

COMPUTER SCIENCE (CSCC)

CSCC 200 Introduction to Computers and Data Processing

Students gain experience using word processing, electronic spreadsheets, and database management software. The use, misuse, and abuse of computers will be discussed with examples from many fields. Different sections of this course may be offered on different hardware platforms, usually IBM-PC compatibles or Macintoshes, but the same concepts will be studied in each section and therefore the course may be taken for credit only once. 3 credits.

CSCC 205 Computer Programming

This competency prepares students to program, develop, debug and troubleshoot modern computer programs using the Visual Basic programming language. Students will learn how to use conditional statements, loops, and error checking logic. 3 credits.

CSCC 210 Program Applications

This course focuses on embracing the mobile and online nature of today's computing environment. It establishes an understanding of mobile application development and also the development of websites tailored for mobile devices. A culminating experience to create a mobile website or application will be presented. 3 credits.

CSCC 251 Computer Systems Architecture

Students learn the major components and structure of the hardware and software of both a computer and a networking system. Students will learn to describe the mechanism of information processing, transfer, and control within digital computing systems. 3 credits.

CSCC 270 Security

Prerequisite: CSCC 251.

Students learn systematically the concepts, issues, challenges, and technological solutions of computer networks security and develop procedural and technological solutions with hands-on practice. 3 credits.

CSCC 301 Introduction to Programming

This course will introduce students to the basic components of programming as well as introducing students to applications of programming skills. This course is designed to introduce the fundamentals of designing, coding, and documenting programs using basic data structures. 3 credits.

CSCC 302 GIS Methods and Ethics

The purpose of this course is to teach students how to use multiple spatial research methods using Geographic Information Systems that includes both quantitative and qualitative approaches. The course addresses the ethical collection, handling and analysis of data including the sharing of spatial data analysis results that do not cause harm to the public. Students will learn how to assess which spatial research methods are most appropriate to investigate a problem and to generate solutions and better understanding of a Situation. 3 credits.

CSCC 303 Foundations in Spatial Communications

The goal of this course is to learn how to communicate relevant information to key stakeholders effectively using spatial data analytics across a variety of mediums. Students will attain emotional and culturally intelligent skills used to translate data for supervisors, business leaders, gatekeepers and the community at large. Students will begin development of meaningful infographics, maps, images, charts and graphs using spatial thinking and GIS. 3 credits.

CSCC 304 Spatial Visualization and Data Analytics

Using diverse GIS tools and technology resources, in this course students will engage in multiple spatial visualization activities. Based on the type of data and outcomes of the data analyses, different conclusions will be drawn. This course will assist you as a professional to better assess which geospatial visualizations are most appropriate as a function of the analysis being conducted. 3 credits.

CSCC 305 Applied Data Wrangling

Approximately 80% of the time is spent finding data that is appropriate to completing a project. In this course students explore and develop skills in the arena of data wrangling. Data wrangling is the process of finding, extracting, storing and organizing data that is appropriate for a particular project. These are common activities for data analysts and data scientists across industries-who often rely on secondary or existing data for analysis. This course also explores the process of data from the user with secondary data. Topics of metadata and appropriate data sourcing and evaluation are taught. 3 credits.

CSCC 306 Machine Learning

Machine learning is a societal and business trend that impacts the use and analysis of data across many different industries. This course teaches students how to utilize data while applying a machine learning lens. Topics covered include first, identifying appropriate types of data that can and should be accessed using machine learning as well as those types of data that should not be accessed using machine learning. Students will learn to think critically about the use of data for different businesses and best practices for data usage across industries. Advantages and disadvantages to machine learning will be explored as well as identifying the best fit for when to use machine learning algorithms. Assessment of machine learning best practices and operational workflows will also be taught. 3 credits.

CSCC 315 Organizations, Management, and the Networked Enterprise

Students explore the role of information systems in the operation of an organization. This course introduces the use of information technologies for the access and retrieval of information from internal information systems and from systems on the Information Superhighway. 3 credits.

CSCC 320 Sourcing Analysis

In this course, you will develop an understanding of the sourcing process and strategies for identifying and evaluating potential sources for procurement. You will examine various sourcing strategies, and the factors that influence these strategies, including forecasting of buying data, development of an organizational structure, and implementation of a business process design and e-solutions. You will also develop an understanding of internal and external communication within supply chain management, the importance of supplier contract management and negotiation, corresponding performance evaluations, and potential tools for continuous improvement. 3 credits.

CSCC 325 International, Domestic, Local and In-sourcing

In this course, you will develop an understanding of the issues and opportunities in international business, including international sources of materials and services, the role of finance in global business transactions and options for domestic, local, and in-sourcing, and total cost ownership. You will also develop an understanding of the documentation necessary to maintain cross-border transactions and monitor sourcing relationships according to your organization's social, economic, and ethical mission. 3 credits.

CSCC 353 Data Communications and Computer Networks

Students explore the principles and techniques of data communications and give special emphasis to networks and distributed systems. The I.S.O. Reference Model for open systems interconnection will be investigated, and the function and operation of each protocol layer analyzed. 3 credits.

