A. Course Description

Credits: 4

Prerequisites: ICS 140 Computational Thinking with Programming or comparable programming experience. AND MATH 315 Linear Algebra and Applications

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week :

MnTC Goals: None

This course addresses the theory and practice of numerical methods as they apply in various areas of mathematics. Possible topics include: numerical solutions of systems of linear and nonlinear equations, interpolation, numerical differentiation and integration, numerical solution of ordinary and partial differential equations.

B. Course Effective Dates: 09/06/1999 - 05/04/2002 05/04/2002 - 08/14/2010 08/15/2010 - 08/16/2017 08/17/2017 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Be able to choose an appropriate mathematical method for a given application.
2. Be able to write programs to implement mathematical algorithms on a computer.
3. Understand the limitations of computer arithmetic as well as methods to mitigate these limitations.
4. Understand the theoretical background of numerical algorithms and error estimates.
5. Understand, and be able to utilize, numerical algorithms to solve mathematical problems.

E. Learning Outcomes (MN Transfer Curriculum)

This contains no goal areas.

G. Special Information

None