

COMPUTER AND INFORMATION SCIENCES

CLIENT-SIDE WEB PAGE DEVELOPMENT

CERTIFICATE OF ACHIEVEMENT

Upon completion of the client-side Web page development certificate of achievement, students will be able to use their cutting-edge skills to gain entry-level jobs, and use the certificate for professional growth, salary increases, job promotions, or career changes in the area of information technology.

DIVISION/DEPARTMENT REQUIREMENTS: UNITS

CIS 103 Computer Programming Logic 3.5

or CIS 180 Programming in C/C++ (3)

or CIS 183 Programming in Java (3)

CIS 160 Web Page Development 3.5

CIS 162 HTML and CSS 3.5

CIS 164 JavaScript Programming 3.5

ART 192 PhotoShop/Digital Imaging 3

Total Certificate Requirements: 16.5-17

COMPUTER SCIENCE

ASSOCIATE IN SCIENCE DEGREE FOR TRANSFER (AS-T)

REQUIRED CORE (28 UNITS) UNITS

CIS 183 Java Programming 3

CIS 292 Data Structures 3

CIS 231 Computer Organization and
Assembly Language Programming 3

CIS 185 Discrete Structures 3

MATH 170 Analytic Geometry and Calculus I 4

MATH 190 Analytic Geometry and Calculus II 4

PHYS 201 Engineering Physics 4

PHYS 202 Engineering Physics 4

Total Degree Requirements: 28

ASSOCIATE IN SCIENCE IN COMPUTER SCIENCE FOR TRANSFER REQUIREMENTS

Complete the following (1) 60 semester or 90 quarter CSU – transferable units (2) The California State University-General Education-Breadth pattern (CSU GE-Breadth); or the Intersegmental General Education Transfer Curriculum (IGETC) pattern (3) A minimum of 18 semester or 27 quarter units in the major or area of emphasis as determined by the community college district (4) Obtainment of a minimum grade point

average (GPA) of 2.0 (5) Earn a grade of “C” or better in all courses required for the major or area of emphasis.

COMPUTER SCIENCE

ASSOCIATE IN ARTS DEGREE

MAJOR REQUIREMENTS UNITS

CIS 180 Programming in C/C++ 3

CIS 280 Object-Oriented Programming in C++ 3

MATH 170 Analytic Geometry and Calculus I 4

MATH 190 Analytic Geometry and Calculus II 4

PHYS 201 Engineering Physics 4

Total Degree Requirements: 18

ASSOCIATE IN ARTS DEGREE REQUIREMENTS

Complete the following: (1) major requirements, (2) the A.A. Degree

General Education requirements, and (3) electives to achieve a minimum of 60 units.

CYBERSECURITY

ASSOCIATE OF SCIENCE DEGREE

The program is designed to prepare students for the high growth profession – information security, by offering training on the cutting edge skills and knowledge sought by the industry, aiming to provide students opportunities for career change or advancement. Graduates of the program will have a comprehensive understanding of the current security challenges in the cyberspace, and will be equipped with the knowledge and skills needed to help design and implement policies and systems able to support a dependable organization’s information infrastructure. Possible career opportunities include entry level cybersecurity analyst, cybersecurity specialist, and cybersecurity engineer, etc.

DIVISION/DEPARTMENT REQUIREMENTS: UNITS

REQUIRED COURSES

CIS 103 Computer Programming Logic 3.5

CIS 170A Networking Fundamentals 3.5

CIS 170H TCP/IP Fundamentals 3

CIS 170L Cybersecurity Fundamentals 3.5

CIS 170P Introduction to Ethical Hacking 3.5

CIS 170R Computer and Digital Forensics 3.5

CIS 213F Microsoft Windows Server Administration 3.5

CIS 214 Unix 3.5

Choose 3.5 units from the following courses:

CIS 170S Network Defense 3.5

CIS 170I Cisco Network Security 3.5

Total Certificate Requirements: 31

ASSOCIATE OF SCIENCE DEGREE REQUIREMENTS

Complete a minimum of 60 units to include (1) the above course requirements, (2) A.S. Degree General Education requirements, and (3) electives as needed.

CYBERSECURITY

CERTIFICATE OF ACHIEVEMENT

Upon completion of the Cybersecurity Certificate of Achievement students will be able to use their newly learned skills to gain entry level jobs, use the certificate for professional growth, salary increases, job promotions or career changes in the area of information security/assurance.

