

IT - WEB/SOFTWARE DEVELOPMENT (152)

152-105 - Relational Databases

Explore relational database concepts and the use of Structured Query Language while working within a Database Management System (DBMS). Design, build and query a relational database and its tables. Manipulate a DBMS using concepts such as stored procedures and triggers.

3 Credit hours

36 Lecture hours

36 Lab hours

152-106 - Web Site Design

Design, develop and publish a website using industry standard software with an introduction to the code being produced by the software.

Enhance websites using advanced techniques with web forms, media queries and responsive design. Credit for Prior Learning Available

3 Credit hours

36 Lecture hours

36 Lab hours

152-107 - Graphics for the Web

Students will gain skills in optimizing graphics and photos to ensure efficient speed and mobile friendly sites. Students will gain skills in creating artboards and UI Kits as well as designing website mockups, backgrounds, navigation bars and buttons employing Adobe Photoshop. Credit for Prior Learning Available

2 Credit hours

18 Lecture hours

36 Lab hours

152-108 - Introduction to Programming

Explores basic concepts of programming including data types, variables, expressions, arrays, collections, strings, conditional statements, streams, functions, recursion, classes and objects. Students will employ these fundamental building blocks of programming to create projects.

3 Credit hours

36 Lecture hours

36 Lab hours

152-112 - Web Coding Technologies

Students are introduced to web design by learning to code Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) using text editor software. Focus on learning the HTML5 and CSS3 coding languages to produce a small website by gaining skills in formatting text, inserting images and backgrounds, positioning elements on the page for layout, apply styles, including inline, embedded and external styles. CSS3 best practices and browser support issues are also addressed. Students gain skill in using FTP software to upload files to a web server.

3 Credit hours

36 Lecture hours

36 Lab hours

152-113 - Web Programming Technologies

Develops skills in using programming concepts by employing the JavaScript language to create web-based applications. Code is also created to add animation and interactivity to a website. Addresses utilizing preexisting scripting sources, modifying scripts from other sources and creating original scripting features. Utilize skills gained to develop content-based mobile applications using JQuery. (Prerequisite: 152-112 Web Coding Technologies)

3 Credit hours

36 Lecture hours

36 Lab hours

152-114 - CSS Technologies

Explores new features of CSS3. Students will create selective styling, control font properties, control text properties, manipulate color and background properties and work with list and table properties. Also covers CSS box properties, style sheets, responsive design, mobile web app styling, page layout and CSS transformation. (Prerequisite: 152-112 Web Coding Technologies)

3 Credit hours

36 Lecture hours

36 Lab hours

152-115 - Design/Implementation/Maintenance Workflow

Perform tasks involved in the process and documentation of strategic planning, implementing and maintaining a website in a team-based environment. Addresses specific tasks in the website design, planning and development process such as project scope and proposals, budgeting, scheduling, specifications, obtaining domain names, registering websites, end-user analysis, statistics, testing and troubleshooting, training, and presentation topics. (Prerequisites: 152-106 Web Site Design or 152-112 Web Coding Technologies)

3 Credit hours

36 Lecture hours

36 Lab hours

152-116 - Content Management Systems

Builds skills in employing Content Management Systems (CMS) to create dynamically updated websites. Explores the fundamentals of planning dynamic websites, CMS database management, and developing CSS-controlled site templates. Examines procedures for performing backups and restores on websites, use of third party products and hosting options. (Prerequisite: 152-118 Database-Driven Web Sites)

3 Credit hours

36 Lecture hours

36 Lab hours

152-117 - Emerging Web Technologies and Trends

Evaluates new technologies, emerging trends, new standards and specifications in the web development field by performing application of these in the website design/development process. Investigation and use of resources and tools for maintaining up-to-date skills in the field will be done. Self-directed learning skills will be developed. (Prerequisite: 152-113 Web Programming Technologies)

1 Credit hours

36 Lab hours

152-118 - Database-Driven Web Sites

Students will build a dynamic, data-driven, interactive website employing PHP and MySQL. Students gain skills in coding PHP variables, arrays, loops, functions, conditional statements to build dynamic web pages with a MySQL database. Students write PHP scripts that use Create, Read, Update, and Delete (CRUD) to display data from a database on web pages. Students explore blueprint applications; structure and interact with databases; build, validate and process forms; and regulate user-access with passwords. Cover best practices and demonstrate refactoring techniques for improving existing code. (Prerequisite: 152-106 Web Site Design or 152-112 Web Coding Technologies)

