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MATH 301.01: Mathematics with Technology for Teachers

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MATH 301
Mathematics with Technology for Teachers

Fall, 2000
3:10-4:00 MWF
MA 306

Teacher:

Jim Hirstein
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Office: MA 304
Hours: 11-12 TTh, 2-3 MWF

Purpose:

Discrete and continuous mathematical models from a variety of disciplines using appropriate technology. Mathematics teachers need to be able to construct models to analyze real-world settings and to recognize the role of symbols in reasoning and analysis. Library and internet resources will be important components in many investigations.

Prospective list of topics:

Technology	Mathematical modeling
Calculators	Discrete-continuous
Spreadsheets	Deterministic-probabilistic
Graphing utilities	Statistical analysis
Geometry utilities	Simulation
Symbolic manipulators	Data collection devices

Textbook:

A First Course in Mathematical Modeling (2nd Edition) by Giordano, Weir & Fox
(Brooks/Cole, 1997)

A graphing calculator is strongly recommended. Prospective teachers of mathematics should be familiar with the potential use of a Texas Instruments TI-92 as a teaching tool.

Assignments and Grading:

- Technology exercises (20%): There will be individual assignments on the technology (generally due a week after the topic is presented).
- Modeling projects (60%): Individual and group projects. Reports will sometimes be written, sometimes oral (presented in class).
- Final presentation (20%): Each student will be responsible for a final project that explores a selected mathematical modeling investigation. Topics need to be selected by Oct 9, preliminary outlines submitted by Oct 23, and final reports will be given during the week of Dec 11-15.

Important: Sept. 25 is the last day to DROP or ADD courses without a fee being charged. Oct. 16 is the last day to DROP with instructor and advisor signatures. After this date, the instructor must assign a grade of WP or WF.