

Queens College, CUNY, Department of Computer Science
Numerical Methods
CSCI 361 / 761
Fall 2017
Instructor: Dr. Sateesh Mane

Classes: Mon & Wed 3:10 – 4:25 pm, KY 244; 3 hr., 3 cr.

Office & Hours: SB A201; Mon & Wed 2:00 – 3:00 pm (approx)

Prerequisites: CSCI 220 and 313; Math 152 and 231.

Textbook: (optional) Timothy Sauer, *Numerical Analysis*, 2nd ed.

Course Description: Basic topics which will be covered are:

- Useful ‘basic’ techniques (Horner’s rule, gcd calculator, Taylor series, etc.)
- Solution of non-linear equations (bisection, Newton-Raphson, secant, fixed point iteration)
- Numerical integration (trapezoid, Simpson, etc), multi-dimensional integrals.
- Applied Linear Algebra (Matrix operations)
- Numerical methods for ordinary differential equations
- Interpolation (Splines, Polynomial, etc.)

If time permits, additional topic(s) may be included. Many example applications will be drawn from finance. However, prior knowledge of finance is not a prerequisite.

Learning Goals: There will be emphasis not only on writing correct algorithms but also on understanding the motivation (or design) of the algorithms.

Course Website: <http://venus.cs.qc.edu/~smane/cs361/>

Grade Policy: The grading policy will consist of:

- Midterms (70%)
- Final (30%)
- Graduate students will be required to pass an oral exam on the last lecture day.

Exam Dates: The first midterm will be in class on Monday September 18, 2017. Other midterms to be decided.

Academic Policy: Academic dishonesty such as plagiarism or cheating will be dealt with seriously in accord with the University’s policy on academic integrity.