Catalog Update for 2016-17 College Catalog
Last Updated: February 8, 2017

Policy Change – Enrollment Limitations

The following language replaces the Enrollment Limitations Policy listed on page 21 of the 2016/17 College Catalog:

Students may enroll in a maximum of eighteen (18) semester units each Fall and Spring school terms.

Students may enroll in a maximum of eight (8) semester units during the Summer session. Students wishing to enroll in more than the maximum units allowable must receive permission from their academic counselors.

Upon approval, the students may add these units at any time during priority registration and through the Add period. Approval to take more than 18 semester units in a Fall or Spring semester or 8 semester units during a Summer session will be given based on the counselors’ assessments of the students’ academic histories, records, and goals.

NOTE: Enrollment maximums are strictly enforced by our computer systems. Therefore, students who have received permission from their counselor to enroll in over the maximum units authorized by College policy must process those units in-person at the Registration Center, Smith Hall, Room 118.

Program Type Change

Due to a typographic error, the Associate in Science in Photography was mistakenly identified as an Associate in Arts degree. Corrected program details are published below.

Associate in Science in Photography (AS)

Associate in Science Degree with Major in Photography. The program is designed so that students may satisfy the requirements for graduation from the College. The program adviser of the Photography Department will help students who desire to plan special programs of study.

Learning Outcomes

Upon completion of this program, students will be able to:

- Use the traditional tools and techniques of photography, such as but not limited to: measure light, estimate depth of field and motion.
- Demonstrate the use of digital hardware and software technologies, such as but not limited to: scanners, printers, image compression and transfer, Photoshop and Lightroom.
- Apply design concepts, such as but not limited to: aesthetic elements and principles, create and evaluate photographic images, use iterative processes.
- Apply specific photographic business practices, such as but not limited to: compare equipment needs, produce a portfolio, develop client relationships, and determine fees and licensing.
Assuming students start this AS with transfer-level math and English eligibility, the minimum time for completion is 4 semesters. Completion time will vary based on student preparation and number of units completed per semester.

Courses Required for the Major in Photography

Course...................................................................................................................................... Units

Core courses:
PHOT 51 Beginning Photography................................................................................................. 3.0
PHOT 100/DSGN 101/VMD 101 Design Fundamentals .............................................................. 3.0
PHOT 83 View Camera Techniques ........................................................................................ 2.0
PHOT 85A Beginning Lighting Techniques ................................................................................. 4.0
PHOT 80 Outdoor & Ambient Lighting..................................................................................... 3.0
PHOT 85B Advanced Studio Lighting Tech................................................................................. 4.0
PHOT 90 Portraiture .................................................................................................................... 4.0
PHOT 99 Business Practices of Photography ............................................................................. 3.0
PHOT 130 Portfolio Production .................................................................................................. 3.0

Choose one of the following intermediate photography courses:
PHOT 81A Intermediate Photo: B&W Film/Darkroom ................................................................. 4.0
PHOT 81D Intermediate Photo: Digital ........................................................................................ 4.0

Choose one of the following history and aesthetics courses:
PHOT 50A History & Aesthetics Pre-1945 .................................................................................. 4.0
PHOT 50B History & Aesthetics Since 1945 .............................................................................. 4.0

Choose one of the following editorial/news photography courses:
PHOT 93 Editorial Photography................................................................................................... 2.0
PHOT 102B Documentary/News Photography ............................................................................ 2.0

Choose one of the following intermediate/advanced photography courses:
PHOT 81B Advanced Black & White Darkroom ......................................................................... 4.0
PHOT 60B Intermediate Photoshop ............................................................................................ 3.0

Choose 2 units from the following elective courses:
PHOT 52 Photographers and Their Images ................................................................................ 1.0
PHOT 57 Photography for the Web ............................................................................................ 3.0
PHOT 67 Digital Negatives for Darkroom Printing ................................................................. 3.0
PHOT 86 Mixed Media & the Photo Image .............................................................................. 3.0
PHOT 101B Hand Tinting Photographs ..................................................................................... 1.0
PHOT 101C Self Portraiture ....................................................................................................... 1.0
PHOT 101D Landscape Photography ......................................................................................... 1.0
PHOT 101G Pinhole Photography ............................................................................................. 1.0
PHOT 102A Architectural Photography .................................................................................... 2.0
DSGN 105 Survey of Collaborative Design ............................................................................. 3.0
DSGN 110/VMD 112 Rapid Visualization .............................................................................. 3.0
DSGN 150/VMD 118 Color in Design ...................................................................................... 3.0

Total................................................................................................................................ 44.0 – 46.0
Programs

The following programs shall be considered included in the 2016-17 College Catalog, with the effective dates noted below.

