

PROGRAMMING CERTIFICATE

Division: Business and Computer Information Systems

PROGRAM CODE: 2C36698

The **Programming Certificate** is designed to prepare students for an entry-level job in the programming field. Students receive a grounding in a breadth of current programming languages and must select electives focusing on web programming, Java and mobile applications programming, database management, game programming or data analytics. A grade of C or better is required in each course taken. This certificate requires 17-21 units.

OUTCOME 1: Demonstrate proficiency in basic computer software design and programming to design, create, and analyze business requirements.

https://www.curricunet.com/fullerton/reports/program_report.cfm?programs_id=1301

Code	Title	Units
Required Courses (10 units):		
CIS 201 F	Introduction to Python Programming	3
CIS 223 F	Programming in C++	3
CIS 226 F	Java Programming I	4
Select one area of emphasis listed below:		7-11
<i>Restricted Electives - Java and Mobile Applications (10-11 units)</i>		
CIS 212 F	Robotic Programming	3
CIS 228 F	Java Programming II	4
CIS 240 F	Intro to Mobile Applications	4
CYBR 230 F	Scripting Fundamentals	3
OR		
<i>Restricted Electives - Web Programming (9 units)</i>		
CIS 154 F	JavaScript Programming I	3
CIS 155 F	Web Page Multimedia Design I	3
CIS 230 F	PHP and MySQL Programming	3
OR		
<i>Restricted Electives - Database Management (8-9 units)</i>		
CIS 130 F	Systems Analysis and Design	3
CIS 142 F	Database I	3
CIS 213 F	Python for Data Analytics	2
CIS 215 F	Excel Data Analy Big Data	3
OR		
<i>Restricted Electives - Game Programming (9 units)</i>		
CISG 110 F	Introduction to Programming for Computer Games	3
CISG 160 F	C# for Game Programming	3
CISG 165 F	C++ for Game Programming	3
CISG 170 F	Java for Game Programming	3
CISG 185 F	Artificial Intelligence in Game Programming	3
CISG 190 F	Programming Multiuser Online Games	3
OR		
<i>Restricted Electives - Data Analytics (7-8 units)</i>		
CIS 113 F	Intro to Big Data Analytics	2
CIS 210 F	Advanced Python Programming	3
CIS 213 F	Python for Data Analytics	2
CIS 215 F	Excel Data Analy Big Data	3
Total Units		17-21

Program Level Student Learning Outcomes