

Dept Number	MATH/CS 475	Course Title	Numerical Analysis I							
Semester Hours	3	Course Coordinator	Math Department							
Catalog Description	Introduction to theory & techniques for computation with digital computers. Topics include: solution of nonlinear equations; interpolation & approximation; solution of systems of linear equations; numerical integration. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course.									
Textbooks										
<i>Numerical Analysis</i> , Burden, Richard L. and J. Douglas Faires. Kentucky: Cengage Learning, 9 th Edition, 2010. ISBN: 9780538733519.										
References										
Course Learning Outcomes										
<ul style="list-style-type: none"> To learn the theory and practice of numerical computation. 										
Assessment of the Contribution to Program Outcomes										
Outcome →	1	2	3	4	5	6	7	8	9	10
Assessed →	X									X
Prerequisites by Topic										
MATH 221 and MATH 250 with C or better.										

Major Topics Covered in the Course

1. The nature of digital computing {2 classes}
2. Taylor's formula {1 class}
3. Discrete methods {3 classes}
4. Root finding {9 classes}
5. Interpolation {6 classes}
6. Approximation of functions {9 classes}
7. Numerical solution of $Ax=b$ {10 classes}