

MA 325
Spring 2005, 12:25 to 1:15, MWF in HA 377

An Introduction to Applied Mathematics

<http://www4.ncsu.edu/eos/users/w/white/www/white/ma325.htm>

by

**R. E. White (coordinator),
E. Stitzinger, M. Olufsen, H. T. Tran, and M. Kang**

This three-credit course is a survey of applications of mathematics and will be suitable for students who have taken multivariable calculus. The course will enable the student to formulate a cohesive plan of study for the third and fourth year, which includes 15-27 elective credits related to applied mathematics. Mathematics education majors will find the variety of applications and a sampling of teaching styles to be very interesting. Also, perspective majors in pure or applied mathematics will find this to be good survey of mathematics.

In the spring of 2004 there will be five three-week modules on:

- Heat and pollutant transfer or Visualization and matrices (R. E. White)
- Biological applications (M. Olufsen)
- Cryptographic schemes (E. Stitzinger)
- Vibrating beams (H. T. Tran)
- Probability models (M. Kang).

Each module will serve as motivation for future course work and related academic activities. Some mathematics will have to be developed “as is needed”, but it is not necessary to fully describe the mathematical analysis related to the applications....this can wait for a subsequent course.

Each module will have some traditional homework assignments (15 % per module). The students will also be required to write a one or two page summary (2 % per module) at the end of each module. These summaries will be used in the preparation of about a five page “Plan of Study for The Third and Fourth Years” (15 %). This should include possible course work, prerequisites, faculty interviews, and related activities such as intern programs and employment opportunities.