<table>
<thead>
<tr>
<th>Department</th>
<th>Program</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive/Motorcycle, Construction, and Building Maintenance</td>
<td>Certificate of Accomplishment in Residential Wiring - REVISED</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Computer Networking &amp; Information Technology</td>
<td>Associate in Science in Computer Networking and Information Technology - REVISED</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Computer Networking &amp; Information Technology</td>
<td>Certificate of Accomplishment in Advanced Cybersecurity - NEW</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Computer Networking &amp; Information Technology</td>
<td>Certificate of Accomplishment in Microsoft Windows Networking - REVISED</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td>Associate in Sciences in Environmental Studies (AS) - NEW</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td>Associate in Arts in Geography for Transfer (AA-T) - NEW</td>
<td>Fall 2016</td>
</tr>
<tr>
<td>Health Care Technology</td>
<td>Associate in Science in Cardiovascular Technician/Echocardiography (AS) - NEW</td>
<td>Fall 2016</td>
</tr>
<tr>
<td>Interdisciplinary Studies</td>
<td>Certificate of Accomplishment in Diversity and Social Justice - REVISED</td>
<td>Spring 2017</td>
</tr>
<tr>
<td>Nursing, Licensed Vocational</td>
<td>Certificate of Accomplishment in Home Health Aide/Nurse Assistant - REVISED</td>
<td>Spring 2017</td>
</tr>
</tbody>
</table>

AUTOMOTIVE/MOTORCYCLE, CONSTRUCTION, AND BUILDING MAINTENANCE

Residential Wiring Certificate of Accomplishment

This certificate program prepares students for employment where training in the rules, methods, and materials are necessary to install residential electrical wiring systems.

Learning Outcomes

Upon completion of this program, students will be able to:

- Identify basic OSHA (Occupational Safety and Health Administration) requirements, recognize and evaluate general safety hazards and take appropriate action.
- Measure, lay out, calculate and estimate construction projects using appropriate tools and equipment.
- Identify and summarize basic electrical theory and its application in residential wiring systems.
- Design and install a residential wiring system in compliance with national, state and local codes.
- Interpret the language and navigate through the NEC (National Electric Code) to interpret the appropriate practical application.
- Read floor plans, elevations, and building sections; interpret construction abbreviations, nomenclature, composition; and analyze interconnected systems.

Students must pass each class with a grade of "C" or higher.

Students may apply for this certificate having completed course work or equivalent course work from another accredited institution within the past 5 years.
The minimum time for completion of this certificate is 2 semesters. Completion time will vary based on student preparation and number of classes completed per semester.

Courses Required for the Certificate of Accomplishment in Residential Wiring
Required courses:
- CNST 69 – Construction Safety ................................................................. 1.00
- CNST 100 – Introduction to Construction Applications .......................... 3.00
- CNST 107 – Blueprint Reading ................................................................. 3.00
- CNST 109 – Residential Wiring ................................................................. 3.00
- CNST 128 – Introduction to the National Electrical Code .................... 2.00
- CNST 129 – Intermediate National Electrical Code ............................. 2.00
- CNST 131 – Advanced National Electrical Codes ................................. 2.00
Total .................................................................................................................. 16.00

COMPUTER NETWORKING AND INFORMATION TECHNOLOGY

Associate in Science in Computer Networking & Information Technology (AS)
The Associate of Science degree with a major in Computer Networking and Information Technology (CNIT) provides students with a solid foundation of skills, knowledge and hands on experience with the core areas of the field of Computer Networking and Information Technology as well as current trends and technologies used in the computer industry. The topics covered in this major include Computer Hardware, Computer Network Administration, Network Security and the basics of Internet and Web development, as well as an option in one of the following areas: Computer Technical Support, Internet and Web Development Techniques, Network Security, Wireless Networks, Cisco Networking, or Microsoft Windows Administration. This degree qualifies students for employment in entry-level network administration, computer technical support or web development positions.

