STRAYER UNIVERSITY
Precalculus -- MAT 200
Winter 2006
Course Syllabus
Prerequisite: Math 105

Quarter: Winter 2006
Day(s) & time course meets: Tuesdays, 6:15–10:00 PM
Location: Manassas Campus, Rm. 118
Instructor phone number: 703-798-3622 (mobile)
Instructor email address: thubsch@strayer.edu, thubsch@mac.com
Instructor office hours, office location: by appointment and e-mail
Academic office phone number: 703-330-8474 (voice), 703-330-8417 (fax)

I.   COURSE DESCRIPTION

Mathematics 200 is a Precalculus course with applications to business, life and social sciences. The course will review algebraic functions and techniques, explore analytic geometry, introduce exponential and logarithmic functions, include matrices and determinants as techniques for solving linear systems in three or more variables and emphasize real-life problems and applications. This course will prepare the student for MAT 310, Calculus I.

II.   EXPECTED LEARNING OUTCOMES

Upon the successful completion of this course, the student will be able to:
*   Solve problems involving linear equations, linear inequalities, and systems of linear equations
*   Solve and graph linear, quadratic, exponential and logarithmic functions
*   Use matrices and determinants to solve systems of linear equations in two and three variables
*   Evaluate trigonometric and inverse trigonometric functions
*   Graph and operate on conic sections
*   Develop problem-solving skills by applying mathematical concepts to real world problems and applications

The course instructor may provide additional learning outcomes.

III.   INSTRUCTIONAL MATERIALS

Edited by Saltzer, Brian. Precalculus. Special customized edition, Pearson Custom Publishing, 2006.

A Scientific Calculator is required.

MyMathLab is optional, but strongly recommended (read next page).

IV.   INSTRUCTIONAL STRATEGIES

The course instructor will start the class by providing the solutions to the homework

problems assigned at the previous session. The instructor shall then give a detailed discussion of a new mathematical topic, along with solved examples and real-life applications. Based on the pace of instruction, problem-solving, cooperative and individual learning sessions will be incorporated in the learning process in this class.

V. TECHNOLOGY INTEGRATION: MyMathLab

MyMathLab is an online textbook-based diagnostic evaluation and tutorial program recommended to students in this class. It is a PC-based optional and supplemental tool that may be used to facilitate and assess learning and enhance instructional effectiveness in mathematics classes. This technology tool supports active and reinforces the use of mathematics content through the process of active computer-based instruction and criterion-based testing in the classroom or online. MyMathLab sets the attainment math learning objectives and skills, determine the appropriate reinforcers, select procedures for changing levels of student math skills, record results and evaluate progress and revise as necessary.

Specifically, MyMathLab includes the class textbook, a variety of multimedia instructional resources, unlimited practice exercises, self-paced learning modules, online homework and testing, and an individual study plan – all correlated to the examples and exercises in your textbook

MyMathLab is supported and maintained by the publisher's web server and the required plug-ins for this tool are standard. MyMathLab is delivered inside a web-based course delivery system called **CourseCompass**. Before accessing MyMathLab, you need to register in CourseCompass using student access code and the MyMathLab Course ID provided by your instructor.

- To find the detailed system requirement, go to www.mymathlab.com/system.html
- To register or log into MyMathLab, go to http://student.pearsoned.com
- For more information about MyMathLab, go to http://www.mymathlab.com

AOL users cannot access MyMathLab using AOL browser. However, you can log in to AOL, minimize the AOL browser, and then launch Internet Explorer (or any supported browser) separately to access MyMathLab.

For step-by-step information on how to access and initiate MyMatLab, please read section XV in this document.

VI. EVALUATION

Students will be assessed based on two major exams, mid-term and final. The students' final grade will be computed as the average of these grades and other additional class assignments determined by the class instructor.

VI. TOPICAL OUTLINE OF THE COURSE

The following is a topical outline of the course; under "normal circumstances" we should be able to follow this outline.

