**PROGRAM GOALS FOR MATHEMATICS MAJORS (CURR: 0604)**

|  |  |
| --- | --- |
| **NEW Program Goals**Upon successful completion of this program, graduates should be able to: | **OLD Program Goals** (as listed in the ECC Catalog 2006 – 2008)Upon successful completion of this program, graduates should be able to: |
| demonstrate knowledge of the fundamental concepts and theories from calculus, differential equations, linear algebra, and discrete mathematics | demonstrate knowledge of the fundamental concepts of single variable and multivariable calculus.  A student will be able to find limits and derivatives, determine continuity, find integrals, use derivatives to curve sketch, and do applications from diverse fields |
| utilize various problem-solving and critical-thinking techniques to set up and solve applied problems in science, business, engineering, and technology fields | utilize various problem-solving and critical-thinking approaches to set up and solve problems as diverse as related rates, areas between curves, volume of solids, and related problems involving integration |
| communicate accurate mathematical terminology and notation in written and/or oral form in order to explain strategies to solve problems as well as to interpret found solutions | demonstrate an ability to determine whether an infinite series converges or diverges, express a function as a Taylor or MacLaurin series, and evaluate first-order and second-order partial differential equations |
| use appropriate technology, such as graphing calculators and computer software, effectively as a tool to solve such problems as those described above | set up and solve a variety of problems involving ordinary differential equations with physical and geometrical applications |
|  | recognize and solve general problems using differential equations through various methods including undetermined coefficients, variation of parameters, power series, and Laplace transforms |