



Course No.	Course Title	No. of Units			Pre-requisites
		Th.	Pr.	Credit	
MATH 421	Numerical Analysis	3	-	3	Math 204 Math 241 Math 331

Course Objectives:

- The students will learn how to solve nonlinear equations.
- The students will learn how to interpolate using different formulas.
- The students will learn how to approximate derivatives.
- To teach the students how to approximate difficult integrals.

Course Description:

Shift operators, forward and reverse difference operators, Numerical solution of nonlinear equation using (bisection, fixed point, Newton method), Interpolation and polynomial approximation (Lagrange, Newton's formulas), Numerical differentiation (first and higher derivatives), Numerical integration (Trapezoidal, Simpson's and Gaussian Quadrature).

Main Text Book:

- Numerical Analysis, by Richard Burden and J. Douglas Faires, 10th edition, Thomson Brooks Cole, 2010.

Subsidiary Books:

- Numerical Analysis, by V. A. Patel, Harcourt Brace College Publishers, Orlando Florida 1994.
- Numerical Mathematics and Computing, by W. Cheney and D. R. Kincaid, 7th edition, Cengage Learning, 2012.