

MATH 3000: Software of Mathematics

3 Credit Hours

Prerequisite: Grades of "C" or better in MATH 2202 and (CSE 1321 and CSE 1321L)

This course is designed to introduce students to numerical/symbolic computation using specialized mathematical software packages. The professional software to be taught may be MATLAB, MAPLE, Scientific Notebook or their equivalent. At the end of the course, students will be able to solve complex mathematical problems with the use of software and to write and present scientific or mathematical work professionally.

MATH 3204: Calculus IV

3 Credit Hours

Prerequisite: MATH 2203

This course is the fourth in the calculus curriculum and is concerned with the change of variables for integrals on two and three dimensional regions, line integrals, surface integrals, Green's theorem, and Stokes theorem. The analogue of Stokes' theorem (the theorem of Gauss) for integrals of functions on three-dimensional parametric regions will also be studied.

MATH 3260: Linear Algebra I

3 Credit Hours

Prerequisite: MATH 1190 or (MATH 1179 and MATH 1189)

An introduction to linear algebra and some of its classical and modern applications. Among topics to be included will be systems of linear equations, matrices, determinants of matrices and applications, vector spaces, and inner product spaces. Significant use of technology will be employed in performing matrix computations.

MATH 3261: Numerical Methods

3 Credit Hours

Prerequisite: MATH 3260 and (CSE 1321 and CSE 1321L)

This course introduces fundamental numerical methods for solving nonlinear equations, systems of linear equations, and eigenvalue-eigenvector problems. Interpolation and approximation of functions will be considered. Computing and programming techniques will be used extensively. Notes: Extensive computer use will be incorporated