

# SOFTWARE DEVELOPMENT (SWDV)

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## SWDV 120 Introduction to Programming

(3 Credits, Fall/Spring)

Theory and practice of creating console and GUI applications. Design, coding, and documentation skills are taught as well as algorithmic problem-solving using visual objects and structured programming methods. PREREQ: Software Development major and completion of Units 1-4 (or placement into Unit 5 or higher) of MATH 095. COREQ: SWDV 125, SWDV 130, and SWDV 135. (1 lecture hours, 4 lab hours, 3 credits)

## SWDV 125 Intermediate Programming

(3 Credits, Fall/Spring)

Creating and debugging object-oriented applications. Topics include classes, inheritance, exception handling, events, and file access. COREQ: SWDV 120, SWDV 130, and SWDV 135. (1 lecture hours, 4 lab hours, 3 credits)

## SWDV 130 Introduction to Web Application Development

(3 Credits, Fall/Spring)

Essential structures of HTML and CSS, including coding conventions and best practices. Includes an exploration of relationships between HTML and other tagged-text languages. COREQ: SWDV 120, SWDV 125, and SWDV 135. (1 lecture hours, 4 lab hours, 3 credits)

## SWDV 135 Web Styling

(3 Credits, Fall/Spring)

Comprehensive study of website styling including properties and styles related to colors, typography, page layouts, customized cursors, links, specificity, inheritance, and the box model. Includes an examination of open-source frameworks. COREQ: SWDV 120, SWDV 125, and SWDV 130. (1 lecture hours, 4 lab hours, 3 credits)

## SWDV 140 Intermediate Web Application Development

(4 Credits, Fall/Spring)

Creating, editing, importing, and exporting CSS based websites using WYSIWYG authoring tools. Designing and implementing websites using images, animations, and client-side scripts. PREREQ: SWDV 120, SWDV 125, SWDV 130, and SWDV 135. COREQ: SWDV 143 and SWDV 152. (2 lecture hours, 4 lab hours, 4 credits)

## SWDV 143 Client-Side Frameworks

(4 Credits, Fall/Spring)

Comprehensive overview and application of client-side scripting technologies and frameworks. Emphasis is placed on adapting and extending traditional markup and client-side scripting languages, creating user interfaces, and connecting software components. PREREQ: SWDV 120, SWDV 125, SWDV 130, and SWDV 135. COREQ: SWDV 140 and SWDV 152. (2 lecture hours, 4 lab hours, 4 credits)

## SWDV 152 Systems Analysis and Design

(4 Credits, Fall/Spring)

Examines popular system methodologies to organize the systems development process. Emphasis is placed on techniques to conduct the planning and analysis phases, requirements documentation, test case development, modeling, and prototyping through development of a validated set of requirements. PREREQ: SWDV 120, SWDV 125, SWDV 130, and SWDV 135. COREQ: SWDV 140 and SWDV 143. (2 lecture hours, 4 lab hours, 4 credits)

## SWDV 210 Introduction to Server-Side Programming

(4 Credits, Fall/Spring)

Introduction to dynamic website development. Topics include web server development and real-world implementation considerations using open-sourced languages. PREREQ: SWDV 140, SWDV 143, and SWDV 152. COREQ: SWDV 220 and SWDV 235. (3 lecture hours, 2 lab hours, 4 credits)

## SWDV 220 Fundamentals of Database Systems

(4 Credits, Fall/Spring)

Relational database design and data modeling from a conceptual and practical viewpoint. Intermediate SQL language syntax, query design, and database normalization. Data security concepts and integrity with an introduction to query optimization. PREREQ: SWDV 140, SWDV 143, and SWDV 152. COREQ: SWDV 210 and SWDV 235. (3 lecture hours, 2 lab hours, 4 credits)

## SWDV 235 Advanced Web Application Development

(4 Credits, Fall/Spring)

Exploring dynamic websites focusing on e-commerce and server-side scripting languages. PREREQ: SWDV 140, SWDV 143, and SWDV 152. COREQ: SWDV 210 and SWDV 220. (2 lecture hours, 4 lab hours, 4 credits)

## SWDV 265 Mobile Development

(4 Credits, Fall/Spring)

Introduction to mobile development tools, devices, operating systems, and browsers. PREREQ: SWDV 210, SWDV 220, and SWDV 235. COREQ: SWDV 271 and SWDV 280. (3 lecture hours, 2 lab hours, 4 credits)

## SWDV 271 Game Development

(4 Credits, Fall/Spring)

Overview and application of development tools for mobile and desktop games, real-time simulations, and visualizations. Emphasis is placed on design, lighting, materials, and animation to build and package playable games. PREREQ: SWDV 210, SWDV 220, and SWDV 235. COREQ: SWDV 265 and SWDV 280. (3 lecture hours, 2 lab hours, 4 credits)

## SWDV 280 Collaborative Development

(3 Credits, Fall/Spring)

Introduction to formal test strategies, collaborative tools, and project management. Serves as a capstone to previous coursework and concepts. Preparation for workforce entry. PREREQ: SWDV 210, SWDV 220, and SWDV 235. COREQ: SWDV 265 and SWDV 271. (2 lecture hours, 2 lab hours, 3 credits)

## SWDV 293 Software Development Internship

(1-3 Credits, Fall/Spring/Summer)

Supervised application of technical knowledge and skills in community business to gain practical work experience. An Internship Registration Form must be completed and turned into a One Stop Student Services location before a student may register for an internship course. PREREQ: PSYC 140, SWDV 210, SWDV 220, SWDV 235, permission of department's internship coordinator, and submission of a completed Internship Registration Form. PRE/COREQ: SWDV 265, SWDV 271, and SWDV 280. (0 lecture hours, 3 lab hours, 1 credits)

*Refer to How to Read Course Descriptions for an explanation of elements found in the course descriptions above.*