Software Development
Bachelor of Science Degree Program

It’s no secret that software now powers nearly every aspect of our lives. Companies in many industries need specialized experts to concept and develop these applications to stay competitive and reach consumers. And thanks to the availability of app stores and other distribution methods, the opportunities for independent developers have increased as well.

In the Software Development bachelor’s program at Full Sail University, you’ll explore the design, development, and implementation of these software-based solutions and products for business, entertainment, and consumer markets. Your courses will help you develop a comprehensive understanding of topics including programming languages and skills, software design, and various software development methodologies.

You’ll also work alongside your peers as you create and develop real applications – while learning about the different needs of small programming projects and large-enterprise software-systems projects. Throughout the program, you’ll be working on your own software product – which will serve as your final project – while building the critical-thinking and professional skills necessary to enter this industry.

Graduates of this degree may apply to continue their education with the:
Game Design
Master of Fine Arts Degree Program
Media Design
Master of Fine Arts Degree Program

* IF YOU’RE INTERESTED IN ANOTHER EDUCATIONAL TRACK, PLEASE CONTACT OUR ADMISSIONS DEPARTMENT TO EXPLORE YOUR OPTIONS.
Software Industry Foundations

In the Software Development bachelor’s program, you begin by learning the organizational aspects of software design, development, and implementation. You’ll also explore system requirements, basic data structures, software architecture, algorithms, and the application of engineering tools.

Beginning with basic C++, you’ll build fundamental programming skills, starting with the design of simple programs, to using techniques and methods used in object-oriented programming (OOP) languages. You’ll also learn the principal advantages of object-oriented programming compared to procedural programming techniques.

Software Engineering & Design

Midway through the Software Development program, you’ll begin your first software application project, starting with preproduction planning and architecture analysis, then proceeding to the development stage.

In the preproduction phase, you’ll determine how to design a software application solution for a client by establishing goals in a comprehensive plan. You’ll then be introduced to different stages of development, including developing, testing, and integration, and will also learn the basics of life-cycle management. Throughout the program, you’ll be immersed in software industry workflow and best practices, and will learn project management fundamentals to prepare you for the real world.
Areas of Focus

Data Structure & System Design

Another key element of the Software Development bachelor’s program centers on the role of data and information systems and their integration.

You’ll examine principles of information systems, including the issues and structures common in their construction. You’ll also explore the management of databases and information systems and the discrete and logical structures for information systems analysis and design.

Through coursework in database systems and file structure, you’ll learn the foundational aspects of data storage and retrieval, examining relational, hierarchic, and network approaches to database models as well as system architectures.
Areas of Focus

Capstone

Your capstone is comprised of four course sections: Frameworks, Methods and Techniques, Design of Software Products, Development of Software Products, and Delivery of Software Products. These courses take you through a real-world production process of a software application, from research and development, to concept development and design, to software construction, and ultimately, testing, release, and maintenance.
Objective
In addition to a foundational understanding of programming skills, today’s software developers require a breadth of knowledge and skills to compete in this dynamic industry. The goal of the Software Development Bachelor of Science Degree Program is to prepare students for this field by developing students’ software design and production capabilities in addition to encouraging lifelong learning and critical-thinking skills through threaded research, analysis, and professional development. Through project-based learning, students will be able to create their own software-application project as well as articulate and deliver these projects utilizing appropriate communication strategies and business models.

Overview
The Software Development Bachelor of Science Degree Program introduces the learner to the complex and ever-changing world of today’s software developers and software engineers. The goal of this degree program is to educate students on the design, development, and implementation of software-based solutions and other software products for the business, entertainment, and consumer markets. The degree program provides the learner with a comprehensive understanding of programming languages and skills, software design skills, and various software development methodologies. Students will engage in software development and application creation by participating in various projects throughout the degree program that will require them to understand the differences between small programming projects and large-enterprise software-systems projects. Through this hands-on curriculum, students will be able to design and develop their own software project for emerging technologies. They will also gain the critical-thinking and professional skills necessary for effective software development.
Software Development:
Bachelor of Science Degree Program