01/10:   Functions, Equations and Inequalities (Chapter 1)
01/17:   Advanced Function Theory (Chapter 2)
01/24:   Conic Sections (Chapter 3)
01/31:   *Review for Midterm Examination*
02/07:   **Midterm Examination: Chapters 1–3**
02/14:   Exponential and Logarithmic Functions (Chapter 4)
02/21:   Systems of Equations and Matrices (Chapter 5)
02/28:   Systems of Equations and Matrices, cont'd (Chapter 5)
03/07:   Trigonometric Functions (Chapter 6)
03/14:   *Review for Final Examination*
03/21:   **Final Examination: Chapters 1–6 (comprehensive)**

VII.   COURSE WEEKLY OBJECTIVES

First Week: Functions, Equations and Inequalities
At the end of the first week the students should be able to
➢ Solve, graph and determine the slope of linear equations
➢ Perform computations involving complex numbers
➢ Analyze and graph quadratic functions
➢ Solve and graph inequalities
➢ Apply linear and quadratic functions to real-life problems

Second Week: Advanced Function Theory
At the end of the second week the students should be able to
➢ Identify, find the domain of and graph increasing, decreasing and constant functions
➢ Find the sum, difference, product, quotient and composition of two functions
➢ Test the symmetry and determine the transformation of a graph
➢ Apply advanced functions to real-life problems

Third Week: Conic Sections
At the end of the third week the students should be able to
➢ Identify an equation of a parabola and then find its vertex by completing the square and graphing
➢ Identify an equation of a circle and then find its center and radius by completing the square and graphing
➢ Identify an equation of an ellipse, find and graph its axes and center
➢ Identify an equation of a hyperbola, find and graph its axes and asymptotes
➢ Apply conic sections to real-life problems

Fourth Week: Review for Midterm Examination

Fifth Week: Midterm Examination

Sixth Week: Exponential and Logarithmic Functions
At the end of the sixth week the students should be able to

➢ Define and graph inverse, exponential and logarithmic functions
➢ Find common and natural logarithms and antilogarithms
➢ Solve equations involving exponentials and logarithms
➢ Apply exponential and logarithmic functions to growth and decay problems

Seventh Week: Systems of Equations and Matrices
At the end of the seventh week the students should be able to
➢ Solve two-variable and three-variable systems of linear equations Algebraically or graphically
➢ Use two-variable and three-variable systems of linear equations to solve real-life problems
➢ Solve systems of equations using matrices
➢ Perform matrix operations: add, subtract and multiply matrices

Eight Week: Systems of Equations and Matrices—Continued
At the end of the eighth week the students should be able to
➢ Find the inverse of a square matrix and then use this method to solve systems of equations
➢ Evaluate determinants of square matrices
➢ Use Cramer's rule to solve systems of equations
➢ Graph linear inequalities
➢ Solve linear programming problems

Ninth Week: Trigonometric Functions
At the end of the ninth week the students should be able to
➢ Identify the trigonometric functions of a variety of angles
➢ Apply the concepts of trigonometry to right triangles, unit circle and circular functions
➢ Graph trigonometric functions
➢ Evaluate trigonometric and inverse trigonometric functions
➢ Apply trigonometric functions to real-life problems

Tenth Week: Review for Final Examination

Eleventh Week: Final Examination

VIII. EVALUATION METHODS

Final grade:
Final examination   = 40%
Midterm examination   = 30%
HW Assignments   = 20%
Class participation   = 10%

Grading scale:
90–100 = A,   80–89 = B,   70–79 = C,   60–69 = D,   below 60 = F

IX. "INCOMPLETE" GRADE POLICY

Instructors have the option of giving the grade of Incomplete ("I") only to a student whose work in a course has been satisfactory, and the student, because of illness or other circumstances beyond the student's control, has been unable to complete some small part of the course work. The student must remove the "I" grade by completing work assigned by the instructor. It is the responsibility of the student to request and make arrangements with the instructor to complete the work during the following quarter by the date specified. Otherwise the "I" automatically becomes an administrative "F" ("F*"). An administrative "F" counts as an "O" in determining the grade point average.

No student receiving an "I" can be on the Honor Roll or the Dean's List for that quarter. Please review the policy and procedures covering academic dishonesty in the Strayer University Catalog.

X. ATTENDANCE POLICY

Regular attendance of scheduled classes is required and essential for effective learning. It is the student's responsibility to inform the instructor prior to an absence from class. Messages can be left at the e-mail address or phone listed above. Students are responsible for work missed during an absence.

Regular review of course materials and completion of weekly assignments is required and essential for effective learning. A weekly attendance report is logged according to your participation. The student will be given credit for attendance for a week if they have accessed the course web page at least once during the week, otherwise an "absent" entry will be reported for attendance. It is university policy that if a student misses four consecutive class sessions they will be administratively withdrawn from the course. This could result in a grade of "WF", if withdrawn (see academics for specific date). More than (3) absences will be defined as unsatisfactory progress, lowering the course grade or potentially resulting in a grade of "F". If a student stops attending classes without administratively withdrawing from the course, the student may receive a grade of "WF". The last day to withdraw without academic penalty is (*see academics for specific date*). The procedures to withdraw are outlined in the Strayer University Catalog.

