

# COMPUTER SCIENCE (COSC)

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## ◆ COSC 1301

### Introduction to Computing

CRT HRS:3 LEC HRS:3 LAB HRS:1 OTH HRS:0

This course is an overview of computer systems—hardware, operating systems, the internet, and application software including word processing, spreadsheets, presentation graphics, and databases. Current topics such as the effect of computers on society, and the history and use of computers in business, educational, and other interdisciplinary settings are also studied. This course is not intended to count toward a student's major field of study in Business or Computer Science.

*Prerequisite:* None.

## ◆ COSC 1315

### Introduction to Computer Programming

CRT HRS:3 LEC HRS:3 LAB HRS:1 OTH HRS:0

This course is an introduction to computer programming for solving a variety of problems. This course is intended for non-computer science and non-computer engineering majors. Emphasis on the fundamentals of design, development, testing, implementation, and documentation of computer programs. Includes problem solving with structured techniques and algorithms using pseudo code and/or graphical representations.

*Prerequisite:* COSC 1301 with a grade of "C" or better or BCIS 1305 with a grade of "C" or better.

## ◆ COSC 1320

### C Programming

CRT HRS:3 LEC HRS:2 LAB HRS:3 OTH HRS:0

This course introduces the fundamental concepts of structured programming in the C language. Topics include data types; control structures; functions; structures, arrays, pointers, pointer arithmetic, unions, and files; the mechanics of running, testing, and debugging programs; introduction to programming; and introduction to the historical and social context of computing.

*Prerequisites:* MATH 0200 or TSI complete in Math.

## ◆ COSC 1337

### Programming Fundamentals II

CRT HRS:3 LEC HRS:2 LAB HRS:3 OTH HRS:0

This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing and debugging software.

*Prerequisite:* COSC 1436 with a grade of "C" or better.

## ◆ COSC 1436

### Programming Fundamentals I

CRT HRS:4 LEC HRS:3 LAB HRS:2 OTH HRS:0

This course introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy.

*Prerequisite:* Concurrent enrollment in MATH 0200 or TSI Complete in Math; recommended MATH 1414 with a grade of "C" or better.

## ◆ COSC 2425

### Computer Organization

CRT HRS:4 LEC HRS:3 LAB HRS:2 OTH HRS:0

The organization of computer systems is introduced using assembly language. Topics include basic concepts of computer architecture and organization, memory hierarchy, data types, computer arithmetic, control structures, interrupt handling, instruction sets, performance metrics, and the mechanics of testing and debugging computer systems. Embedded systems and device interfacing are introduced.

*Prerequisite:* COSC 1436 with grade of "C" or better.

## ◆ COSC 2436

### Programming Fundamentals III

CRT HRS:4 LEC HRS:3 LAB HRS:2 OTH HRS:0

This course includes further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), searching, sorting, recursion, and algorithmic analysis. Programs will be implemented in an appropriate object oriented language.

*Prerequisite:* COSC 1337 with a grade of "C" or better.