

COMPUTER SCIENCE (CSC)

CSC 1201 Introduction to Programming (4 Credits)

This course covers fundamentals of programming and program development techniques. Topics include data types, functions and methods, selection, repetition, strings, arrays, and file processing. Programming laboratory projects in a closed laboratory environment are supervised by the instructor. Three hours lecture; two hours of laboratory. Prerequisites: Eligibility for MATH 1600 or higher
Additional fees may apply
Previous: Legacy Equivalent(s): CSC* 104, CSC* 105, CSC* 106, CSC* 108, CSC* 115

CSC 1203 Python Fundamentals (3 Credits)

This is an introductory course in structured programming concepts using Python and assumes no prior programming experience (in any language). Topics include data types, input/output from both the console and data files, arithmetic, comparison and logical operators, selection statements, looping, functions and arrays. This course assumes students are comfortable working with simple algebraic equations. Students should also have basic file and folder management skills on a personal computer.
Previous: Legacy Equivalent(s): CSC* 124, CSC* 105

CSC 1205 Visual Basic (3 Credits)

This course uses Visual Basic.NET, an object-oriented/event-driven language, to teach programming concepts. Through hands-on application of the concepts presented in the lectures and tutorials, the student will learn Visual Basic.NET tools used to create applications that correspond to Windows standards. By the end of the course, the student will be able to design and code simple business applications and will be prepared for more advanced courses in programming using VB, C++, C#, Java, etc.
Additional fees may apply
Previous: Legacy Equivalent(s): CSC*126,CSC*205,CSC*206,CSC*208,CSC*211

CSC 1211 Java I (3 Credits)

This is a first Computer Programming course. The course emphasizes problem solving and sound programming practices. No previous programming experience is necessary. During this course students will learn how to construct algorithms and convert them into computer programs using typical flow control statements and data types, will learn basic object oriented techniques and contrast them with function-oriented techniques, will work with primitive, compound and user-defined data types, will learn how to define functions and pass parameters to them, will use simple console input and output and simple file input and output, and will learn fundamental software engineering testing techniques. The coursework includes a significant amount of homework assignments.
Prerequisites: Eligible for MATH 1600
Additional fees may apply
Previous: Legacy Equivalent(s): CSC* 127, CSC* 220, CSC* 105, CSC* 223, CSC* 113, CSC* 226

CSC 1231 Database Development and Design I (4 Credits)

Relational database development including data modeling, database design and database implementation. The student learns to create and alter tables, retrieve, insert, update, and delete data using a fourth generation language in a supervised laboratory setting. Uses of database technology, understanding DBMS and RDBMS concepts, normalizing designs, transforming of logical design into physical databases, embedded SQL, and the role of the DBA are also covered. Three hours lecture; two hours of laboratory. Students may not also earn credit for CSC 2235 nor CIS 1121.
Prerequisites: eligibility for ENG 1010
Additional fees may apply
Previous: Legacy Equivalent(s): CSC* 233

CSC 1271 Web Development and Design I (4 Credits)

This course provides the entry into the fast-moving website development industry. With its heavy hands-on mode of delivery, students will learn HTML 5, Cascading Style Sheets 3 (CSS 3), and be exposed to JavaScript. Adhering to standards, specifically from the World Wide Web Consortium (W3C) and the European Computer Manufacturers Association (ECMA), will play a dominant role in the creation of web pages that are both platform and browser independent. Programming laboratory projects in a closed laboratory environment are supervised by the instructor. Three hours lecture; two hours of laboratory.
Prerequisites: eligibility for ENG 1010
General Education: Creativity (CRTY)
Additional fees may apply
Previous: Legacy Equivalent(s): CST* 150, CST* 151, CST* 152, CST* 153, CST* 154

CSC 1273 Intro to Programming w/JavaScript (3 Credits)

This course teaches students the fundamentals of programming using JavaScript, a dynamic computer programming language most commonly used as a part of web pages. Students will gain an understanding of the fundamental concepts of programming and interactive design. This introductory course is suitable for students with no prior knowledge or programming experience.
Previous: Legacy Equivalent(s): CST* 200, CSC* 268, CSC* 116

CSC 2212 Java II (3 Credits)

