Computer Information Systems, AAS

Employment opportunities for programmer analysts and related positions continue to be strong and growing. Key areas include object-oriented programming, database management, client-server applications, security and mobile development.

JCCC's associate of applied science in computer information systems focuses on skills needed for entry-level software development and related positions. The program is designed to prepare professionals with skills that are applicable to different computing systems. With its emphasis on practical experience and on currency in software and curriculum, the program has much to offer the information systems professional who wishes to upgrade or broaden his or her knowledge of the field.

(Major Code 2930; State CIP Code 11.0201)

• Programming Program web page (http://www.jccc.edu/academics/credit/programming/)

Associate of Applied Science Degree

First Semester

CS 134	Programming Fundamentals	4
or CIS 142	Beginning Programming using Python	
ENGL 121	Composition I*	3
MATH 171	College Algebra*	3
OR		
Any Precalculus/Calculus Course		
WEB 110	HTML and CSS	3
Social Science and/or Economics Elective		3
Note: An Economics course is recommended. Transfer students should take a social science/economics course that transfers to their chosen school.		
Total Hours		16

See all AAS general education electives (http://catalog.jccc.edu/degreerequirements/associate-applied-science/)

Second Semester

CIS 204	UNIX Scripting and Utilities*	3
CS 200	Concepts of Programming Algorithms Using C++*	4
or CS 201	Concepts of Programming Algorithms using C#*	
or CS 205	Concepts of Programming Algorithms using Java*	
Note: Transfer students should take the language that transfers to their chosen school. Java or C# is recommended for most career students. C		

11 141	Introduction to Networks	3
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
or ENGL 123	Technical Writing I*	
Humanities Elective		3
Note: PHIL 124 or PHIL 1	43 is recommended. Transfer students should take a humanities course that transfers to their chosen school.	
Total Hours		16

See all AAS general education electives (http://catalog.jccc.edu/degreerequirements/associate-applied-science/)

Third Semester

Technical Elective (see below)		
CIS 242	Introduction to System Design and Analysis*	3
CIS 260	Database Management*	4
CS 235	Object-Oriented Programming Using C++*	4

