

COMPUTER PROGRAMMING AND ANALYSIS

Associate in Science Degree (CIP# 1511020101)

This program is designed for students who wish to develop skills in computer software development and analysis. The core courses provide knowledge and hands-on training in the foundations of computer technology, computer programming, programming analysis and design, and Web applications development. This program is designed for students who seek immediate employment, and it provides the option for transfer to a Bachelor's degree.

Students are strongly encouraged to consult a career program advisor in the department office for assistance in determining the best education plan for their career goals.

Although scheduling may not always provide for the following progression of courses, students should use the foundation, intermediate and advanced course sequence as a guide in program planning.

All degree-seeking students must satisfy entry testing requirements and satisfactorily complete all mandatory courses in reading, student success, mathematics, English, and English for Academic Purposes in which the student is placed.

Alternative Ways to Earn Credit toward this Degree

Graduates of specific programs at Orange Technical College and Osceola Technical College, as well as other institutions may be eligible to receive college credit for courses in this program. You may also be eligible to receive credit toward this degree if you have earned one of the approved Gold Standard industry certifications or Career Pathways credit. To learn more about Valencia's award of credit options, visit <https://valenciacollege.edu/academics/programs/as-degree/credit-industry-certification-agreements.php> (<http://valenciacollege.edu/asdegrees/transferagreements.cfm>). Eligible students should contact the Career Program Advisor in their academic department for more information about the requirements for the award of credit.

College Credit Technical Certificates

The Computer Programming A.S. degree also offers the following college credit certificate programs. These certificates can put you on the fast-track to reaching your career goals. They are designed to equip you with a specialized skill set for entry-level employment or to upgrade your skills for job advancement. Most can be completed in one year or less, and all of the courses in the certificates are embedded in the A.S. degree. You can earn the certificates as you progress through your A.S. Degree or as a separate, stand-alone credential. Click on the Certificate tab at the top of the page for more information about the certificates that are offered.

Computer Programming Specialist (18 credits) (CIP # 0511020103)

- Computer Programming Specialization
- Web Development Specialization

Computer Programming (33 credits) (CIP # 0511020200)

- Computer Programming Specialization
- Web Development Specialization

Start Right

Degree-seeking students enrolling at Valencia for the first time will have a limited range of courses from which to choose for their first 18 college-level credits. Within the first 18 college credit hours, you will be required to take ENC1101 (3 credits), and if applicable, SLS 1122 (3 credits) and a mathematics course appropriate to your selected meta-major (3 credits). The remaining courses will be chosen from the General Education Core Courses in humanities (3 credits), science (3 credits), or social science (3 credits), and/or the introductory courses within the A.S. degree programs. For specific courses see the *Foundation Courses* on the "Program Requirements" tab. For course sequencing recommendations, see your Career Program Advisor or create an education plan by logging into Atlas, clicking on the LifeMap tab and clicking My Education Plan.

Potential Careers

- Computer Programmer
- Senior Programmer
- Programmer Analyst
- Systems Programmer
- Programmer Specialist
- Web Programmer
- Web Developer
- Web Master

Salary & Earnings Information

For career information related to this program, please visit O*Net OnLine (<https://www.onetonline.org/>).

Contacts

Future Students

To learn more information about this program, contact Enrollment Services at enrollment@valenciacollege.edu or call 407-582-1507 or visit valenciacollege.edu/computer-programming-and-analysis/ (<https://net1.valenciacollege.edu/future-students/degree-options/associates/computer-programming-and-analysis/>).

Current Students

Contact the campus Career Program Advisor below for more information:

East Campus

Dave Brunick, Program Chair: 407-582-2360
dbrunick@valenciacollege.edu
 Launa Sickler, Career Program Advisor: 407-582-2504
lsickler@valenciacollege.edu

West Campus

Joan Alexander, Program Chair: 407-582-1542
jalexander@valenciacollege.edu
 Jon Sowell, Career Program Advisor, West Campus: 407-582-1973
jsowell@valenciacollege.edu

Osceola Campus

Denise Ross, Program Chair: 407-582-4818
deross@valenciacollege.edu
 Roxana Boulous, Career Program Advisor: 407-582-4231
rboulous1@valenciacollege.edu (mgonzalez10@valenciacollege.edu)

Internship and Workforce Services

If you need assistance with job resources or in locating an internship, please visit: valenciacollege.edu/internship (<http://valenciacollege.edu/internship/>).

