

# IT APPLICATION DEVELOPMENT&WEB (152)

Information provided includes course descriptions by subject only.  
For complete 2022-2023 programs/academic plans, please refer to  
Academic Programs (<http://catalog.blackhawk.edu/academics/>).

## 152-119 High Level Scripting

Credits: 1-3

Students apply the skills of high-level scripting in this course that covers syntax, variables, conditionals and functions, along with a focus on scripting for the web with Javascript.

**Aid Code:** 10 - undefined.  
**Pre-requisites:** 152-195

Complete Course Listing

## 152-125 Design Basics for Front-end Development 2

Credits: 1-2

This course will further analyze design elements of web pages and evaluate more advanced level layout creation and customization with scripting.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-126 Introduction to Programming

Credits: 1-2

Designed for students with little or no prior programming experience, this course introduces the fundamental concepts of object oriented programming. Students engage in topics which include integers, strings, and variables, and objects. Students will analyze the core elements of programs, run them at the command line, spend some time debugging, and create a simple program of their own. Students will examine the history of programming languages. They will analyze the standards of basic programming language and learn the standards for a simple programming language.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-127 Web Servers and Web Server Administration

Credits: 1-2

In this course, students will prepare an environment for, and then install and configure, an open source web server. They will configure their server and install services to use for projects during the remainder of the semester. Students will also use DNS to connect a URL to the virtual server space they've created.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-128 Markup Basics 2

Credits: 1-2

This course is a continuation of markup basics and will focus on how to create interactive web pages, showcase tabular data effectively, and use markup code to make content more accessible.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-130 Project & Framework Management

Credits: 1-2

In this course, students will evaluate various tools used in web development to plan, organize, and execute digital projects. Storyboarding, wireframes, and usability testing will be demonstrated. Students will explore the use of various project management tools.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-131 Version Control

Credits: 1-2

This course has the students explore the basics of software version control (SVC), including process management. Students will evaluate a brief history of SVC and analyze the fundamental concepts of check-in/checkout, forking, merging, commits, and distribution. Students will create a repository and manage files within it.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-132 Cybersecurity

Credits: 1

Provides an overview of the importance of web site and server security awareness and data confidentiality through basic aspects of information security. This course introduces students to common methods of securing data. Presents best practices in access control and password policies on the web.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 152-133 Advanced Systems Documentation

Credits: 1-2

This lecture/lab course will focus on technical writing and documentation skills. Hands-on work will include writing and editing business letters and memos, persuasive documents, technical reports and html documentation. The course will culminate in a short research paper and oral presentation.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (150-120) and (801-195 or 801-136 or Test Waived-College Degree)

Complete Course Listing

### 152-134 Responsive Design

**Credits:** 1-2

Students analyze the mobile first responsive design method, outlining the basics of creating web sites that are functional cross platform and device. As they become comfortable with the methods used, students will learn to code for accessibility.

**Aid Code:** 10 - undefined.

Complete Course Listing

### 152-142 Programming

**Credits:** 1-3

Students in this course will identify and apply the foundations of programming on the LAMP stack (Linux, Apache, MySQL, and PHP), from a general overview of a server-side programming language. Students will learn to program with PHP and create functional web pages with server side scripting.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (152-119) or (152-199 and 152-202 and 152-205)

Complete Course Listing

### 152-143 Introduction to Java Programming

**Credits:** 1-3

Introduction to Java Programming introduces programming and object-oriented design concepts using the Java programming language. Students examine Java programming basics and use a text editor in a development environment. Design concepts and programming tools will be integrated with an emphasis on practical business solutions.

**Aid Code:** 10 - undefined.

Complete Course Listing

### 152-145 Advanced Java Programming

**Credits:** 1-3

This course is a continuation of Introduction to Java Programming. Students will further analyze inheritance, exception handling, files, database access, advanced GUI applications and array lists.