Program Core

Code Course Credit Hours
DSC 2101 Applied Human-Computer Interaction 4.00
DSC 2102 Introduction to Interactive Systems 4.00
DSC 2103 Business Intelligence Systems 3.00
DSC 2431 Capstone Project I: Frameworks, Methods, and Techniques 4.00
DSC 2432 Capstone Project II: Design of Software Products 4.00
DSC 2433 Capstone Project III: Delivery of Software Products 4.00
DSC 2434 Capstone Project IV: Development of Software Products 4.00
DSC 2501 Computer Organization and Architecture 4.00
DSC 2513 Data Structures & The Database 4.00
DSC 2515 History of Computing Technology 3.00
DSC 2516 Introduction to Software Applications 4.00
DSC 2601 Object-Oriented Programming 4.00
DSC 2911 Operating Systems 3.00
DSC 3190 Overview of the Media Design and Technology Industries 3.00
DSC 3191 Programming I 4.00
DSC 3192 Programming II 4.00
DSC 3431 Software Engineering Process & Project Management 4.00
DSC 3461 Software Quality & Business 4.00
DSC 3513 Software Project I: Preparation & Architecture 4.00
DSC 3516 Software Project II: Development 4.00
DSC 3517 Software Text & Quality Assurance 4.00

Program Descriptions

Course Core

Code Course Credit Hours
DSC 2431 Introduction to Human-Computer Interaction Core
DSC 2432 Capstone Project I: Frameworks, Methods, and Techniques 4.00
DSC 2433 Capstone Project II: Design of Software Products 4.00
DSC 2434 Capstone Project III: Delivery of Software Products 4.00
DSC 2435 Capstone Project IV: Development of Software Products 4.00

Course Descriptions

Course Core

DSC 2431 Introduction to Human-Computer Interaction

The course introduces students to the core concepts of human-computer interaction through an immersive, hands-on experience. Students will learn about user-centered design, cognitive psychology, and technology. Topics covered include user-centered design, mobile device constraints, and interaction styles. Students will be able to apply derived recommendations to software development through appropriate research and design. Within the capstone project, students will learn key industry skills and will leverage their coursework through the application of HCI principles.

Course Core

DSC 3431 Software Engineering Process & Project Management

This course introduces students to the software engineering process and project management. Students will learn about the key processes involved in software development, including software project planning, estimation, and scheduling. Students will also learn about software project management tools and techniques. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Course Core

DSC 3513 Software Project I: Preparation & Architecture

This course provides an introduction to the software development process. Students will learn about the key activities involved in software development, including project planning, estimation, and scheduling. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Course Core

DSC 3516 Software Project II: Development

This course continues the software development process, focusing on the development of software products. Students will learn about the key activities involved in software development, including software project planning, estimation, and scheduling. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Course Core

DSC 3517 Software Text & Quality Assurance

This course covers software quality assurance and testing. Students will learn about the key activities involved in software development, including software project planning, estimation, and scheduling. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Building Blocks of Information Systems

Course Core

DSC 2431 Introduction to Human-Computer Interaction

The course introduces students to the core concepts of human-computer interaction through an immersive, hands-on experience. Students will learn about user-centered design, cognitive psychology, and technology. Topics covered include user-centered design, mobile device constraints, and interaction styles. Students will be able to apply derived recommendations to software development through appropriate research and design. Within the capstone project, students will learn key industry skills and will leverage their coursework through the application of HCI principles.

Course Core

DSC 3431 Software Engineering Process & Project Management

This course introduces students to the software engineering process and project management. Students will learn about the key processes involved in software development, including software project planning, estimation, and scheduling. Students will also learn about software project management tools and techniques. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Course Core

DSC 3513 Software Project I: Preparation & Architecture

This course provides an introduction to the software development process. Students will learn about the key activities involved in software development, including project planning, estimation, and scheduling. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Course Core

DSC 3516 Software Project II: Development

This course continues the software development process, focusing on the development of software products. Students will learn about the key activities involved in software development, including software project planning, estimation, and scheduling. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.