Learning Outcomes
Upon completion of this program, students will be able to:
- Evaluate computer hardware components and design a functional computer system.
- Demonstrate the use of network devices, network operating systems and networking models and their related protocols.
- Develop and maintain a basic web site using web development industry standards.
- Explain the basics of network security systems.
- Demonstrate competency in one of the required optional areas (see program description).

Optional competency areas:
- Computer Technical Support: Troubleshoot and repair defective computer systems
- Internet and Web Development Techniques: Recognize and use appropriate web development technologies to promote or enhance the work environment
- Network Security: Develop strategies for network defense using firewalls, routers, switches, antivirus, anti-spyware tools, and hacking techniques
- Wireless Networks: Evaluate components to prepare and install wireless networks
- Cisco Networking: Configure and operate Cisco Local and Wide Area Networking hardware and software
- Microsoft Windows: Install and support a Microsoft Windows networking environment including Windows Server, SQL Server database and Windows Desktop edition
Assuming students start this AS with transfer-level math and English eligibility, the minimum time for completion is 4 semesters. Completion time will vary based on student preparation and number of units completed per semester.

### Courses Required for the Major in Computer Networking and Information Technology AS

**Core courses:**

- CNIT 103 Computer Hardware ................................................................. 3.0
- CNIT 131 Internet Basics and Beginning HTML ................................. 3.0
- CNIT 120 Network Security ................................................................. 3.0

**Choose one of the following network courses:**

- CNIT 106 Introduction to Networks .................................................. 3.0
- CNIT 201C Introduction to Cisco Networks ...................................... 3.0

**Choose one of the following options:**

**OPTION 1: Computer Technical Support**

- CNIT 104 Operating Systems Technologies ..................................... 3.0
- CNIT 105 IT Customer Support ......................................................... 3.0
- CNIT 401 Windows 10 Technical Support ........................................... 3.0
- CNIT 103L Computer Hardware Lab
  or CNIT 105L Computer Technical Support ..................................... 1.0

**OPTION 2: Internet and Web Development Techniques:**

- CNIT 132 Intermediate HTML and CSS ........................................... 3.0
- CNIT 133 JavaScript, jQuery, AJAX ..................................................... 3.0
- CNIT 134 Server Side Technologies for the Web ............................... 3.0

**OPTION 3: Network Security**

- CNIT 121 Computer Forensics ......................................................... 3.0
- CNIT 122 Firewalls ........................................................................... 3.0
- CNIT 123 Ethical Hacking & Network Defense ................................. 3.0

**OPTION 4: Wireless Networks**

- CNIT 107 Wireless LANs .................................................................... 3.0
- CNIT 113 Technology of Smartphones & Mobile Devices ............... 3.0
- CNIT 108 Wireless Networks, Advanced ........................................... 3.0

**OPTION 5: Cisco Networking**

- CNIT 202C - Routing and Switching Essentials .................................. 3.0
- CNIT 203C - Scaling Networks ............................................................ 3.0
- CNIT 204C - Connecting Networks ..................................................... 3.0

**OPTION 6: Microsoft Windows**

- CNIT 411 - Administering Windows Server ........................................ 3.0
- CNIT 412 - Configuring Advanced Windows Server ......................... 3.0
- CNIT 401 - Windows 10 Technical Support
  or CNIT 415 - SQL Server Administration ........................................ 3.0

**Total** ................................................................................................. 21.0-22.0

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### Advanced Cybersecurity Certificate of Accomplishment

This certificate includes instruction in security risks and protection techniques for mobile devices, Web applications, and telephone networks, and how to manage information security programs. Students completing this certificate program will be qualified for employment as incident response specialists, Chief Security Officers, or malware analysts, and be able to prepare for the (ISC)^2 Certified Information Systems Security Professional exam.