**Aid Code:** 10 - undefined.

**Pre-requisites:** 152-143

Complete Course Listing

### 152-147 Relational Database Development

**Credits:** 1-3

Relational Database Development is a lecture/lab class split into two parts: 1) A general overview of database theory, including: relational database management systems (RDBMSs) and normalization. 2) The fundamentals of the structured query language (SQL) data definition language (DDL) and data manipulation language (DML) commands, utilizing client/server based database software. For IT-Web Analyst/ Programmer students, 152-163 (Relational Database Design) is a recommended pre req for this course.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (152-163) and (804-133)

Complete Course Listing

### 152-148 Relational Database Coding

**Credits:** 1-3

Students will engage in hands-on training, utilizing a relational database management system (e.g., MySQL) in a client/server web based environment which uses PHP on the server side. Students will analyze advanced structured query language (SQL) commands and concepts, and web site development utilizing the PHP programming language.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (152-157) and (152-182)

Complete Course Listing

### 152-149 Secure Coding

**Credits:** 1-3

Secure coding involves concepts such as: 1) The validation of computer program input. 2) The heeding of computer compiler warnings. 3) The internal and external sanitization of any and all computer program data. 4) The adherence to the principle of least privilege. 5) The adoption of a secure coding standard. The Secure Coding course will teach students how to adhere to practices such as these and others to build secure code from the onset of an information technology project.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (152-148) and (152-158) and (152-161)

Complete Course Listing

### 152-150 Systems Analysis and Design

**Credits:** 1-3

Systems Analysis & Design is a lecture/lab course for second year students, intended to introduce the concepts involved in a small-to-medium sized information systems project from inception to implementation. Traditional analysis and design methodologies as well as object-oriented methodologies will be covered. Throughout the life cycle of the analysis and design process, Microsoft Project will be used. Students will use Microsoft Visio as a tool to diagram various components of the system during the analysis phase. Additional concepts covered will be verbal and written communication with users and team members, professional behavior, professional attire, problem identification, and problem solving. Systems Analysis and Design will draw on knowledge obtained from previous classes, and require the student to synthesize and apply that knowledge.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (150-127)

Complete Course Listing

### 152-156 Social Media

**Credits:** 1-3

Students will explore the uses of social media and the tools that are available to manage it. They will then learn about the integration of social media with web sites and explore the options in social media for advertising, including creating ads and identifying audiences. Finally, students will explore open Application Programming Interfaces (APIs) within social media software and build a functioning program that connects to a social media platform.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-158 Advanced Website Development****Credits:** 1-3

In this course, students will engage in the development of client-side web sites using frameworks such as Bootstrap to simplify development, allow development of responsive web sites, and greatly increase the appeal and functionality of the site. Students will analyze other concepts which include Content Management systems, such as Git and Github.

**Aid Code:** 10 - undefined.**Pre-requisites:** (152-182)

Complete Course Listing

**152-161 Web Application Development Using ASP.NET****Credits:** 1-3

Students develop Microsoft ASP.NET applications that deliver dynamic content to the Web. An emphasis is placed on server-side programming and the role ASP.NET plays. As part of this course, students create Web forms with server controls, display dynamic data from a database using Microsoft ADO.NET, read XML configuration files and learn to debug ASP.NET web pages.

**Aid Code:** 10 - undefined.**Pre-requisites:** (152-147) and (152-167)

Complete Course Listing

**152-163 Relational Database Design & Development****Credits:** 1-3

This course gives students a knowledge base in database concepts for design and development. Students will design and then develop a database in a virtual environment, and write code to manipulate the data in the database created.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-164 Design and Implementation Projects****Credits:** 1-3

This capstone course is designed to have the student utilize all concepts learned in this program in a real world application setting. Students work with a team to develop an integrated Information Solution for a large scale project. Students will be involved in defining their own skills in both technical and cooperative team interaction areas.

**Aid Code:** 10 - undefined.**Pre-requisites:** (152-161) and (152-148) and (152-145)

Complete Course Listing

**152-167 AJAX and JavaScript Website Development****Credits:** 1-3

Students in this course are introduced to the basics of DHTML, JavaScript, and the XMLHttpRequest call. Students create web sites using JavaScript and AJAX to enable them to be responsive and feature-rich.

**Aid Code:** 10 - undefined.**Pre-requisites:** (152-157) and (152-163)

Complete Course Listing

**152-178 Markup Basics 3****Credits:** 0.5-1

This advanced level course will focus on the most recent developments to markup basics and explore it's uses.

