

THIS IS A REFERENCE SYLLABUS DESCRIBING AN NKU COURSE IN GENERAL. ENROLLED STUDENTS SHOULD CONSULT THE ACTUAL SYLLABUS OF THE COURSE IN WHICH THEY ARE REGISTERED.

CSC 270 Mathematics Software Programming

CATALOG DESCRIPTION:

CSC 270 Mathematics Software Programming (3,0,3) Programming and problem solving with a high-level mathematical software package; variables, control modularity, processing of lists and vectors; recursion; visualization of functions; basic numerical and symbolic computation; simulation. PREREQ: C or better in MAT 128 or MAT 129.

LAST TAUGHT: Fall 2008 (S. Wilkinson)

SCHEDULED LAB USAGE: One class period per week

STUDENT BACKGROUND EXPECTATIONS:

1. Familiarity with precalculus and basic differential calculus topics

CORE TOPICS COVERED:

- Introduction and overview
- Defining and using variables, functions, and lists
- Introduction to the functional programming, procedural programming, and rule-based programming paradigms
- Programming that involves graphics
- Applications in mathematics

MOST RECENT TEXTBOOK USED :

No text is required, but a suggested reference is *An Introduction to Programming with Mathematica* by Paul Wellin, Richard Gaylord and Samuel Kamin

SOFTWARE REQUIRED:

Mathematica has been used to date. Matlab and Maple are alternatives.

STUDENT WORK

Programming assignments and labs using Mathematica and in-class exams.

LEARNER OUTCOMES

Students will be able to...

1. Develop the ability to use basic programming constructs like function definitions, conditional statements, and iterative statements to aid in the solution of mathematical and scientific problems.
2. Obtain an introductory competency with at least one computer application that supports a comprehensive computer algebra system and extensive graphical capabilities.