Math 5060-022 — Summer II 2005

Overview

Welcome to Number Theory Concepts! We will learn about the various kinds of numbers, their properties, their history, and their uses. In particular we will learn about whole numbers and their names; number words; using geometry to do arithmetic; figurate numbers; modular numbers; counting, arranging, and choosing; number sequences; primes; perfect numbers; fractions; algebraic numbers; imaginary numbers.

Text and syllabus

We will cover the first 8 chapters of *The Book of Numbers*, a fun book by John Conway and Richard Guy. This means we will on average cover each chapter in 2 days. A fast pace!

Prerequisites

We will not be solving equations or studying functions. However we will freely use algebraic notation and concepts, including equations and the concept of a function. We will also use a great many geometric concepts and results, including similarity, angle measure, Pythagoras' Theorem, and cartesian coordinates. If you have any concerns about these prerequisites, you should plan to come to class a bit early each day, so that we can spend some extra time on these.

Office hours

My office is UH 4080e. The phone number is 530 2975. My email address is paul.hewitt-at-utoledo.edu. I will be in our classroom before class every day. If you stop by before class I will be sure to be there. If these times are not convenient then we can try to find another time to meet. However, during this summer semester I have very few free hours.

Worksheets and quizzes

We will begin each chapter with a discussion of the content. I will pass around worksheets that we will begin in class, then work on at home. We will finish these and turn them in for grade the next day. We finish each chapter with a multiple-choice quiz.

Final exam

If, after the 8 work sheets and 8 quizzes, you want to try and improve your final grade then you can take an optional, comprehensive final exam. The format of the final exam will be similar to that of the midterm exams, but it will be much longer. If you choose to take the final exam then your score will be worth 40% of your final grade. If you choose to take the final exam then your score will count towards your final grade. Skipping the final exam is an option. Dropping your score is not.

Calculators

You may use calculators when you study and work on the homework. You will *not* be able to use calculators on any of the quizzes.

Grades

Your final grade will be based on the following scale:

$$85–100\%\text{: A}; \quad 75–85\%\text{: B}; \quad 65–75\%\text{: C}; \quad 55–65\%\text{: D}$$

At your option I will post your individual scores, under a nickname of your choosing. If you want me to post your scores then bring me a 3×5 card with your name, email address, and the nickname you want to use. I will not email your grades to you. If you do not bring me a 3×5 card then I will not post your scores.

Attendance

If you do not attend class every day, and come to class prepared, then you put yourself at serious risk of failure. There is no time to spare. Most days I will note your attendance and your preparedness. Altho this will not count directly towards your grade it will influence my decisions on borderline grades. Your attendance and your class participation are the main indication of your level of effort.

Academic honesty

The University of Toledo treats academic dishonesty very strictly. I encourage you to study with each other. However, the work you turn in must be your own. Do not copy from each other. If you cheat on the homework or exams then you will get an F in this course.