**DIVISION/DEPARTMENT REQUIREMENTS: UNITS
REQUIRED COURSES**

CIS 103 Computer Programming Logic 3.5

CIS 170A Networking Fundamentals 3.5

CIS 170H TCP/IP Fundamentals 3

CIS 170L Cybersecurity Fundamentals 3.5

CIS 170P Introduction to Ethical Hacking 3.5

CIS 170R Computer and Digital Forensics 3.5

CIS 213F Microsoft Windows Server Administration 3.5

CIS 214 Unix 3.5

Choose 3.5 units from the following courses:

CIS 170S Network Defense 3.5

CIS 170I Cisco Network Security 3.5

Total Certificate Requirements: 31

MICROCOMPUTER SPECIALIST

CERTIFICATE OF ACHIEVEMENT

DIVISION/DEPARTMENT REQUIREMENTS UNITS

CIS 58A PC Operating System A+ Certification 3.5

CIS 58B PC Core Hardware A+ Certification 3.5

CIS 102 Introduction to Microcomputer Hardware and Applications Software 3

CIS 103 Computer Programming Logic 3.5

CIS 151 Microsoft Excel for Information Systems/Information Technology 3.5

CIS 155 Microsoft Access 3

CIS 170A Networking Fundamentals 3.5

CIS 200A Apple Mac OS Support Essentials 3.5

ENGL 100** Freshman Composition 4

Total Certificate Requirements: 31

**Meets A.A. Degree General Education requirement.

NOTE: CIS 102, and 103 meet A.A. Degree General Education

Communication and Analytical Thinking requirement.

ASSOCIATE IN ARTS DEGREE REQUIREMENTS

Meet the requirements for Certificate of Achievement in Computer and Information Sciences Microcomputer Specialist and complete General Education requirements and electives to achieve a minimum of 60 units.

NOTE: Although many of these courses are transferable, this Certificate/A.A. Degree is nontransferable. Please see counselors or the respective department for additional alternatives.

NETWORK/SYSTEMS ADMINISTRATION

ASSOCIATE OF ARTS DEGREE

The network/systems administration program at Cerritos College is designed to prepare students for a career in the information industry. Graduates of the program will have a comprehensive understanding of the current communication technologies and commonly used operating systems, will be equipped with the knowledge and skills needed to design and implement a network infrastructure, and will be able to deploy and administer multiple systems in an organization. The graduates of the program have possible career opportunities including the following occupations: entry-level technical support technician, system administrator, network technician, network administrator, and network engineer.

REQUIRED COURSES UNITS

CIS 170A Networking Fundamentals 3.5

CIS 170E Router Configurations and Protocol 3.5

CIS 170F Advanced Switching and Routing 3.5

CIS 170G Wide Area Networks 3.5

CIS 170H TCP/IP Fundamentals 3

CIS 170K Introduction to Wireless Networking 3

CIS 200A Apple Mac OS Support Essentials 3.5

CIS 212 Introduction to Microsoft Windows
Administration 3.5

CIS 213F Microsoft Windows Server Administration 3.5

CIS 214 Unix and Linux Operating Systems 3

Choose 3.5 units from the following courses:

CIS 103 Computer Programming Logic 3.5

CIS 170B Network+ Certification 3.5

CIS 170L Cybersecurity Fundamentals 3.5

Total Degree Requirements: 37

ASSOCIATE OF ARTS DEGREE REQUIREMENTS

Meet the requirements of a certificate of achievement in computer and information sciences network systems/administration and complete general education requirements and electives to achieve a minimum of 60 units.

NETWORK/SYSTEMS ADMINISTRATION

CERTIFICATE OF ACHIEVEMENT

The network/systems administration program at Cerritos College is designed to prepare students for a career in the information industry by offering training on the cutting-edge skills and knowledge sought by the industry, aiming to provide students with opportunities for career change or advancement.

Graduates of the program will have a comprehensive understanding of the current communication technologies and commonly used operating systems, will be equipped with the knowledge and skills needed to design and implement a network infrastructure, and will be able to deploy and administer multiple systems in an organization. The graduates of the program have possible career opportunities including the following occupations: entry-level technical support technician, system administrator, network technician, network administrator, and network engineer.

REQUIRED COURSES UNITS

CIS 170A Networking Fundamentals 3.5

CIS 170E Router Configurations and Protocol 3.5

CIS 170F Advanced Switching and Routing 3.5

CIS 170G Wide Area Networks 3.5

CIS 170H TCP/IP Fundamentals 3

CIS 170K Introduction to Wireless Networking 3

CIS 200A Apple Mac OS Support Essentials 3.5

CIS 212 Introduction to Microsoft Windows Administration 3.5

CIS 213F Microsoft Windows Server Administration 3.5

CIS 214 Unix and Linux Operating Systems 3

Choose 3.5 units from the following courses:

CIS 103 Computer Programming Logic 3.5

CIS 170B Network+ Certification 3.5

CIS 170L Cybersecurity Fundamentals 3.5

Total Certificate Requirements: 37

PROGRAMMER ASSOCIATE OF ARTS DEGREE

DIVISION/DEPARTMENT REQUIREMENTS UNITS

CIS 103 Computer Programming Logic 3.5

CIS 180 Programming in C/C++ 3

CIS 183 Java Programming 3

CIS 207 Database Design and SQL 3.5

or CIS 208A Oracle SQL and PL/SQL (3.5)

CIS 214 Unix and Linux Operating Systems 3

CIS 280X Object-Oriented Programming in C++ 3.5

CIS 282 Advanced Java Programming 3.5

CIS 292 Data Structures 3

ENGL 100** Freshman Composition 4

Choose at least 6 units from the following courses:

