SOFTWARE DEVELOPMENT (SWDV)

SWDV 105 Introduction to Programming
(4 Credits, Fall/Spring)
An introduction to the 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. PRE/COREQ: SWDV 110 and placement into MATH 123 or concurrent enrollment in any GEM 3 course. *(2 lecture hours, 4 lab hours, 4 credits)*

SWDV 110 Intermediate Programming
(4 Credits, Fall/Spring)
An in-depth approach to creating and debugging object-oriented applications. Topics include classes, inheritance, exception handling, events, and file access. PRE/COREQ: SWDV 105. *(2 lecture hours, 4 lab hours, 4 credits)*

SWDV 115 Introduction to Web Application Development
(4 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. *(2 lecture hours, 4 lab hours, 4 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 105, SWDV 110, and SWDV 115. 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 105, SWDV 110, and SWDV 115. 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 105, SWDV 110, and SWDV 115. 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 programming using high-level programming language which includes selection statements, loops, arrays, functions, classes, objects, object-oriented design, database access, and server-side frameworks. Other topics include construction, compilation, and debugging of complete programs that demonstrate basic constructs, object-oriented design principles, database access, and server-side programming. PREREQ: SWDV 140, SWDV 143, and SWDV 152. COREQ: SWDV 220. *(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 submitted before students are able to register for an internship course. (Pass/No Pass) PREREQ: SWDV 152 or PSYC 140, PERM/INST, and submission of a completed Internship Registration Form. *(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.