, Mar. 20th

Week 11: **Quiz 6:** Wednesday, Mar. 30th

**Homework 16** due on Friday, Apr. 1st

 **Discussion 10** completed before Sunday, Apr. 3rd

Week 12: **Homework 17** due on Tuesday, Apr. 5th

 **Quiz 7:** Wednesday, Apr. 6th

**Homework 18** due on Friday, Apr. 8th

 **Discussion 11** completed before Sunday, Apr. 10th

Week 13: **Homework 19** due on Tuesday, Apr. 12th

 **Exam 3 (Chapter 4):** Wednesday, Apr. 13th, CCI 201

Week 14: Begin Chapter 5: Analytic Trigonometry

**Homework 20** due on Tuesday, Apr. 19th

**Class Assignment 3** due on Friday, Apr. 22nd

 **Discussion 12** completed before Sunday, Apr. 24th

Week 15: **Homework 21** due on Tuesday, Apr. 26th

**Quiz 8:** Wednesday, Apr. 27th

**Homework 22** due on Friday, Apr. 29th

 **Discussion 13** completed before Sunday, May 1st

Week 16: Begin Chapter 6: Additional Topics in Trigonometry

**Homework 23** due on Tuesday, May 3rd

**Quiz 9:** Wednesday, May 4th

**Homework 24** due on Friday, May 6th

**Discussion 14** completed before Sunday, May 8th

Week 17:Begin Chapter 9: Conic Sections

**Homework 25** due on Tuesday, May 10th

 **Quiz 10:** Wednesday, May 11th

**Discussion 15** completed before Sunday, May 15th

Week 18: **Finals Week**

**Comprehensive FINAL EXAM on Wednesday, May 18th from 6:00 –8:00 pm, CCI 201**