MAT 180 Spring 2009
Precalculus A,D

Instructor: Dr. Michael Arciero
E-mail: marciero@une.edu
Office: Decary 302 ph: 207-602-2439
Office hours: Tues 12:30-3:30
       Fri 11:30-12:30

Meets: Section A: MWF 9:00-9:50  Featherman 120
       Section D: MWF 10:00-10:50  Featherman 120


Description: This course focuses on the study of functions. It provides a preparation foundation for the study of calculus, and also serves as a foundation for future studies in the physical and biological sciences. The goal is to help students understand functional relationships, especially as they may be used to model data related to processes in the physical and biological sciences. Topics include graphing and the analysis, interpretation, and application of polynomial, rational, exponential, logarithmic, and trigonometric functions. Study will focus on understanding concepts graphical, numerical, and algebraic perspectives and on understanding the connections between these perspectives. We will cover Chapters 2-6 of the text.

Learning Goals

Upon completion of this course, students should be able to:
1. Understand functions in the various forms listed above.
2. Understand the concepts of domain and range of functions, one-to-one and many-to-one functions, and inverses.
3. Interpret and perform operations with function notation.
4. Manipulate functions using operations such as addition, multiplication, and composition.
5. Classify and identify properties of polynomial, rational, exponential, logarithmic, and trigonometric families of functions by their graphs, and sketch graphs of these different functions by looking only at their properties.
6. Use functions as a tool for modeling real-world relationships and solve related problems.

Technology: You are required to have a graphing calculator for this course. The TI 84 is strongly recommend. Instruction will be provided for this model. This edit is the latest version of the TI 82, 83 family. These older versions are acceptable as well.

Homework policies: A total of five homeworks will be assigned, collected, and graded. Additional homework will be assigned but not collected. You will be responsible for the material on all the homework, whether it is collected or not. The homework that is collected must be done neatly, in pencil, on one side of 8.5" x 11" lined loose leaf paper, (not torn from a notebook!) using a single-column format. Multiple sheets should be bound together with paper clip or stapled, and not torn and/or folded at the corner. Grade deductions will apply to homework that does not adhere to these guidelines. A grade deduction of 5% per day will be
applied to late homework. Homework will be graded on quality of exposition of solutions as well as correctness of final results. In other words, homework should be neat, well-organized and clearly written in detail using proper mathematical notation and English grammar. You should work problems in advance on scratch paper. Students may consult one another but are expected to hand in their own original work.

**Study advice:** My advice is to schedule some time each day to read, study, and work on problems, rather than let it pile up on the weekend, for example. This is a good approach with any math course. You will find it hard to follow in class if you get behind, since new material builds on the previous.

**Additional Help:** If you find you are having difficulty with the course, do not hesitate to see me during office hours or by appointment. I only ask that you make an attempt at the problems before seeing me for help, as you will actually benefit from a failed attempt upon subsequently seeing the solution. Thus, failed attempts are not a waste of time. Another source of additional help is Learning Assistance Services, where tutoring is available daily with no appointment necessary. Don't wait until exam week to get extra help!

**Quizzes:** Six quizzes will be given; roughly every other week. The lowest quiz grade will be dropped. Make-up quizzes will be given only in the event of documented unavoidable absence.

**Attendance:** You are expected to attend all classes and to arrive on time with appropriate course materials, including text, notebook/portfolio, and calculator. In the event of an unavoidable absence, you are responsible for informing me and for keeping abreast of any missed material and assignments.

**Tests:** There will be two in-class exams as well as a cumulative final exam.

**Exam Dates:**  
Test 1: Wednesday, 14 October  
Test 2: Wednesday, 2 December

**Grading:**
- **Quizzes** 50 pts
- **Homework** 50 pts
- **Hour Tests** 100 pts (50 pts ea.)
- **Final** 50 pts

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<tr>
<th>Grade</th>
<th>Points</th>
<th>Percentage</th>
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<tr>
<td>A</td>
<td>233-250</td>
<td>93.2-100</td>
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<tr>
<td>A-</td>
<td>225-232</td>
<td>90.0-92.8</td>
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<td>B+</td>
<td>216-224</td>
<td>86.4-89.6</td>
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<td>B</td>
<td>207-215</td>
<td>82.8-86.0</td>
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<tr>
<td>B-</td>
<td>199-206</td>
<td>79.6-82.4</td>
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<td>C+</td>
<td>191-198</td>
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<td>D</td>
<td>150-174</td>
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**Students with disabilities:** Any student with a disability that requires some form of accommodation must see me within the first two weeks of class. Such discussions will remain confidential. It is required that such students be registered with the Office for Student Disabilities before any accommodation will be made.