Immerse 2008
Algebra Course

Instructors: Glenn Rice  Bart Snapp
Office: 329 Avery Hall 330 Avery Hall
Office Phone: (402) 472-7248 (402) 472-7251
E-Mail: grice1@missouriwestern.edu snapp@coastal.edu

Course Website: http://ww2.coastal.edu/snapp/immerse/


Objectives:

- Write original proofs demonstrating an understanding of the vocabulary and interconnections of the concepts.
- Approach mathematics with creativity, flexibility, and curiosity, often lacking in more computational courses.
- Learn how to read a research mathematical research paper.
- Prepare for graduate school.
- Gain familiarity with the computer algebra system Macaulay 2.

Course Outline:

1. Groups, Fields, Rings and ideals
2. Vector spaces, modules, and algebras
3. Chain conditions and short exact sequences
4. Graded rings, Hilbert functions, and Hilbert series
5. Monomial orderings and Gröbner bases
6. Krull dimension (time permitting)
Additional References:


Students will receive a copy of the first book, and the others that are available will be on reserve in the library.