**Aid Code:** 10 - undefined.**Co-requisites:** (152-196)

Complete Course Listing

**152-181 Supervisory Occupational Experience-Web Analyst****Credits:** 1-2

Micro Programmer Internship prepares student for the transition from the classroom to the work place. Students will be employed in actual jobs in their field. They will use this opportunity to apply learned concepts and skills in practical situations and acquire the knowledge and experience of current techniques, methods, and theories in a data processing environment. The intern's progress will be monitored and evaluated by the sponsoring employer and a BTC Internship Advisor. The desired outcome of the course is to qualify the student for eventual employment in an entry-level IT position.

**Aid Code:** 10 - undefined.**Pre-requisites:** 152-150

Complete Course Listing

**152-182 Web Analyst Field Study****Credits:** 0.5-1

The Web Analyst Field Study is a course designed to equip the student with the skills necessary to plan and execute an active job search. Topics covered include: resumes; personal data files; letters of application; and interviewing techniques. Students will prepare a strategy for finding and obtaining a position that best fits their goals and interests. Students will also cover the organization of a typical data processing department.

**Aid Code:** 10 - undefined.**Co-requisites:** (152-147) and (152-142) and (152-167)

Complete Course Listing

**152-191 Secure e-Commerce Concepts****Credits:** 1-3

This course is a review of Internet/Worldwide Web/e-Commerce concepts, including Internet development, internetworking principles, Internet services, Web programming, site administration, and business and security concepts, including both human and technological factors.

**Aid Code:** 10 - undefined.

Complete Course Listing

### 152-192 Designing Secure Websites

**Credits:** 1-3

This course is designed to educate students about the security issues of the Worldwide Web, Web servers and Web applications. The learner will be introduced to client and server-side security principles and programming. At course completion, the student will be able to define, design and implement a secure Web site. Successful completion of 152-191 "Secure e-Commerce Concepts" is highly recommended prior to this course.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### 152-193 Client/Server Systems Security

**Credits:** 1-3

This course provides an overview of the most critical topic in the Information Assurance arena: secure data exchange between internetworked systems. Topics include client/server security system design concepts; developing a database security and audit plan; system design and development; user-, group-, and application-level permissions; data integrity enhancement and maintenance; and the role of the database administrator. A methodology for anticipating, detecting, reacting to, and response to network attacks will be a significant part of the course material.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (150-151 and (152-143

**Co-requisites:** 150-151) or 152-143)

[Complete Course Listing](#)

### 152-195 Markup Basics 1

**Credits:** 0.5-1

Students will analyze the foundation of web pages - markup languages. Students analyze the basics of how web browsers read markup language to display web pages. Students will organize text and add images or videos to create useful and engaging web pages.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### 152-196 Markup Basics 2

**Credits:** 0.5-1

This course is a continuation of 152-195 Markup Basics and will focus on how to create interactive web pages, showcase tabular data effectively, and use markup code to make content more accessible.

**Aid Code:** 10 - undefined.

**Co-requisites:** 152-195

[Complete Course Listing](#)

### 152-197 Design Basics for Front-end Development 1

**Credits:** 0.5-1

This course will analyze the elements of good design while also learning the basics of design and style coding. Students will use scripting to add color and background images and stylize fonts.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### 152-198 Design Basics for Front End Development 2

**Credits:** 0.5-1

This course will further analyze design elements of web pages and evaluate more advanced level layout creation and customization with scripting.

**Aid Code:** 10 - undefined.

**Co-requisites:** 152-197

[Complete Course Listing](#)

### 152-199 Fundamentals of High-Level Scripting

**Credits:** 0.5-1

Student apply the basics of high-level scripting in this course that covers syntax, variables, conditionals and functions, along with a focus on scripting for the web with Javascript.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### 152-200 Design Basics for Front End Development 3

**Credits:** 1

Students will investigate advanced scripting techniques related to CSS. They will analyze updates to current standards, and develop skills in actively staying connected with new versions of software standards.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### 152-201 Programming Language History and Exploration

**Credits:** 0.5-1

Students will examine the history of programming languages. They will analyze the standards of basic programming language, learn the standards for a simple programming language, and put those skills to use in writing simple programs.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### 152-202 Intermediate High-Level Scripting

**Credits:** 0.5-1

This course provides an overview and analysis of the JavaScript application architecture and student analyze solutions like jquery, Node, Javascript with HTML5, authentication, authorization, and modern JS Libraries.

