INTRODUCTION TO CONTEMPORARY MATHEMATICS
A&S 100-002, 100-003, 100-004
Fulfills University Studies Basic Skills Requirement

Are you eligible to take MA 109, but do not plan to take a calculus course to fulfill any University requirements? Try A&S 100 (Sections 002, 003, and 004), Introduction to Contemporary Mathematics. This course will fulfill the Basic Skills Requirement, and can be followed by PHI 120 and STA 200 to fulfill the Inference Requirement. Note, however, that A&S 100 will NOT cover the prerequisite material for calculus courses. This course is being proposed as a new course in the Department of Mathematics. For more information, contact Professor Carl Lee, 257-1405, lee@ms.uky.edu, or see the website http://www.ms.uky.edu/~lee/as100fa02/as100fa02.html.

Here are some questions and problems that we might consider in the course:

1. Did you know that the House of Representatives did not always have 435 members? Suppose you know the populations of each of the states. What is a fair method of dividing up the seats in the House? What did Alexander Hamilton, Thomas Jefferson, and Daniel Webster say about this? What is the Alabama paradox?

2. How does the Universal Product Code (those patterns of vertical lines on commercial products) work to avoid and correct scanning mistakes? How can you tell by the serial number whether a U.S. Postal Service money order is likely to be authentic? What kinds of codes are so hard to break that even if you know the encoding method, it doesn’t help you to decode the messages?

3. How many types of symmetry can wallpaper patterns have? What does this have to do with classifying archaeological artifacts? Who was M.C. Escher and what is the relationship between his drawings and crystallography?

4. Given a highway map of the United States, how can you find the shortest route from Lexington to Seattle? How can you find the shortest route that takes you through a given set of cities?

5. How can you play (and win!) some (simple) games?

If you are interested understanding the spirit and use of mathematics in contemporary human endeavors, but do not require a calculus course for your program of study, this might be the course for you.