or CIS 240 Advanced Topics in Java* First or Second Five Week Session: WEB 114 Web Scripting: JavaScript I* 2 Total Hours 36 Fourth Semester Fechnical Elective (see below) 38 Note: WEB 124 is recommended, a minimum of 6 total hours is required for Technical Electives. CIS 264 Application Development and Programming* 44 CIS 275 Web-Enabled Database Programming* 44 CS 250 Basic Data Structures using C++* 47 Total Hours 58 ACCT 121 Accounting I 38 CIS 201 Introduction to Information Systems* 38 CIS 208 Mobile Application Development* 38 CIS 209 Mobile Application Development* 38 CIS 201 Introduction to Information Systems* 38 CIS 203 Mobile Application Development* 38 CIS 291 Information Systems Internship* 38 CIS 291 Information Systems Internship* 38 CIS 291 Information Systems Internship* 38 CIS 291 Discrete Structures I' 38 CS 251 Discrete Structures I' 38 CS 253 Object-Oriented Programming Using C++* 48 CS 250 Basic Data Structures using Java* 48 CS 250 Basic Data Structures using C++* 48 CS 250 Basic Data Structures Using Java* 48 CS 250 Basic Data Structures Using Java* 48	or CS 236	Object-Oriented Programming Using C#*	
First or Second Five Week Session: WEB 1141 Web Scripting: JavaScript I* 2 Total Hours 16 Fourth Semester Technical Elective (see below) 3 Note: WEB 124 is recommended, a minimum of 6 total hours is required for Technical Electives. CIS 264 Application Development and Programming* 4 CIS 275 Web-Enabled Database Programming* 4 CIS 255 Basic Data Structures using C++** 4 Total Hours 15 Technical Electives ACCT 121 Accounting I 3 Technical Electives ACCT 121 Accounting I 3 CIS 208 Mobile Application Development* 4 ACS 208 Mobile Application Development* 4 CIS 208 Advanced Topics in Java* 4 CIS 209 Advanced Topics in Java* 4 CIS 291 Information Systems Internship* 3 CIS 292 S	or CIS 240		
Total Hours 16 Fourth Semester Technical Elective (see below) 3 Note: WEB 124 is recommended, a minimum of 6 total hours is required for Technical Electives. CIS 264 Application Development and Programming* 4 CIS 275 Web-Enabled Database Programming* 4 CIS 255 Basic Data Structures Using Java* Total Hours 15 Technical Electives ACCT 121 A Ccounting I 3 CIS 201 Introduction to Information Systems* 3 CIS 208 Mobile Application Development* 4 CIS 208 Mobile Application Development* 4 CIS 240 Advanced Topics in Java* 4 CIS 240 Advanced Topics in Java* 4 4 CIS 292 Special Topics: 1 4	First or Second Five Week Session:		
Fourth Semester Technical Elective (see below) 3 Note: WEB 124 is recommended, a minimum of 6 total hours is required for Technical Electives. 3 CIS 264 Application Development and Programming* 4 CIS 275 Web-Enabled Database Programming* 4 CS 250 Basic Data Structures using C++* 6 or CS 255 Basic Data Structures Using Java* 15 Technical Electives ACCT 121 Accounting I 3 CIS 201 Introduction to Information Systems* 3 CIS 208 Mobile Application Development* 4 CIS 209 Mobile Application Development* 4 CIS 240 Advanced Topics in Java* 4 CIS 270 Information Systems Intenship* 3 CIS 291 Independent Study* 17 CIS 292 Special Topics:* 14 CIS 293 Special Topics:* 14 CIS 236 Object-Oriented Programming Using C++* 4 CIS 256 Basic Data Structures Using Java* 4 <td< td=""><td>WEB 114</td><td>Web Scripting: JavaScript I*</td><td>2</td></td<>	WEB 114	Web Scripting: JavaScript I*	2
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Note: WEB 124 is recommended, a minimum of 6 total hours is required for Technical Electives. CIS 264 Application Development and Programming* 4 CIS 275 Web-Enabled Database Programming* 4 CS 250 Basic Data Structures using C++* or CS 255 Basic Data Structures Using Java* Total Hours Technical Electives Accounting I 3 Signal Electives Accounting I 3 CIS 201 Introduction to Information Systems* 3 CIS 208 Mobile Application Development* 4 CIS 208 Mobile Application Development* 4 CIS 240 Advanced Topics in Java* 4 CIS 270 Information Systems Internship* 3 CIS 291 Independent Study* 1-7 CIS 292 Special Topics.* 1-4 CIS 293 Special Topics.* 1-4 CIS 211 Discrete Structures II* 3 CIS 235 Object-Oriented Programming Using C++* 4 CIS 250 <t< td=""><td>Fourth Semester</td><td></td><td></td></t<>	Fourth Semester		
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CIS 275 Web-Enabled Database Programming* 4 CS 250 Basic Data Structures using C++* 4 or CS 255 Basic Data Structures Using Java* 15 Technical Electives ACCT 121 Accounting I 3 CIS 201 Introduction to Information Systems* 3 CIS 208 Mobile Application Development* 4 CIS 240 Advanced Topics in Java* 4 CIS 270 Information Systems Internship* 3 CIS 291 Independent Study* 1.7 CIS 292 Special Topics:* 1.4 CS 210 Discrete Structures It* 3 CS 211 Discrete Structures II* 3 CS 236 Object-Oriented Programming Using C++* 4 CS 236 Object-Oriented Programming Using C#* 4 CS 255 Basic Data Structures using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	Note: WEB 124 is recommended, a r	minimum of 6 total hours is required for Technical Electives.	
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ACCT 121 Accounting I 3 CIS 201 Introduction to Information Systems* 3 CIS 208 Mobile Application Development* 4 CIS 240 Advanced Topics in Java* 4 CIS 270 Information Systems Internship* 3 CIS 291 Independent Study* 1-7 CIS 292 Special Topics:* 1-4 CS 210 Discrete Structures I* 3 CS 211 Discrete Structures II* 3 CS 235 Object-Oriented Programming Using C++* 4 CS 236 Object-Oriented Programming Using C#* 4 CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	Total Hours		15
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CIS 291 Independent Study* 1-7 CIS 292 Special Topics:* 1-4 CS 210 Discrete Structures I* 3 CS 211 Discrete Structures II* 3 CS 235 Object-Oriented Programming Using C++* 4 CS 236 Object-Oriented Programming Using C#* 4 CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CIS 240	Advanced Topics in Java*	4
CIS 292 Special Topics:* 1-4 CS 210 Discrete Structures I* 3 CS 211 Discrete Structures II* 3 CS 235 Object-Oriented Programming Using C++* 4 CS 236 Object-Oriented Programming Using C#* 4 CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CIS 270	Information Systems Internship*	3
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CS 211 Discrete Structures II* 3 CS 235 Object-Oriented Programming Using C++* 4 CS 236 Object-Oriented Programming Using C#* 4 CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CIS 292	Special Topics:*	1-4
CS 235 Object-Oriented Programming Using C++* 4 CS 236 Object-Oriented Programming Using C#* 4 CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CS 210	Discrete Structures I*	3
CS 236 Object-Oriented Programming Using C#* 4 CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CS 211	Discrete Structures II*	3
CS 250 Basic Data Structures using C++* 4 CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CS 235	Object-Oriented Programming Using C++*	4
CS 255 Basic Data Structures Using Java* 4 DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CS 236	Object-Oriented Programming Using C#*	4
DS 210 Introduction to Data Science 3 DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CS 250	Basic Data Structures using C++*	4
DS 220 Data Visualization 3 DS 230 SQL for Data Analysis 3	CS 255	Basic Data Structures Using Java*	4
DS 230 SQL for Data Analysis 3	DS 210	Introduction to Data Science	3
•	DS 220	Data Visualization	3
DS 240 Introduction to Statistical Programming 3	DS 230	SQL for Data Analysis	3
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DS 260 Data Mining* 3	DS 260	Data Mining*	3
DS 270 Introduction to Machine Learning* 3	DS 270	Introduction to Machine Learning*	3
DS 280 Big Data Architecture 3	DS 280	Big Data Architecture	3
WEB 124 Web Scripting: JavaScript II* 2	WEB 124	Web Scripting: JavaScript II*	2
WEB 126 Technical Interface Skills* 3	WEB 126	Technical Interface Skills*	3
WEB 128 Server Scripting: PHP with MySQL* 2	WEB 128	Server Scripting: PHP with MySQL*	2

Total Program Hours: 63