CSCC 360 Web Design and Technologies

Effective use of Internet connectivity and services is strategically critical to many organizations today, because many of their suppliers, customers, and competitors are Internet-based. In this course, students will review many of the associated technologies and some of the business processes used to manage those technologies. 3 credits.

CSCC 361 Operating Systems

The purpose of this course is to help students understand operating system basics and operating system administration. Throughout this course, students will gain an understanding of how operating systems are installed and configured and used in various business settings. Students will also review how to troubleshoot common computer and operating system issues and identify common security threats to computer resources. 3 credits.

CSCC 362 Fundamentals of Software Development

In this course you will be presented with general aspects of software development, core programming concepts, algorithms, object oriented programming, web servers, data base management system (DBMS), Structured Query Language (SQL), and developing desktop applications. 3 credits.

CSCC 363 Data and Information Management

The purpose of this course is to teach you how to plan and design relational databases. This course will help you as an IT professional to understand relational database fundamentals and database design methodology. You will also review Structured Query Language and relational algebra. This course will also highlight the areas of data governance and security. This knowledge will help you be a valuable member of projects dealing with databases. 3 credits.

CSCC 364 Server Administration

Upon completion of this course you will be familiar with the methods and issues associated with the installation, configuration, and maintenance of a Windows server. This knowledge includes understanding various server roles, services, and functions; server storage and recovery methods; server optimization and performance techniques; and directory services infrastructure. 3 credits.

CSCC 383 Applied Project Management

Most business leaders are already aware of the dynamic nature of today's business environment. Every organization, big or small, has to consider time, resource allocation, scope, and budget for each new opportunity it wishes to pursue. Project management as a discipline ensures effective communication, collaboration, reporting, forecasting, and risk identification and mitigation, through well-defined processes. This course will prepare future project management team members and leaders with essential skills necessary to help organizations use the standard project management processes to ensure that organizational goals are achieved. 3 credits.

CSCC 395 Data Analytics Capstone

The purpose of this competency is to provide a summative program experience. It will allow students to put into action many of the concepts and techniques that they acquired throughout the program in the area of analytics and GIS with respect to insights gained from organizational data. Students will apply both information technologies and statistical approaches to better understand the business environment and enhance data-driven decision making. This competency will apply selected industry tools to conduct analyses from either a data science or data analytics perspective. 1 credit.

CSCC 408 Database

Students learn data management concepts and the representation and structure of data in the context of applications and system software. The emphasis is on the design of databases and developing applications in a client-server environment using SQL as the query language. 3 credits.

CSCC 410 Systems Analysis and Design

In this course, students will have the opportunity to review a website, analyze its design, review the limitations of the system, and propose a new system design that could be implemented. 3 credits.

CSCC 420 Database Querying and Reporting

This course introduces you to good database design in Structured Query Language (SQL) using a practical approach. You will learn how to create and design tables, use cursors, use transactions, and create views and stored procedures. This course focuses on a step-by-step overview and implementation with hands-on labs and tutorials. 3 credits.

CSCC 470 Mobile Development Fundamentals

In this course, you will learn about the fundamentals of development for mobile devices. This includes learning about various mobile environments, scripting frameworks, user interface development, and app development. 3 credits.

CSCC 475 Cloud Computing

The purpose of this course is to teach you how to develop, maintain, and deploy cloud computing and virtualization technologies. This course will help you as an IT professional understand the business value of cloud computing and learn about industry best practices to deploy cloud technologies. You will also learn about security in the cloud and how to manage the virtual components of the cloud. This knowledge will help you be a valuable member of projects dealing with cloud computing and virtualization. 3 credits.

CSCC 476 Server & Desktop Virtualization

In this course, you will gain an understanding of how server virtualization technologies can be implemented and properly maintained to support the needs of an organization. The purpose of this project is to demonstrate your ability to design an implementation plan for a virtualized network infrastructure, discuss the deployment strategy, and create a maintenance and training plan to ensure users are able to properly use the system. 3 credits.

CSCC 477 Advanced Database Querying and Analytics

This course takes a deeper look at database design and database queries. The course addresses storage, indexes, query processing, and query optimization. You will learn advanced table creation and how to use controls to enhance forms and improve functionality. You will optimize queries, download and install a SQL server, and gain extensive experience using hands-on exercises. You will also implement data security and data management and learn about concurrent access, locking, replication, and fragmentation. 3 credits.

CSCC 478 Business Intelligence and Data Analytics

The purpose of this course is to learn how to transform data into meaningful and useful information to assist in business analysis and data reporting processes. As an IT professional, the skills gained through the application of Business Intelligence and Data Analytics processes are valuable because they allow for more informed business decisions. 3 credits.

CSCC 497 Information Technology Capstone

In this course, you will have an opportunity to create a viable information technology plan for an enterprise-wide organization need that can be used as part of your portfolio. You will demonstrate what you learned in the competencies that you have already completed. Take some time to reflect on the previous competencies, as the information will be relevant as you develop your work in this course. It is recommended to review the Final Assessment outline and rubric prior to beginning the activities in this course so that you can familiarize yourself with the project requirements and expectations. 3 credits.