Basic Engineering Programming

Basic Engineering Programming is a one-credit course designed to provide students with an introduction to computer tools and computer programming languages used by engineers. The goal is to develop sufficient knowledge to perform basic analysis using common engineering programming languages. Topics will include language fundamentals, algorithm analysis and solution, program structures, data structures, object-oriented/modular structure, and overviews of computer hardware and software tools available to solve real world engineering problems. A variety of languages may be introduced such as MATLAB, Fortran, C, C++, Robot C, and Easy C along with engineering specific languages such as LabVIEW, Spice, and VHDL.

Student in this course affiliate with the Technology Student Association (TSA) as the co-curricular career and technical student organization (CTSO). TSA provides additional opportunities that enhance classroom instruction, develop leadership skills, and promote career development.

Students will:

1. Compare programming languages commonly used in engineering.

2. Explain the structures and philosophies of a computer programming language that are needed in order to be able to successfully learn other programming languages to include; computational algorithms, control flow statements, functions, program structures, data structures, input/output, and object-oriented/modular programming features

3. Develop effective programs in a programming language commonly used by engineers to create simple computer programs to solve real world engineering problems by writing the code, performing unit testing and debugging the program.

4. Evaluate created program results based on original requirements to determine their functionality, modularity, and usability.