COMPUTER SCIENCE (COSC)

COSC 1315. Introduction to Computer Science. 3 Hours.
This course teaches the basics of MATLAB programming. The students will learn how to write MATLAB programs for electrical and computer science applications that include calculations and graphing. The course will also emphasize the documentation of programs. The course will cover concepts that will include arrays and array operations, programming techniques, plotting, and linear algebraic equations with MATLAB. It will provide an overview of MATLAB programming concepts, design, and an introduction to coding. It will focus on creating working computer programs in MATLAB. Laboratory exercises provide practice in writing programs and reinforce concepts. Prerequisite: COSC 1321 or MATH 2305.

COSC 1321. Discrete Structures. 3 Hours.
This course covers mathematical mechanisms, which are widely used in the computer modeling and simulations. A discrete nature of a digital computer requires considering discrete rather than continuous models. Since to solve any problem using a computer, a proper model must be developed first, discrete structures and corresponding mathematical tools are very important. Thus the following topics are considered in this course: propositional logic and its role in algorithm design and computer programming, sets and operations on sets, relations and functions, mathematical induction, modular arithmetic and its applications, particularly in encryption, graphs, trees, binary search trees, and Boolean functions.

COSC 2318. Engineering Mathematics. 3 Hours.
This course provides the basic concepts of engineering mathematics including, but not limited to, the review of college algebra, elements of linear algebra, probability and statistics, and differential equations. Prerequisite: COSC 1321.