Program Outcomes

- Analyze technical problems as related to customer requirements.
- Design a logical plan for the development of a software solution.
- Implement software solutions including documentation.
- Evaluate software problems, plans, and solutions for correctness and appropriateness.
- Communicate effectively with technical and non-technical audiences.

Foundation Courses

GEB 1011	INTRODUCTION TO BUSINESS	3
COP 1000C	INTRODUCTION TO PROGRAMMING CONCEPTS ⁺¹	3
CTS 1131C	COMPUTER MAINTENANCE ESSENTIALS	3
CGS 2100C	COMPUTER FUNDAMENTALS AND APPLICATIONS	3
COP 2822C	WEB SITE DEVELOPMENT ⁺	3
ENC 1101	FRESHMAN COMPOSITION I ^{+*~}	3
MAC 1105	COLLEGE ALGEBRA ^{+*~2}	3
SLS 1122	NEW STUDENT EXPERIENCE	3

Intermediate Courses

CTS 1142C	INFORMATION TECHNOLOGY PROJECT MANAGEMENT ^{*P1}	3
CGS 2091C	SOCIAL, LEGAL AND ETHICAL ISSUES IN INFORMATION TECHNOLOGY	3
CGS 2545C	DATABASE MANAGEMENT SYSTEMS ⁺	3
Humanities	See Gen. Ed. Core or Institutional Requirement [~]	3
Social Science	See Gen. Ed. Core Requirement [~]	3
Select one of the following:		3
COP 2220C	C PROGRAMMING ^{+*}	
COP 2800C	JAVA PROGRAMMING ^{+*}	
COP 2360C	C# PROGRAMMING ^{+*}	

Advanced Courses

COP 2830C	SCRIPTING LANGUAGES [*]	3
CIS 2910C	IT CAPSTONE ^{+*3}	3
CIS 2942	INTERNSHIP IN COMPUTER PROGRAMMING ^{+*}	1
or CGS 2650	SOCIAL NETWORKING FOR JOB SEARCH	
Computer Programming and Analysis Elective		8
Select one of the following:		3
COP 2224C	C++ PROGRAMMING ^{+*}	
COP 2362C	ADVANCED C# PROGRAMMING ^{+*}	
COP 2805C	ADVANCED JAVA PROGRAMMING ^{+*}	

Total Credit Hours 60

Computer Programming and Analysis Electives

Any course in the course description section of the Valencia catalog with the subject prefix of CAP, CET, CGS (except CGS 1060), CIS, COP, COT, or CTS.

- + This course must be completed with a grade of C or better.
- * This course has a prerequisite; check description in Valencia catalog.
- ~ This is a general education course.
- 1 Students with prior programming experience who pass a waiver examination will be allowed to substitute a higher-level course for this course.
- 2 Students who were not required to take MAC 1105 COLLEGE ALGEBRA may use a more advanced MAC, or approved equivalent, course to meet the math requirement.
- 3 CIS 2910C IT CAPSTONE is taken in the last semester or with department approval and satisfactory completion of all mandated discipline specific foundation and intermediate technical courses.

(GR) Denotes a Gordon Rule course.

Notes:

Specialized courses may not be offered every session or on every campus.

Expand your career opportunities with a Bachelor's Degree in Computing Technology and Software Development from Valencia. This degree builds on your skills, and prepares you for a highly specialized, in-demand career as a software developer. For more information, go to: Bachelor's Degree in Computing Technology and Software Development (<http://catalog.valenciacollege.edu/degrees/bachelorofscience/computingtechnologyandsoftwaredesign/>). Students who wish to continue their education should consult with a Career Program Advisor to discuss transfer options and requirements, and determine the best education plan for their career goals.

Students wishing to transfer credits from this program to another institution must accept responsibility for securing approval from the transfer institution for acceptance of this degree.

