MATH 151 Precalculus Syllabus

Fall 2011

Prerequisites: MATH 141 (a grade C or better is strongly advised), or satisfactory score on the VCU Mathematics Placement test.

Text & Computer software: For our text, we will be using Precalculus, 3rd edition, by Carl Stitz and Jeff Zeager. A free digital copy of the text is available for download on Blackboard. Though a hardcopy version of the text will not be available at the bookstore, you can purchase it as two books here:


You will also be required to purchase access to WebAssign, an online homework system. Instructions on how to register for your section’s WebAssign site can be found in the Starting with WebAssign document posted on Blackboard. After registering, you will have a 14-day grace period to access WebAssign before you are required to purchase it. The cost as of August 2011 is $25.95.

Calculators: A graphing calculator is required - a TI-83, TI-83 Plus, TI-84, or TI-84 Plus is highly recommended. The TI-89, TI-92, or any other calculator with a built-in symbolic algebraic system will not be permitted on any quiz, test or the final (The TI-82, TI-85 or TI-86 are allowed, but NOT recommended).

Content: Chapters 1.3-1.7, 2.1-2.4, 3.1-3.3, 4.1-6.5, 10.1-10.7 (some topics may be omitted)

Course Goals: The goal of Precalculus (MATH 151) is to prepare each student for Calculus. A student well-prepared for calculus will be able to model real-world problems and analyze their quantitative aspects, using strong algebraic and trigonometric skills.

Objectives: Throughout the semester a student will construct a variety of models to analyze quantitative aspects of real-world problems. To do so, the student will master numerous algebraic and trigonometric techniques, which will be used to solve equations involving various types of functions, e.g. polynomial, exponential, logarithmic, trigonometric. The student will also relate the algebraic properties of a function, such as whether it is a polynomial function, e.g. \( f(x) = 3x^2 - 5x + 1 \), an exponential function, e.g. \( f(t) = 4^t \), or a trigonometric function, e.g. \( f(\theta) = \sin(2\theta) \), to the properties of its graph (For instance, are there turning points? is there a maximum or minimum? does the graph cross the x-axis or y-axis?).

Students are expected to understand the content of the text and to be able to solve successfully exercises such as those assigned for homework. The skills needed to solve the homework exercises are the skills students will need to demonstrate on tests and the final exam.

Methods: Precalculus is a difficult course that covers a large amount of material, consisting of literally hundreds of algebraic and trigonometric techniques. Not all the techniques will be covered in class sessions, so the student needs to learn many of the individual techniques outside of class. This learning comes in two parts: The student must understand the technique, e.g. the quadratic formula, and how to use it, and the student must be able to use the technique correctly. This second skill – working exercises correctly – comes through repeated practice and drill. To ensure that each student practices enough, there are homework assignments through WebAssign that will require significant time.

While the instructor can guide the student to understand these techniques in the classroom, the student’s mastering of the techniques comes through homework. Many of our classroom activities will involve discussion of models of the real world that these techniques allow us to analyze. We will have a number of short group activities in class, so that you will be actively involved in the subject matter.
Lecture meeting: New material will be covered in lectures, as well as the three Calculator Based Learning (CBL) labs, and any other work the instructor assigns. The dates for doing the CBL labs may be found in the Tentative Schedule.

Other policies: Make sure you are familiar with your instructor’s attendance policy. All students are responsible for all material covered and announcements made. It will be assumed that students have read the appropriate portions of the text before the class session in which it is discussed. This will enable class sessions to be interactive, with lots of student involvement. While classroom discussions may not always cover every item in the text, they will be designed so that students can achieve understanding of the material.

Homework and Class Work: Homework will be assigned each time new material is introduced, and will include all assigned WebAssign exercises. There will be daily classroom worksheets, sometimes more than one. There are no make-ups on classroom worksheets. Worksheets are graded for completion and are not returned. Your four lowest worksheet scores will be dropped – class attendance and participation are extremely important – but we know that there are occasional excusable reasons for missing class.

Tests and Exams: There will be three regular tests, based on the material covered since the previous test. The final exam will be comprehensive, and based on all material of the semester. The tests and the final will take place in the regular meeting room. There will be an online practice test before every test worth bonus points (10% of your practice test score will be added to your test score, with 100 as the max). Makeup tests will considered for extraordinary circumstances. You must contact your instructor immediately if you wish to be considered for a make-up test.

Grade Calculation:

- Three Tests (1½ hours) 15% each
- Final Exam (3 hours) 25%
- Class Work 10%
- Three CBL Labs 2% each
- Homework 14%

Grading Scale:

- A 90% - 100%
- B 80% - 89%
- C 70% - 79%
- D 60% - 69%
- F 0% - 59%

Course Administration: Should you have any questions or concerns regarding this course beyond the scope of your instructor’s responsibilities, you may contact the Math 151 chair, Craig Larson (clarson@vcu.edu), the course coordinator, Christian Mason (masonca@vcu.edu) or the mathematics department’s ombudsman, Dr. John Berglund, (jfberglu@vcu.edu)

Important Dates:

- Thu. Aug. 25 through Wed. Aug. 31 Add/Drop period
- Mon. Sep. 5 University closed
- Thu. & Fri. Oct. 20 & 21 Reading days (no classes held)
- Fri. Nov. 4 Last day to withdraw with a ‘W’
- Wed. Nov 23 through & Sun. Nov. 27 University closed starting at noon Wednesday
- Sat. Dec. 10 Last day of day classes
- Mon. Dec. 12 Final exams begin
**Statement on Americans with Disabilities Act:** Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 require Virginia Commonwealth University to provide an 'academic adjustment' and/or a 'reasonable accommodation' to any individual who advises us of a physical or mental disability. If you have a physical or mental limitation that requires an academic adjustment or an accommodation, please arrange a meeting with me at your earliest convenience. Additionally, if your course work requires you to work in a lab environment, you should advise the instructor or department chairperson of any concerns you may have regarding safety issues related to your limitation(s). The VCU Disability Support Services website is [http://www.students.vcu.edu/dss/](http://www.students.vcu.edu/dss/).

**VCU Honor System:** All VCU students are presumed upon enrollment to have acquainted themselves with and have an understanding of the Honor System. Therefore, it is a student's responsibility to ask course instructors to clarify expectations for each assignment in order to be in compliance with the Honor System. The VCU Honor System policy statement and purpose is located at: [http://www.provost.vcu.edu/pdfs/Honor_system_policy.pdf](http://www.provost.vcu.edu/pdfs/Honor_system_policy.pdf)

**Classroom Conduct:** Professional conduct will be expected at ALL TIMES and disruptive talking or behavior will NOT be allowed. A description of the VCU Student Conduct in Instructional Settings Policy can be found at: [http://www.ts.vcu.edu/policies/studentconduct.html](http://www.ts.vcu.edu/policies/studentconduct.html)

**VCU Statement on Safety**

- Sign up to receive VCU text messaging alerts ([http://www.vcu.edu/alert/notify](http://www.vcu.edu/alert/notify)). Keep your information up-to-date.
- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on campus classrooms.
- Listen for and follow instructions from VCU or other designated authorities.
- Know where to go for additional emergency information ([http://www.vcu.edu/alert](http://www.vcu.edu/alert)).
- Know the emergency phone number for the VCU Police (828-1234). Report suspicious activities and objects.

**University Counseling Services:** [http://www.students.vcu.edu/counseling/](http://www.students.vcu.edu/counseling/)