**Aid Code:** 10 - undefined.

**Co-requisites:** 152-199

[Complete Course Listing](#)

### 152-210 Web Server Administration

**Credits:** 0.5-1

In this course, students will configure their server and install services to use for projects during the remainder of the semester. Students will also use DNS to connect a URL to the virtual server space they've created.

**Aid Code:** 10 - undefined.

**Co-requisites:** 152 209

[Complete Course Listing](#)

**152-211 Project & Framework Management 1****Credits:** 0.5-1

In this course, students will evaluate various tools used in web development to plan, organize, and execute digital projects. Storyboarding, wireframes, and usability testing will be demonstrated.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-212 Project & Framework Management 2****Credits:** 0.5-1

In this course, students will continue their knowledge and use of tools for managing and streamlining digital projects, analyzing which tools are best suited for various situations.

**Aid Code:** 10 - undefined.**Co-requisites:** 152-211

Complete Course Listing

**152-213 Version Control 1****Credits:** 0.5-1

This course has the students explore the basics of software version control (SVC), including process management. Students will evaluate a brief history of SVC and analyze the fundamental concepts of check-in/checkout, forking, merging, commits, and distribution.

**Aid Code:** 10 - undefined.**Co-requisites:** 152-212

Complete Course Listing

**152-215 Content Management Systems 1****Credits:** 0.5-1

This course will review the many available options for content management systems, both proprietary and open source. Students will evaluate the options for systems and identify the best solution for different scenarios.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-216 Content Management Systems 2****Credits:** 0.5-1

In this course, students will install and configure an open source content management system, along with user training and roll out.

**Aid Code:** 10 - undefined.**Co-requisites:** 152-215

Complete Course Listing

**152-218 Search Engine Optimization****Credits:** 0.5-1

In this course, students will identify what search engine optimization (SEO) is and why its an important skill for front end developers to possess. Students will analyze free and paid keyword search tools, identify keywords rank, and generate a keyword plan.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-222 Front End Framework****Credits:** 0.5-1

Student will develop the skills and knowledge they need to code with front end framework.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-223 Mobile Application Development****Credits:** 0.5-1

Students in this course identify and apply learning of how mobile technology works, including tools for development, specifications, and implementation.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-224 Emerging Technologies Research****Credits:** 0.5-1

In this course, students will identify a problem that can be solved by technology and research the options for solving the problem using a specified programming language or web tool.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-225 Programming 1****Credits:** 0.5-1

Students in this course identify and apply the foundations of programming on the LAMP stack (Linux, Apache, MySQL, and PHP), from a general overview of a server-side programming language..

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-234 Resume and Portfolio Development for Web Developers****Credits:** 0.5-1

Students review the body of work they've completed during their time in the program and use this review to develop a full portfolio website. From this website portfolio review, students will also engage in resume writing and employment readiness skills.

**Aid Code:** 10 - undefined.

Complete Course Listing

**152-235 Emerging Technologies Capstone****Credits:** 1-3

In this capstone course, students will use the skills learned in the program to identify a digital solution to a complex problem. They will then outline the problem, find a solution, present their findings for peer review and collaboration.

**Aid Code:** 10 - undefined.**Co-requisites:** 152-224

Complete Course Listing

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**152-400 Basic Website Building-12.5**

**Credits:** 1.2

This course will teach basic website building concepts including buying a domain, selecting a platform, how to add content to a site and how to update your website.

**Aid Code:** 47 - undefined.

Complete Course Listing

**152-401 CyberSecurity-2**

**Credits:** .2

This course will teach basic website cybersecurity concept, including key concept in cybersecurity, ransomware, and preventing/mitigating cyberattacks.

**Aid Code:** 47 - undefined.

Complete Course Listing