Computer Programming with Specializations in:

- Computer Programming
- Web Development

Technical Certificate

Foundation Courses

COP 1000C	INTRODUCTION TO PROGRAMMING CONCEPTS ⁺¹	3
CTS 1131C	COMPUTER MAINTENANCE ESSENTIALS	3
COP 2822C	WEB SITE DEVELOPMENT ⁺	3
CGS 2545C	DATABASE MANAGEMENT SYSTEMS ⁺	3
	Computer Programming and Analysis Electives	9
	Specialization (See below)	12

Total Credit Hours 33

Computer Programming Specialization

This certificate prepares students with computer programming skills in various languages. The content includes evaluating technical needs and software problems, developing a logical plan for a software solution, and writing, designing and maintaining computer programs to meet user requirements.

Program Outcomes

- Analyze technical problems as related to customer requirements.
- Design a logical plan for the development of a software solution.
- Implement software solutions including documentation.
- Evaluate software problems, plans, and solutions for correctness and appropriateness.

Select one of the following:	3
COP 2220C C PROGRAMMING ⁺ *	
COP 2800C JAVA PROGRAMMING ⁺ *	
COP 2360C C# PROGRAMMING ⁺ *	
COP 2830C SCRIPTING LANGUAGES [*]	3
Computer Programming and Analysis Electives	6
Total Credit Hours	12

Web Development Specialization

This certificate prepares and equips students with various web programming skills and web development tools. The content includes assessing customer needs and technical requirements, and developing, implementing and maintaining web-based software solutions to meet user needs.

Program Outcomes

- Analyze technical problems as related to customer requirements.
- Design a logical plan for the development of a software solution.
- Implement software solutions including documentation.
- Evaluate software problems, plans, and solutions for correctness and appropriateness.

COP 2830C SCRIPTING LANGUAGES [*]	3
CGS 2786C WEB DEVELOPMENT TOOLS [*]	3
COP 1812C XML AND WEB SERVICES [*]	3
Computer Programming and Analysis Electives	3
Total Credit Hours	12

+ This course must be completed with a grade of C or better

* This course has a prerequisite; check description in Valencia catalog.

¹ Students with prior programming experience who pass a waiver examination will be allowed to substitute a higher-level course for this course.

Notes:

Specialized courses may not be offered every session or on every campus.

This certificate program is eligible for Financial Aid.

Computer Programming Specialist with Specializations in

- Computer Programming
- Web Development

Technical Certificate

COP 1000C INTRODUCTION TO PROGRAMMING CONCEPTS ⁺¹	3
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CTS 1131C COMPUTER MAINTENANCE ESSENTIALS	3
Computer Programming and Analysis Electives	6
Specialization (See below)	6
Total Credit Hours	18

Computer Programming Specialization

This certificate prepares students with foundation skills in software development. The content includes evaluating technical and software problems, developing software solutions, and writing computer programs to meet customer needs and requirements.

Program Outcomes

- Analyze technical problems as related to customer requirements.
- Design a logical plan for the development of a software solution.
- Implement software solutions including documentation.
- Evaluate software problems, plans, and solutions for correctness and appropriateness.

Select one of the following:	3
COP 2220C C PROGRAMMING ⁺ *	
COP 2800C JAVA PROGRAMMING ⁺ *	
COP 2360C C# PROGRAMMING ⁺ *	
Computer Programming and Analysis Electives	3
Total Credit Hours	6

Web Development Specialization

This certificate prepares students with foundation skills in web programming. The content includes evaluating technical problems and requirements, and developing web-based software solutions to meet customer needs.

Program Outcomes

- Analyze technical problems as related to customer requirements.
- Design a logical plan for the development of a software solution.
- Implement software solutions including documentation.
- Evaluate software problems, plans, and solutions for correctness and appropriateness.

COP 2822C WEB SITE DEVELOPMENT ⁺	3
COP 2830C SCRIPTING LANGUAGES [*]	3
Total Credit Hours	6

+ This course must be completed with a grade of C or better.

* This course has a prerequisite; check description in Valencia catalog.

¹ Students with prior programming experience who pass a waiver examination will be allowed to substitute a higher-level course for this course.

Notes:

Specialized courses may not be offered every session or on every campus.