CIS 160 Web Page Development 3.5

CIS 162 HTML and CSS 3.5

CIS 164 JavaScript Programming 3.5

CIS 170L Cybersecurity Fundamentals 3.5

CIS 201 Systems Analysis and Design 3

CIS 202A Project Management for

Information Technology 3.5

CIS 202B Microsoft Project 3.5

CIS 231 Computer Organization and Assembly Language Programming 3

CIS 271/272/ CIS Occupational Work Experience 1/2/3/4273/274

CIS 285A ASP.NET Programming 3.5

CIS 286 Software Development with C# 3.5

CIS 288 Mobile Application Development 3.5

Total Degree Requirements: 36/37

**Meets AA degree general education requirements.

NOTE: CIS 103 meets the AA degree general education requirement for the communication and analytical thinking category.

ASSOCIATE OF ARTS DEGREE REQUIREMENTS

Meet the requirements for a programmer associate of arts degree in computer and information sciences and complete general education requirements and electives to achieve a minimum of 60 units. See Cerritos College graduation requirements.

NOTE: Although many of these courses are transferable, this AA degree is nontransferable. Please see counselors or the respective department for additional alternatives.

PROGRAMMER

CERTIFICATE OF ACHIEVEMENT

DIVISION/DEPARTMENT REQUIREMENTS UNITS

CIS 103 Computer Programming Logic 3.5

CIS 180 Programming in C/C++ 3

CIS 183 Java Programming 3

CIS 207 Database Design and SQL 3.5

or CIS 208A Oracle SQL and PL/SQL (3.5)

CIS 214 Unix and Linux Operating Systems 3

CIS 280X Object-Oriented Programming in C++ 3.5

CIS 282 Advanced Java Programming 3.5

CIS 292 Data Structures 3

ENGL 100** Freshman Composition 4

Choose at least 6 units from the following courses:

CIS 160 Web Page Development 3.5

CIS 162 HTML and CSS 3.5

CIS 164 JavaScript Programming 3.5

CIS 170L Cybersecurity Fundamentals 3.5

CIS 201 Systems Analysis and Design 3

CIS 202A Project Management for Information
Technology 3.5

CIS 202B Microsoft Project 3.5

CIS 231 Computer Organization and Assembly Language Programming 3

CIS 271/272/ CIS Occupational Work Experience 1/2/3/4273/274

CIS 285A ASP.NET Programming 3.5

CIS 286 Software Development with C# 3.5

CIS 288 Mobile Application Development 3.5

Total Certificate Requirements: 36/37

SYSTEMS ANALYST

ASSOCIATE OF ARTS DEGREE

DIVISION/DEPARTMENT REQUIREMENTS UNITS

CIS 101 Introduction to Computer Information Systems 3

or CIS 102 Introduction to Microcomputer Hardware and Applications Software (3)

CIS 103 Computer Programming Logic 3.5

CIS 151 Microsoft Excel for Information Systems/Information Technology 3.5

CIS 162 HTML and CSS 3.5

or CIS 180 Programming in C/C++ (3)

or CIS 183 Java Programming (3)

CIS 201 Systems Analysis and Design 3

CIS 202A Project Management for Information Technology 3.5

CIS 202B Microsoft Project 3.5

CIS 207 Database Design and SQL 3.5

or CIS 208A Oracle SQL and PL/SQL (3.5)

ENGL 100 Freshman Composition 4

Total Degree Requirements: 30.5/31

NOTE: CIS 101, 102, or 103 meets A.A. degree general education communication and analytical thinking requirements.

ASSOCIATE OF ARTS DEGREE REQUIREMENTS

Meet the requirements for the systems analyst certificate of achievement in computer and information sciences.

Complete general education requirements and electives to achieve a minimum of 60 units.

NOTE: Although many of these courses are transferable, this certificate/AA degree is nontransferable.

Please see SEM counselors or the respective department for additional alternatives.

SYSTEMS ANALYST

CERTIFICATE OF ACHIEVEMENT

DIVISION/DEPARTMENT REQUIREMENTS UNITS

CIS 101 Introduction to Computer Information Systems 3

or CIS 102 Introduction to Microcomputer Hardware and
Applications Software (3)

CIS 103 Computer Programming Logic 3.5

CIS 151 Microsoft Excel for Information Systems/Information Technology 3.5

CIS 162 HTML and CSS 3.5

or CIS 180 Programming in C/C++ (3)

or CIS 183 Java Programming (3)

CIS 201 Systems Analysis and Design 3

CIS 202A Project Management for
Information Technology 3.5

CIS 202B Microsoft Project 3.5

CIS 207 Database Design and SQL 3.5

or CIS 208A Oracle SQL and PL/SQL (3.5)

ENGL 100 Freshman Composition 4—

Total Certificate Requirements: 30.5/31

NOTE: CIS 101, 102, or 103 meets A.S. Degree general education communication and analytical thinking requirements.