3 Credit hours

36 Lecture hours

36 Lab hours

152-120 - Web and Mobile Internship

Provides students an opportunity to apply skills learned in prior program coursework to internship situations. Emphasis is on seeking a job, applying skills to job tasks, adapting to company culture, modeling the core abilities, and demonstrating online collaboration and communication. Employment-ready work samples are required upon course entry. Advised to enroll in last semester of program. (Prerequisite: Completion of or concurrent enrollment in 152-121 Object-Oriented Programming or 152-124 e-Commerce: Designing and Marketing Web Sites) Credit for Prior Learning Available

3 Credit hours

18 Lecture hours

144 Other hours

152-121 - Object-Oriented Programming

Designs and outlines the logic and structure of programming. Builds skills in using Object Oriented Programming (OOP) concepts such as the use of Application Protocol Interfaces (API's), user-defined classes, simple data types, control structures, storage allocation, scope and simple data structures. Students will develop algorithms to solve programming problems and use debugging techniques to test solutions. Writes program documentation for use in developing simple to complex Web applications. (Prerequisite: 152-118 Database-Driven Web Sites)

3 Credit hours

36 Lecture hours

36 Lab hours

152-122 - Migrating to Native Platforms

Builds skills using a third-party software to port Progressive Web Apps (PWAs) to native platforms. Explores native Software Development Kits (SDKs) for various mobile platforms for native application development. Examines the processes required for distribution to mobile marketplaces. (Prerequisites: 152-173 Coding for iOS for Web Application Development; 152-174 UX/UI Design for iOS for Web Application Development; 152-175 Coding for Android for Web Application Development; 152-176 UX/UI Design for Android for Web Application Development)

3 Credit hours

36 Lecture hours

36 Lab hours

152-123 - PHP

In this course, you will begin to gain the knowledge you need to begin a path in becoming a PHP developer by gaining skills in employing the basic programming elements such as variables, methods, and loops; along with gaining experience with the most popular design pattern used in creating dynamic websites: MVC. (Prerequisite: Completion of or concurrent enrollment in 152-118 Database Driven Websites)

3 Credit hours

36 Lecture hours

36 Lab hours

152-124 - e-Commerce: Designing and Marketing Web Sites

Students investigate e-commerce concepts, technologies and solutions. Students will be incorporating e-commerce technologies to sell products and services into a website project. Students will investigate, plan and implement online marketing strategies including SEO, SEP, traffic building, and marketing techniques. (Prerequisite: 152-118 Database-Driven Web Sites)

3 Credit hours

36 Lecture hours

36 Lab hours

152-131 - ASP.net

Introduces the principles of creating Web based programs in ASP.NET. Students will write, test, debug and execute programs. Students use the Visual Studio.NET development suite to: interact with a database, create a user interface using HTML and ASP's Razor Pages, and design and secure a model-view-controller based website. (Prerequisites: 152-105 Relational Databases; 152-112 Web Coding Technologies; 152-139 C# Development)

3 Credit hours

36 Lecture hours

36 Lab hours

152-132 - SQL

Gain beginning to advance levels skills in using SQL to create select statements to query and retrieve information from databases. Students will also develop using SQL for CRUD (create, read, update and delete) tasks, backup and import databases as well as exploring best practices in SQL. (Prerequisite: 152-105 Relational Databases)

3 Credit hours

36 Lecture hours

36 Lab hours

152-137 - Java Programming

Introduces an overview of Java and explains its role in the computing environment. Students learn the fundamentals of the Java language, including classes and objects. Highly recommended students have prior programming experience. (Prerequisite: 152-108 Introduction to Programming)

2 Credit hours

18 Lecture hours

36 Lab hours

152-138 - Advanced Java Programming

Advances skills programming in Java. Students will gain experience in employing use of streams, XML (Extensible Markup Language) in Java, programming network connections, using the JDBC (Java Database Connectivity) API (application programming interface), including use of the Date and Time Package API and ending with learning to manipulate graphics using Java. (Prerequisites: 152-105 Relational Databases; 152-137 Java Programming)

2 Credit hours

18 Lecture hours

36 Lab hours

152-139 - C# Development

Introduces the principles of programming in C#. Students will write, test, debug and execute programs. Students use the Visual Studio.NET development suite to create control structures, methods, arrays, data files and object classes. Online sections: On-campus lab instruction available. (Prerequisite: 152-108 Introduction to Programming)

