COMPUTER SCIENCE (COSC)

COSC 1315. Introduction to Computer Science. 3 Hours.
This course provides a breadth first introduction to the discipline of Computer Science, including substantial coverage of at least one major programming language including coding assignments. Topic coverage will include: an introduction to algorithms, digital logic, computer architecture, networks, information security, compilers and language translation, families of programming languages, simulation and modeling, e-commerce, databases, and artificial intelligence. Students completing the course successfully will be well prepared in the major of Computer Science.

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, tress, 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.