

SOFTWARE DEVELOPMENT, A.A.S.

The Software Development degree prepares students to design, develop, and maintain software through the implementation of established software design constructs in standard programming languages.

For more information about Computer and Information Science, please visit the program page (<http://www.cod.edu/cis/>).

Degree Requirements

Field of Study Code: CIS.AAS.SOFTW

Code	Title	Credits
Program Requirements		
CIS 1150	Understand Computers/Information/Systems	3
CIS 1180	Data Communication & Networking	3
CIS 1230	Database Application	3
CIS 1400	Programming Logic and Technique	4
CIS 1410	Introduction to Human Computer Interaction	3
CIS/CIT 1450	Intro to Linux/Unix Operating Systems	3
CIS 1640	Cybernetic Safety and Security	3
CIS 2770	Introduction to System Analysis & Design	3
PHILO 1114	Business Ethics	3
ENGLI 1101	English Composition I	3
CIS 2790	Software Development Capstone Project	4
CIS/CIT 1140	Cloud Essentials	3
Emphasis Courses		
Complete at least 1 Emphasis and any additional CIS level 2000 course for a total of 15 credit hours:		15
ai emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/ai/)		
ar/vr emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/ar-vr/)		
vb .net emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/vb/)		
linkurl (https://catalog.cod.edu/programs-study/computer-information-science/.net-emphasis/)		
c++ emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/c++/)		
python emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/python/)		
ios emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/ios/)		
android emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/android/)		
java emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/java/)		
database emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/database/)		
web emphasis/ (https://catalog.cod.edu/programs-study/computer-information-science/web/)		

General Education

Math - Level 1000 or above	3
Physical/Life Science - Level 1000 or above	3
Social and Behavioral Science	3
Select one of the following:	3
SPEEC 1100	Fundamentals of Speech Communication
SPEEC 1120	Small-Group Communication
SPEEC 1150	Introduction to Business Communication

Total Credits 65

General Education Requirements

For general education requirements for the A.A.S. degree, please visit the A.A.S. degree catalog page (<https://catalog.cod.edu/associate-degree-programs/associate-applied-science-degree/>).

Emphases

AI Emphasis

This emphasis focuses design and development of Artificial Intelligence (AI).

Code	Title	Credits
CIS 1655	AI Technical Essentials	3
CIS 2531	Introduction to Python Programming	4
CIS 2532	Advanced Python Programming	4
CIS 2640	Introduction to Machine Learning (ML)	4
or CIS 2641	Introduction to Natural Language Processing (NLP)	

Total Credits 15

AR/VR Emphasis

This emphasis focuses on the creation, maintenance, and support of software application in the AR/VR environment

Code	Title	Credits
CIS 2212	3D Game Development	4
CIS 2214	Augmented Reality and Virtual Reality Development	4
CIS 2541	C++ Language Programming	4

Total Credits 12

VB .NET Emphasis

This emphasis focuses on the creation, maintenance, and support of software applications in the VB .NET environment.

Code	Title	Credits
CIS 1310	HTML and CSS	3
CIS 1510	Graphical User Interface Programming	4
CIS 2350	Introduction to ASP.NET	4
CIS 2510	Adv Graphical User Interface Programming	4

Total Credits 15

C#.NET Emphasis

This emphasis focuses on the creation, maintenance, and support of software applications in the C# .NET environment.

Code	Title	Credits
CIS 1310	HTML and CSS	3
CIS 2350	Introduction to ASP.NET	4
CIS 2561	Introduction to C# .NET	4
CIS 2562	Advanced C# Programming	4
Total Credits		15

C++ Emphasis

This emphasis focuses on the creation, maintenance, and support of software applications in the C++ environment.

Code	Title	Credits
CIS 2541	C++ Language Programming	4
CIS 2542	Adv C++ With Data Structure Application	4
Total Credits		8

Python Emphasis

This emphasis focuses on the creation, maintenance, and support of software applications in the Python environment.

Code	Title	Credits
CIS 2531	Introduction to Python Programming	4
CIS 2532	Advanced Python Programming	4
Total Credits		8

iOS Emphasis

This emphasis focuses on the creation, maintenance, and support of software application in the iOS environment.

Code	Title	Credits
CIS 2590	Swift Programming Language	4
CIS 2592	iOS Application Development	4
CIS 2594	Advanced iOS Application Development	4
Total Credits		12

Android Emphasis

This emphasis focuses on the creation, maintenance, and support of software application in the Android environment.

Code	Title	Credits
CIS 2571	Introduction to Java	4
CIS 2593	Android Application Development	4
CIS 2595	Advanced Android Application Development	4
Total Credits		12

Java Emphasis

This emphasis focuses on the creation, maintenance, and support of software application in the Java environment.

Code	Title	Credits
CIS 2571	Introduction to Java	4
CIS 2572	Collections in Java	4
Total Credits		8

Database Emphasis

This emphasis focuses on the creation, maintenance, and support of databases.

Code	Title	Credits
CIS 2710	Database Management	4
CIS 2720	Structured Query Language (SQL) I	3
CIS 2730	Enterprise Database Development	3
Total Credits		10

Web Emphasis

This emphasis focuses on the creation, maintenance, and support of software application in the Web environment.

Code	Title	Credits
CIS 1310	HTML and CSS	3
CIS 2320	JavaScript Programming	4
CIS 2330	Introduction to XML	3
CIS 2360	Intro to PHP Programming Language	4
Total Credits		14