3 Credit hours

36 Lecture hours

36 Lab hours

152-142 - Software Developer Capstone

Provides students with the opportunity to apply competencies and skills acquired throughout their study in the Information Technology - Software Developer program. Students will work in a team environment to design, integrate and develop software applications and documentation based on real-world scenarios. Technical skill attainment is measured through demonstration of program outcomes in this final-semester capstone course. (Prerequisites: Completion of or concurrent enrollment in 152-138 Advanced Java Programming; 152-148 Systems Analysis and Implementation)

3 Credit hours

18 Lecture hours

72 Lab hours

152-143 - Advanced SQL

In this course, students will explore T-SQL implementation and standard. Students will gain skills in using this standard to perform tasks involving queries, sub-queries, table expressions, set operators, data modifications, temporal tables, transactions and programmable objects. (Prerequisite: 152-132 SQL)

3 Credit hours

36 Lecture hours

36 Lab hours

152-147 - Systems Analysis and Design

Examines the process of developing information systems that use hardware, software, data, processes and people to support a company's business objectives. Provides fundamentals for a potential systems analyst to develop business systems that will support operations, improve productivity and provide information so managers can make sound business decisions. (Prerequisite: 152-126 Introduction to Systems Analysis)

3 Credit hours

54 Lecture hours

152-148 - Systems Analysis and Implementation

Designed as a capstone experience, this course provides hands-on development and implementation of the case study project that was designed in the prerequisite class 152-147 Systems Analysis and Design. Students work as a team to code and implement a case study project. This working system finalizes the System Development Life Cycle.

(Prerequisite: 152-147 Systems Analysis and Design)

3 Credit hours

18 Lecture hours

72 Lab hours

152-172 - Web Site Security

Explores security threats and countermeasures for websites. Explore use of software and tools to examine how major security issues happen and strategies for prevention. Major security threat topics include but not limited to: Cross-Site Request Forgery, Cross-Site Scripting (XSS), Header Injection and URL Redirection, Exploiting a Sites File Upload Feature, Poisoning Sender Policy Framework, XML Injections and Command, HTML and SQL Injection Vulnerabilities. Students work with the Kali Linux platform on a virtual machine. (Prerequisite: 150-107 IT Fundamentals 1)

3 Credit hours

36 Lecture hours

36 Lab hours

152-173 - Coding for iOS Web Application Development

Develops foundational skills in coding and programming languages used in iOS web application development. Focus is on employing gained skills to develop a Progressive Web App (PWA) for use on the iOS platform.

(Prerequisite: Completion of or concurrent enrollment in 152-174 UX/UI Design for iOS for Web Application Development)

3 Credit hours

36 Lecture hours

36 Lab hours

152-174 - UX/UI Design for iOS Web Application Development

Employs principles of User Experience (UX) and User Interface (UI) design for the iOS market. Students will apply design principles in creating user experiences, as well as develop hands-on skills with software applications related to UX/UI design work. Explores the current psychologies behind end user mobile application design.

3 Credit hours

36 Lecture hours

36 Lab hours

152-175 - Coding for Android Web Application Development

Develops foundational skills in coding and programming languages used in Android mobile application development. Focus is on using Android Studio to develop an Android Web mobile application for traditional and web-based delivery. (Prerequisite: Completion of or concurrent enrollment in 152-176 UX/UI Design for Android for Web Application Development)

3 Credit hours

36 Lecture hours

36 Lab hours

152-176 - UX/UI Design for Android Web Application Development

Employs principles of User Experience (UX) and User Interface (UI) design for the Android market. Students will apply design principles in creating user experiences, as well as develop hands on skills with software applications related to UX/UI design work. Explores the current psychologies behind end user mobile application design.

3 Credit hours

36 Lecture hours

36 Lab hours

152-177 - Introduction to VR Applications

Explores Software Development Kits (SDK's) that are used to create virtual reality experiences for Android and iOS apps. Students examine how SDK's simplify common Virtual Reality (VR) development tasks and explore the smart phone as a VR platform. Students will examine the common VR tasks such as the use of smart phones to display 3D scenes with binocular rendering, tracking and reacting to head movements, and interaction with apps through the trigger input. Students will also explore steps for building apps that display 3D scenes, adapting an existing 3D app for VR and/or building individual VR experiences from scratch. Students will apply best practices for designing apps for VR.

(Prerequisites: 152-173 Coding for iOS for Web Application Development; 152-174 UX/UI Design for iOS for Web Application Development)

3 Credit hours

36 Lecture hours

36 Lab hours