



Computer Science Department

Course Syllabus

CS401 - Computational Numerical Analysis

Catalog Description:	This course emphasizes the development of understanding and analysis of the basic techniques for the efficient numerical solution of problems formulated in science and engineering; and the applicability and limits of their appropriate use. Topics covered root finding, interpolation, approximation of functions, integration, differential equations, and solving system of linear equations.
Credit Hours:	3 Credit hours: 3 Lectures per week 0 Labs. per week 0 Recitation per week
Prerequisites:	MAT114 Calculus II, MAT227 Linear Algebra and Differential Equations
Course Learning Outcomes:	Upon successful completion of this course of study a student will be able to: 1. Develop numerical methods written in a computer programming language. 2. Carry out analysis and design of systems and for solving computational problems. 3. Be familiar with the applications and limitations of the numerical methods. 4. Apply numerical solution methods to different problems.
Major Topics:	- Basics - Equations in One Variable - Interpolation and Polynomial Approximation - Numerical Differentiation and Integration - Solving Linear Systems
Text Books:	Numerical Analysis 10th edition by Richard L. Burden, J. Douglas Faires and Annette M. Burden, 2015.



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Grading:

- ⦿ The grading scale for this course is:
 - . 95 - 100 A+ Passing
 - . 90 - 94 A Passing
 - . 85 - 89 B+ Passing
 - . 80 - 84 B Passing
 - . 75 - 79 C+ Passing
 - . 70 - 74 C Passing
 - . 65 - 69 D+ Passing
 - . 60 - 64 D Passing
 - . 0 - 59 F Failing

- ⦿ Final grades will be determined based on the following components:
 - . 60% Semester Work
 - . 40% Final Exam

- ⦿ Students may not do any additional work for extra credit nor resubmit any graded activity to raise a final grade.

- ⦿ Late submissions will not be accepted for any graded activity for any reason.

- ⦿ Students have one week to request the re-grading of any semester work.

Attendance Policy:

Students should attend 80% of the overall course hours taught in the semester as per the University regulations.

If a student fails to achieve this portion, he/she shall not be allowed to appear in the final exam and shall be awarded "DN" grade and repeat the course.

**Cheating and
Plagiarism
Policy:**

The instructor will use several manual and automated means to detect cheating and/or plagiarism in any work submitted by students for this course.

When a student is suspected of cheating or plagiarism, the instructor raises the issue to the disciplinary committee.



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Communications: Registered students will be given access to a section of the Blackboard Learning System for this course. Bb will be used as the primary mechanism to disseminate course information, including announcements, lecture slides, assignments, and grades.

Communication with the instructor on issues relating to the individual student should be conducted using CIS email, via telephone, or in person.