Course Website: [http://venus.cs.qc.cuny.edu/~smane/cs361/](http://venus.cs.qc.cuny.edu/~smane/cs361/)

Classes: Mon & Wed 6:30 – 7:45 pm, SB B145; 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: no required text.

Reference tests (optional):


Learning Goals: There will be emphasis not only on computation but also analysis. Students will be expected to learn computational algorithms and also to understand the principles underlying the algorithms.

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).
- If time permits, additional topic(s) may be included.

Students will be required to write working programs to implement the above algorithms.

Students will be required to carry out basic mathematical computations in class.

Examples are to compute the value of $x + \frac{1}{2} x^2$ for $x = 0.1$, or $\frac{\ln(y)}{z}$ for $y = 0.9$ and $z = 0.3$.

Students who are unable to employ a calculator or program a spreadsheet to perform the above tasks may be unqualified for this course.

Grade Policy: The grading policy will consist of:

- Midterm 1, Midterm 2, Final.
- Some exam questions will be mandatory for graduate students and optional for undergraduates.
- Homework is not officially graded. However, there is a strong connection between the homework assignments and the exam questions. Good quality work on homework assignments may be counted for a grade boost.

Exam Dates: There will be two midterms and a final. Dates 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.