Online attendance of classes is the sole responsibility of the student. It is possible to be disconnected from the Internet from time to time due to technical difficulties. If being disconnected continues uncontrollably, you are urged to call Strayer Online Tech Support at (800) 422-8055 or email your concern to helpdesk@strayeronline.net. Please do not allow computer problems to disrupt your participation throughout the course.

XI. POLICY ON ASSIGNMENT DUE DATES

Strayer University's academic philosophy is to provide each adult student with an opportunity to actively learn and demonstrate competencies needed in today's high performance workplace. Opportunities will be made available for you to reach your maximum learning potential. Just as in the workplace, it is expected that you will

complete all assignments and assessments by the due date. You instructor may deduct credit for assignments turned in after the due date.

XII. ACADEMIC INTEGRITY POLICY

Strayer University holds its students to high standards of academic integrity and will not tolerate acts of falsification, misrepresentation, or deception. Such acts of intellectual dishonesty include, but are not limited to, cheating or copying, fabricating data or citations, stealing examinations, unauthorized use of instructor editions of textbooks, taking an exam for another, tampering with the academic work of another student, submitting another's work as one's own, facilitating other students' acts of academic dishonesty, using Internet sources without citation, or any other form of plagiarism.

For more details on Strayer University's Academic Integrity Policy, please contact your Campus Academics Office.

XIII. Learning Resources / Library

Learning resources to help students succeed academically are available through the Strayer University Library. Each campus Learning Resources Center (LRC) offers print resources, books, and periodicals for research. Circulating books located at any LRC may be requested for use through the LRC Specialist.

Library resources are also available online, and can be accessed from any computer connected to the Resource tab located on eCollege course web pages. The online search tool EBSCO Host and other LRC resources can be accessed through the university's website at http://studentserver.strayer.edu/CONT_STD/LIBS/libs2.htm. They provide thousands of full text periodicals, over 25,000 electronic books, radio and TV transcripts, the complete Encyclopedia Britannica, access to the Strayer library catalog, online tutorials, and useful links to Internet resources. A tour of the LRC is highly recommended and can be scheduled through your LRC Specialist.

XIV. XIV. TUTORING ASSISTANCE

You will be required to attend tutoring if your instructor determines, at any time during the quarter, that you need additional help in order to progress successfully in the course. With tutoring assistance you will be able to receive additional help to address deficiencies, answer questions, and identify strategies to be successful in this course. Your instructor will provide tutoring meeting times and place.

Free tutoring is also available through the publisher of the class textbook, Pearson's Tutoring Center (PTC). To sign up for free math tutoring at PTC, you may call 1-888-777-0463 (5 pm –12 am EST) or register at www.aw.com/tutorcenter using your CourseCompass Course ID or student access code.

XV. GETTING STARTED WITH MyMathLab

What do you need to get started?
- **A valid email address**

If you don't have it, contact your school technology center or set up a free account on a website that offers this service (for examples: www.yahoo.com or www.hotmail.com)

- **Course ID**
Contact your instructor to obtain it. The course ID is unique for each course.
- **Student Access Code**
If your new textbook is not bundled with student access code, you need to go to your campus bookstore to purchase a standalone Student Access Kit (The kit contains access code card and instructions) for your textbook.
You may go to the virtual bookstore to purchase it online using a credit card.

What steps do I take next?
1)   In order to register, you will need to use the Course ID.
2)   Go to www.coursecompass.com. For an audio tour on how to register, click on **'Take a Tour'**, and select the 'Register and enroll in a course with a code' tour.
3)   Click on the Students **'Register'** button.
4)   Enter your six-word access code found inside your student access kit, under the tab.
5)   Register only ONCE using the access code in your kit. You will create your own Login Name and Password. After registration you'll receive a confirmation email.
6)   After you've registered: Login at http://coursecompass.com (bookmark this URL), using the Login name and Password you have just created.
7)   From the Welcome page click on your course, then choose the Installation Wizard link to check that your computer has the required set-up and plug-ins. The **MathXL player must be installed** for you to work exercises within the tutorial, homework, and tests.
8)   For help on entering answers, go to the audio tour:
http://www.mymathlab.com/tours.html
and click on the How to Enter Answers Using the MathXL Player link.
*** If you have questions or need assistance call tech support at 1 800 677 6337**

XVI.   FINAL NOTES

Teamwork is **strongly recommended** in studying and in completing the homework assignments. All exams are in-class, 3-hour, open-text, open-class-notes exams; no collaboration is permitted on the exams. All other aspects of academic integrity are covered in section XII. By submitting the assignments for grade, the students attest to have abided by these rules.

XVII. NOTES BY STUDENT