This is a second course in computer programming using Java and assumes prior knowledge of Java. It emphasizes object-oriented techniques: using and creating classes and objects, inheritance, polymorphism, and Java interfaces. Other topics included models as abstractions of situations, exception handling, introduction to event-driven programming, recursion, elementary searching and sorting techniques. A programming project is required.
Prerequisites: CSC 1211
Additional fees may apply
Previous: Legacy Equivalent(s): CSC* 128, CSC* 220, CSC* 221, CSC* 229, CSC* 224

CSC 2213 Object Oriented Programming (4 Credits)

The features and tools of an object-oriented programming language like Java will be covered in detail. The object-oriented model will be used in developing object-based and object-oriented programs. Environment, classes, arrays, strings, inheritance, graphics, exceptions, I/O streams, and the APIs will be discussed. Programming laboratory projects in closed laboratory environment, supervised by the instructor, will be assigned. Three hours of class work, two hours of laboratory per week.
Prerequisites: CSC 1201
Additional fees may apply
Previous: Legacy Equivalent(s): CSC*226

CSC 2214 C++ Programming (4 Credits)

This course covers the main components of the C++ programming language. It begins with a treatment of basic programming constructs such as data types, selection and iteration, functions, arrays and input/output. It then moves onto more advanced OOP concepts such as objects and classes, instantiation, encapsulation, inheritance, polymorphism, overloading, pointers, and class libraries.

Prerequisites: Any programming class or permission of instructor
Previous: Legacy Equivalent(s): CSC*213, CSC*214, CSC*215

CSC 2215 C# Programming (4 Credits)

This course offers students the opportunity to extend their experience and programming skills in the area of .NET development. C# (pronounced C Sharp) is an object-oriented programming language with syntax similar to JAVA, C# is becoming increasingly popular with developers in the areas of Windows applications and web sites using relational databases. Using the Visual Studio Integrated Development Environment (IDE) the course will cover topics including arrays, methods, classes, objects, inheritance, and exception handling. File streams and database applications will also be an important part of the course.

Prerequisites: any programming course or permission of instructor
Previous: Legacy Equivalent(s): CSC* 217, CSC* 218

CSC 2216 Data Structures and Algorithms (4 Credits)

Common data structures used to represent information in an object-oriented environment. Topics include stacks, queues, references, linked lists, binary trees and hashing. Efficiencies of algorithms and their relations to data representations will be discussed. Programming laboratory projects are used for homework, quizzes and the final. This course is exclusively online with instruction and support provided via Blackboard. Three hours lecture; two hours of laboratory.

Prerequisites: CSC 2213

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 241

CSC 2217 Digital Design (4 Credits)

From how logic sets the basis for number systems and data representations to the building-blocks of computers and so much more, this course explores the elements of digital logic and design, digital circuitry, and the fundamentals of modern digital systems through hands-on design exercises.

Prerequisites: eligibility for MATH 1610

Additional fees may apply

Previous: Legacy Equivalent(s): CST* 145, EET* 252

CSC 2218 Software Engineering Methods (4 Credits)

This course explores the methods of software application development following the software processes required for the production of high-quality software. Techniques for creating documentation and using software development tools will be presented. Students will understand and apply the practices of lean and agile development, including stakeholder feedback, use cases, user stories, iterative development, stable/consumable code, continuous integration, test driven development, and value stream maps. Three hours lecture; two hours of laboratory.

Prerequisites: CSC 2213 or CSC 2252 or CSC 2272

Additional fees may apply

Previous: Legacy Equivalent(s): CSC*256, CSC*265

CSC 2219 Introduction to Bioinformatics (3 Credits)

This class is the intersection between volumes of genetic information, information technology, a bit of math and molecular biology. This is an introduction to the processes that are historically, currently and with some effort - possibly predictive expression information of DNA, RNA and proteins found in organisms. Molecular biology topics will be covered beyond the college biology course with the goal to help the student understand what information is available to any cell to adapt to stay alive. This class is designed as a projects course where students will work as individuals within teams to answer specific questions. The computing and mathematical processes that allow this work to be completed will be examined to appreciate the thought process required to address specific topics.