Course Core

DSC 3517 Software Text & Quality Assurance

This course covers software quality assurance and testing. Students will learn about the key activities involved in software development, including software project planning, estimation, and scheduling. The course covers the development of software products, including the software development life cycle (SDLC) and software project management best practices.
SDV 5817
Course Description
Overview of the Media Design and Technology Industries
The Overview of the Media Design and Technology Industries Course covers the interrelationship of the visual and interactive storytelling. Students will explore a variety of visual and interactive forms, media types, programming languages and organizational structures, and learn how to make compelling creative narratives. Weekly assignments will encourage students to explore industry practices in applications, such as designing interactive games, websites, and mobile apps. The course will also examine the software architecture and technology industries in order to identify key trends and tools that will assist them in their professional careers.
Course Outline
Concepts of OOP Implementing Industry-Standard Techniques
OOP Analysis
Total credit hours 4.00 Course length 4 weeks

SDV 5818
Course Description
The Object-Oriented Programming Course explores techniques and methods related to object-oriented programming (OOP) and the design and implementation of object-oriented systems. Students are introduced to the core OOP concepts such as inheritance, encapsulation, polymorphism, and class-based programming. Students will learn how to use OOP concepts to design and implement object-oriented systems and gain a deeper understanding of object-oriented programming concepts.
Course Outline
Overview of OOP C++ and Object-Oriented Programming Concepts of OOP Preparing to Program Contemplating Change Contemporary Digital Culture and HCI Total credit hours 2.00 Course length 4 weeks

SDV 5814
Course Description
Introduction to Software Applications II
This course is a continuation of Software Applications I, and students will continue their study of software design and implementation. Topics include the design and implementation of user interface elements, database design, and software architecture. Students will explore the implementation of object-oriented systems using both procedural and object-oriented programming languages. Students will also learn how to use OOP concepts to design and implement object-oriented systems.
Course Outline
Overview of OOP Concepts of OOP Preparing to Program Contemplating Change Contemporary Digital Culture and HCI Total credit hours 2.00 Course length 4 weeks

DBS 4201
Course Description
Operating Systems
In the Operating Systems course, students will gain an understanding of operating systems and their role in creating a user-friendly environment. Students will learn about the design and implementation of operating systems, including topics such as process management, memory management, and file systems. Students will also learn about the implementation of software architecture and design.
Course Descriptions

Program Core

SDV 4233 Software Project II: Development

Course Outline
Software Lifecycle Management
Software Programming and Testing

Total credit hours
Course length
4.00
4 weeks

Test and Quality Assurance

The Software Test and Quality Assurance course explores software project management and testing techniques and practices to ensure software quality. Students will learn the basic concepts of software quality assurance and will develop a working understanding of the requirements for testing activities. Students will study the basic concepts of software quality assurance and will develop an understanding of the requirements for testing activities. Students will apply the basic concepts of software quality assurance and will develop an understanding of the requirements for testing activities.

Total credit hours
Course length
4.00
4 weeks

General Education

ENGL 1101 English Composition I

The English Composition I course focuses on teaching the fundamentals of English composition. Students will learn how to write clear, concise, and effective essays. Students will practice writing skills, including grammar, punctuation, and style. Students will apply their writing skills to real-world situations.

Total credit hours
Course length
4.00
4 weeks

MAT 1103 Discrete Mathematics

The Discrete Mathematics course introduces students to the fundamental concepts of discrete mathematics. Students will learn about sets, relations, functions, graphs, trees, and algorithms. Students will apply these concepts to solve real-world problems.

Total credit hours
Course length
4.00
4 weeks

PHYS 1103 Fundamentals of Physics

The Fundamentals of Physics course introduces students to the fundamental concepts of physics. Students will learn about mechanics, electricity, magnetism, fluids, thermodynamics, and waves. Students will apply these concepts to solve real-world problems.

Total credit hours
Course length
4.00
4 weeks

Departmental Courses

ENG 3433 Linear Algebra

The Linear Algebra course focuses on teaching the fundamentals of linear algebra. Students will learn about vectors, matrices, and determinants. Students will apply these concepts to solve real-world problems.

Total credit hours
Course length
4.00
4 weeks

DEP 1013 Psychology of Play

The Psychology of Play course focuses on teaching the fundamentals of psychology. Students will learn about the concept of play and how it relates to human behavior. Students will apply their knowledge to solve real-world problems.

Total credit hours
Course length
4.00
4 weeks

GEN 2420 Technical Writing

The Technical Writing course focuses on teaching the fundamentals of technical writing. Students will learn about how to write technical documents and apply these skills to solve real-world problems.

Total credit hours
Course length
4.00
4 weeks

Course Descriptions