BS in Computer Information Systems

50 units

The BS in Computer Information Systems (CIS) (https://www.apu.edu/clas/programs/computer-information-systems-major/) program provides an integrated educational and practical foundation for students planning a career in the analysis, design, and implementation of information systems. Students are prepared for careers as systems analysts, application software developers, and information technology specialists. Students who have a strong interest in technology and its application, but are not primarily interested in the scientific and mathematical aspects of computer science, should find this program a good fit.

Computer information systems (CIS) is the study of the application of computer technology in organizations. It is founded on two major reference disciplines: computer science and information environment. CIS undergraduates must complete information environment coursework; CIS involves **no** coursework in engineering or scientific computing, and only introduction to statistics is required. APU's CIS program emphasizes the application of computer technology to information systems.

Knowledge of network administration, telecommunication, operating systems, and database applications is emphasized in this major.

Career Opportunities

The Bachelor of Science in Computer Information Systems prepares students for advanced studies in fields such as computer information systems, computer engineering, computer security, and telecommunications.

The CIS program offers internship opportunities to prepare students for careers following graduation. Students gain hands-on experience at several local and national businesses and organizations, and these organizations regularly request APU students for internships and employment. Employment opportunities in the areas of system networking, database management, telecommunication, and web programming are in abundance.

Requirements

Academic advising is required each semester; consult with the department for each semester's offerings, since they are not necessarily the same every semester.

Computer information systems students are required to have a laptop for classroom work.

Code	Title	Units
Computer Information Systems Core Courses [1,2]		
CS/ENGR 120	Introduction to Computer Science I [3]	4
CS/ENGR 125	Introduction to Computer Science II	4
CS/ENGR 160	Discrete Structures	3
CS 230	Systems Programming and Operating Systems	3
CS/ENGR 260	Algorithms and Data Structures	3
CS 290	Database Management Systems [3]	3
CS 315	Fundamentals of Network Administration	3
CS 325	Telecommunications and Interfacing	3
Select at least one of the following (if both are selected, one will count as an elective)		3
CS 363	Web Programming	
CS 440	Mobile App Development	
Select one elective course (see list below)		3
Computer Information Systems Environment Courses		
CS 115	Impact of Social Media [1]	3
ENGR 101	Introduction to Engineering and Computing [2]	3
ENGR 110	STEM as Vocation [4]	3
WRIT 242	Writing 2: Entrepreneurial Tech Start-ups [5]	3
CS 491	Computer Science Internship [6]	3
Quantitative Analysis Course		

MATH 130	Introduction to Statistics [7]	3
Total Units		**50**

Computer Information Systems Elective Courses

Code	Title	Units
CS 242/ENGR 240	Digital Logic Systems	4
CS 360	Computer Architecture and Organization	3
CS 363	Web Programming	3
CS 370	Compiler Construction	3
CS 430	Artificial Intelligence	3
CS 432	Machine Learning	3
CS 435	Advanced Database Application Programming	3
CS 440	Mobile App Development	3
CS/ENGR 452	Internet of Things	3
CS 460	Software Project	3
CS 465	Team Software Project	1-3
CS 484	Cyber Security	3
CS 495	Topics in Computer Science	3
CS 496	Writing 3: Ethics in Computing and Engineering [8]	3
CS 497	Readings	1-4
CS 498	Directed Research	1-4
CS 499	Thesis/Project	1-4
ENGR 215	Electrical Circuits and Systems	4
ENGR 335	Embedded Systems	4
ENGR 340	Digital Signal Processing	3
ENGR 350	Computer Networks	3

[1] The General Education Social Sciences course recommended by the Department of Engineering and Computer Science is CS 115.

[2] The General Education Civic Knowledge and Engagement course recommended by the Department of Engineering and Computer Science is ENGR 101.

[3] Meets 1 unit of the General Education Oral Communication requirement (taking CS 120, CS 290, and CS 480—or CS 120, ENGR 240, and ENGR 480—satisfies the General Education Oral Communication requirement).

[4] Meets the General Education Intercultural Competence requirement.

[5] Meets the General Education Writing 2 requirement.

[6] Meets the General Education Integrative and Applied Learning requirement.

[7] Meets the General Education Quantitative Literacy requirement.

[8] Meets the General Education Writing 3 requirement.

Students should enroll in CS 120 in their first semester of attendance in the department. It is also imperative that students determine which math course they qualify for and enroll in that course during their first semester, continuing with all math courses until they have completed math requirements for the CIS program. If students do not know which math course they qualify for, they should contact the Academic Success Center (https://www.apu.edu/academic-success/services/testing/math/) at (626) 815-3849 to make an appointment for placement testing.

Contact the Student Services Center (https://www.apu.edu/student-services/) and/or the Academic Success Center for all General Education advising.

Program Learning Outcomes

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Students who successfully complete this program shall be able to:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.
7. Demonstrate scientific knowledge of computation comprising computer architecture, algorithm analysis, programming principles, and software design.