**Numerical Analysis**

The basic objective of Numerical Analysis is to acquaint students of science and engineering with the potentialities of the modern computer for solving numerical problems that may arise in their professions. A secondary objective is to give students an opportunity to hone their skills in programming and problem solving. A final objective is to help students arrive at an understanding of the important subject of errors that inevitably accompany scientific computing, and arm them with methods for detecting, predicting, and controlling these errors.

Much of science today involves complex computations built upon mathematical software systems. The users may have little knowledge of the underlying numerical algorithms using in these problem-solving environments. By studying numerical methods one can become a more informed user and be better prepared to evaluate and judge the accuracy of the results. What this implies is that students should study algorithms to learn not only how they work but also how they can fail. Critical thinking and constant skepticism are attitudes we want students to acquire. Any extensive numerical calculation, even when carried out by state-of-art software, should be subjected to independent verification, if possible.

Numerical Analysis: What is it?

Numerical analysis involves the study, development, and analysis of algorithms for obtaining numerical solutions to various mathematical problems. Frequently, numerical analysis is called the mathematics of scientific computing.