

MATH 130

Precalculus Mathematics

General Description

Introduction

MATH 130 is designed primarily for students who will enter the calculus sequence MATH 231–233. Topics include the basic concepts of trigonometry and analytic geometry and algebraic concepts relevant to the future study of calculus. The course is mainly problem-oriented. **Prerequisite:** MATH 110 (called MATH 10 prior to fall 2006), College Algebra, or its equivalent.

This course is organized into sixteen lessons, four of which are closed-book tests. The remaining twelve lessons cover one or two sections of the text per lesson.

Learning objectives are presented at the beginning of each lesson. These, along with problems from the text, will be the foundation for preparation for the tests and the final exam.

The discussion portion is not intended to replace reading the text. It was written to provide you with additional information or examples, to enhance what the author of the text is saying, to highlight text items, or to steer you away from material you will not be held accountable for. We recommend that you read the discussion portion before reading the text, but keep it handy for reference while reading the text.

Finally, each lesson has practice problems, most with answers in the back of your text, for you to use to practice the concepts being covered. There is also a written assignment to be completed and submitted to your instructor for grading.

Required Materials

The following textbook is required for the course:

Precalculus: Functions and Graphs, Swokowski and Cole, 11th edition, Brooks/Cole Publishing.

A scientific or graphing calculator is required. You may use your calculator on the tests and the final exam. Symbolic manipulators, such as the TI-89, are not allowed.

You may purchase the text from the Higher Grounds bookstore at the Friday Center using the book order form in this manual, or online at <https://s4.its.unc.edu/HigherGrounds>.

Written Work

Aside from three written-assignment problems in Lesson 1, all of the practice problems and the written assignments come from the text. Math is a discipline that can only be learned through hands-on experience; the more problems you can work, the better you will understand the material. If you feel that you need to do more practice problems than are listed, please do so.

Please turn in the problems for the written assignment on standard-size notebook paper; preferably without the fringes. Please complete the problems in order. Each problem should be copied down, except for lengthy word problems, and worked out, with a box around the answer. Please do not submit the practice problems. Keep in mind that neatness is not only appreciated by your instructor, but is important when it comes to grading the more involved problems.

It is important to **communicate mathematically** when preparing the written assignments, writing for a test, or writing for the final exam. Write in a mathematical fashion using numbers, variables, symbols, and words to clearly express your solution to a problem. A solution to a problem includes not only the answer(s) clearly indicated, but also the logical progression of steps to achieve the answer(s). When applicable, clearly label all sketches, graphs, and charts.

When using your calculator, pay close attention to whether you are in radian or degree mode. Being in the wrong mode will most likely give you incorrect answers.

Study Suggestions

Here are some guidelines to help you achieve success in this course:

- First read through the Objectives and the Discussion in this manual for the lesson you are about to begin.
- Carefully read the corresponding section of the text before you attempt the Written Assignment.
- Be an active reader; keep paper and pencil handy while reading, and follow along as example problems are solved.
- Before you begin the Written Assignment, work the Practice Problems and, if needed, other odd-numbered exercises until you feel confident.
- Carefully review the graded assignments as they are returned and rework the problems that are marked incorrect. This will help you avoid making similar errors on future assignments.

Exams and Grading

This course includes four unsupervised tests and one supervised final exam. You may use your calculator on the tests and the final. The tests are not cumulative; they only cover material from the corresponding section of the course. The final exam is cumulative; it covers all of the material presented in this course.

Note: You must pass the final exam in order to pass the course. A passing grade on the final is 60 percent. If the final is retaken, the score used in computing the final course grade will be the average of the final grades.

Your final course grade will be determined by your performance on three components: the written assignments, the four tests, and the final exam. Each component will count for one-third of your final grade.

Resources

Samples of old final exams are available on the Web at www.math.unc.edu. Click on “For Undergrads” and then “Sample Final Exams for Freshman Courses.” If you purchased a new textbook, you should have an access code for CengageNOW; you can use that to access online tutorials at www.academic.cengage.com/now.