Prerequisites: CSC 1201 and MATH 1600 or higher

Corequisite: BIO 1210

Previous: Legacy Equivalent(s): CSC* 111

CSC 2232 Database Development II (4 Credits)

Reinforcement of topics covered in CSC 1231 and as well as introduction of new topics including: working with Views, how to code Scripts, how to code stored Functions, Procedures, and Triggers, Cursors and Exception Handling advanced calculations and multi-valued dependencies; and some current trends. A case study approach is used to apply concepts and methodologies. 3 hours lecture, 2 hours lab

Prerequisites: CSC 1231

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 234, CSC* 239

CSC 2233 Database Development III (4 Credits)

This course is designed to teach student the architecture (logical and Physical) structure of the Modern Database Management Systems. As each student is required to have a working knowledge of the Relational Database Model as well as SQL programming skills, this course focuses on the administration of a DBMS administrator including creation, management, maintenance, and operation of a database management system. 3 hours lecture, 2 hours lab

Prerequisites: CSC 2232

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 235, CSC* 239

CSC 2235 Introduction to Database Design (3 Credits)

An in-depth introduction to information management techniques with emphasis on data modeling and relational database design. Topics include conceptual data modeling, relational database design and normalization, database query languages, schema integration and integrity constraints, physical database design, and database usability issues. Using SQL, students will design and implement a database application, working from the E-R modeling stage through to the actual implementation. Students may not also earn credit for CIS 1231 nor CIS 1121.

Prerequisites: Any 1000 level programming course or higher

Previous: Legacy Equivalent(s): CSC* 121, CSC* 231, CSC* 238, CSC* 239

CSC 2251 Mobile Device Programming (3 Credits)

This course is designed as an introduction to mobile device programming. It is intended for students with an interest in learning to develop applications which will run on Android based smart phones. Prior programming experience is expected.

Prerequisites: Elective CPL or instructor permission

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 228

CSC 2252 Programming Mobile Devices I (3 Credits)

The course will introduce students to the various platforms in use on small and mobile devices. Platforms will include Apple iPhone and Google Android OS as well as web development in the context of the small device. Students will create cross-platform applications for each platform. 3 hours lecture, 2 hours lab.

Prerequisites: CSC 1201

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 262

CSC 2253 Programming Mobile Devices II (3 Credits)

This course enables the student to specialize in development on a single device. The device is chosen prior to offering the class. All aspects of the development are covered in the context of the device. Three hours lecture; two hours of laboratory.

Prerequisites: CSC 1201

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 263

CSC 2272 Web Development and Design II (4 Credits)

As a continuation of the Web Development and Design I class, this course continues the knowledge and skills development of a web developer. The course covers advanced CSS and JavaScript in detail. CSS skills include mobile first design principles, positioning elements, and CSS frameworks. JavaScript fundamentals such as data types, functions, arrays, loops, and conditional statements are included. Asynchronous JavaScript and XML (AJAX) is included. A large website project will be built. Three hours lecture; two hours of laboratory.

Prerequisites: CSC 1271

Additional fees may apply

Previous: Legacy Equivalent(s): CST*250, CST*252

CSC 2274 Client-Side Web Development (3 Credits)

This course examines the fundamentals of how to plan, design, and develop effective web pages that blend HTML (Hypertext Markup Language), CSS (Cascading Style Sheets), and client-side scripting. Students will explore how to create and enhance the user experience through the incorporation of various page elements, layout methods, formatting/styling techniques, text, graphics, images, multimedia, and scripting to produce an effective and functional, multi-page website.

Prerequisites: Any 1000 level programming course or higher

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 114, CSC* 227, DGA* 241, CSC* 268

CSC 2275 Web Development With PHP (4 Credits)

This course will introduce students to web development using PHP. Students will learn how to design web sites according to the MVC model. Object-oriented PHP will serve as the means by which the model component of the MVC-based web application is implemented. Session management will be used to deliver customized content. Students will also use the MySQL database in conjunction with PHP to create dynamic web applications. 3 hours lecture, 2 hours lab.

Prerequisites: CSC 2213

Additional fees may apply

Previous: Legacy Equivalent(s): CSC* 257, CSC* 258, CSC* 269

CSC 2276 XML for the Worldwide Web (4 Credits)

The course will build on students' knowledge of HTML and JavaScript in the rich world of XML. Topics include: creating well-formed and valid XML documents, Document Type Definitions (DTDs), namespaces, entities, XML Schemas, formatting using Cascading Style Sheets (CSS) and eXtensible Stylesheet Language (XSL), and transformations using XSL Transformations (XSLT). XQuery will be covered as well. Three hours lecture; two hours of laboratory.

Prerequisites: CSC 1201 or CSC 2272

Additional fees may apply

Previous: Legacy Equivalent(s): CST* 255