The minimum time for completion of this certificate is 2 semesters. Completion time will vary based on student preparation and number of units or classes completed per semester.
Learning Outcomes
Upon completion of this program, students will be able to:

● Describe common cybersecurity threats and defenses, prioritize them, and properly implement defenses such as firewalls and intrusion defense systems
● Analyze systems for evidence of abuse or intrusions
● Perform advanced attacks and defend against them
● Communicate with management effectively and clearly, and prepare security management policies

Courses Required for the Certificate of Accomplishment in Advanced Cybersecurity
Required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNIT 124 – Advanced Ethical Hacking</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 125 – Information Security Professional Practices</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 126 – Practical Malware Analysis</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 127 – Exploit Development</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 128 – Hacking Mobile Devices</td>
<td></td>
<td>3.00</td>
</tr>
</tbody>
</table>

Total: 15.00

Microsoft Windows Networking Certificate of Accomplishment

This certificate includes instruction and practice in the theory, design, configuration, and operation of local and wide area networks using Microsoft Windows servers. Students completing this certificate program will be qualified for employment in entry-level positions in network management and technical support of Windows networks.

Learning Outcomes
Upon completion of this program, students will be able to:

● Define various components of Windows Server
● Install Windows Server
● Use advanced techniques to implement and manage active directory infrastructure.
● Support hardware, software and end-users of Windows OS Desktop edition

The minimum time for completion of this certificate is three semesters. Completion time will vary based on student preparation and number of units or classes completed per semester.

Courses Required for the Certificate of Accomplishment in Microsoft Windows Networking

Course | Description | Units
--- | --- | ---
Choose one of the following courses:
CNIT 106 - Introduction to Networks | | 3.00
CNIT 201C – Introduction to Cisco Networks | | 3.00

Required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNIT 401 – Windows 10 Technical Support</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 410 - Installing and Configuring Windows Server</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 411 – Administering Windows Server</td>
<td></td>
<td>3.00</td>
</tr>
</tbody>
</table>

Choose one of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNIT 412 – Configuring Advanced Windows Server</td>
<td></td>
<td>3.00</td>
</tr>
<tr>
<td>CNIT 415 - SQL Server Administration</td>
<td></td>
<td>3.00</td>
</tr>
</tbody>
</table>

Total: 15.00
EARTH SCIENCES

Associate in Science in Environmental Studies (AS)

CCSF’s Environmental Studies major is designed to demonstrate the interdisciplinary nature of the field and to provide students with a strong foundation in the natural and social sciences in preparation for transfer to a bachelor’s degree program.

Although Environmental Studies majors should be able to complete most or all of their lower division preparation at CCSF before transfer, they should meet with a counselor to confirm their program of study and the specific requirements of the transfer institution.

Through the required units for the Environmental Studies major, students will apply core principles and methods across disciplines to explore how the environment influences and is influenced by human institutions. Students will be able to analyze scientific, economic, political, and societal factors impacting environmental and natural resource problems and both critically evaluate and propose sustainable solutions. The major also provides opportunities for experiential learning through laboratory work and field investigations.

Learning Outcomes

Upon completion of this program, students will be able to:

- Apply concepts, models, and quantitative techniques from mathematics and the natural and social sciences to solve complex problems related to the natural world and society.
- Apply tools, practices, and quantitative reasoning to collect, analyze, and interpret environmentally relevant data both in laboratory and field settings.
- Analyze, interpret, and evaluate quantitative and qualitative evidence regarding the causes and consequences of human impacts on the environment and their implications for societal welfare.
- Apply concepts and models from scientific, economic, and sociopolitical disciplines to both critically evaluate and propose sustainable solutions to environmental degradation and resource depletion.
- Quantify and evaluate personal impacts on the environment and integrate and apply sustainable solutions to their own lifestyle and career choices.

See major requirements at the intended transfer institution to choose the appropriate course(s) when options are given.

Assuming students start this AS with transfer-level math and English eligibility, the minimum time for completion is 4 semesters. Completion time will vary based on student preparation and number of units completed per semester.

Courses Required for the Major in Environmental Studies

Course........................................................................................................................................... Units

Core courses:
BIO 31/GEOG 31/SUST 31 Introduction to Environmental Science .............................................. 3.00

Choose one of the following biological science courses:
BIO 11 The Science of Living Organisms ....................................................................................... 4.00
BIO 100A General Biology ........................................................................................................... 5.00
ECOL 10 Introduction to Ecology .................................................................................................. 3.00
BIO 19 Ecology ............................................................................................................................ 4.00

Choose one of the following chemistry courses:
CHEM 40 Introduction to Chemical Principles .............................................................................. 5.00
CHEM 101A General College Chemistry ...................................................................................... 6.00

Choose one of the following earth science course combinations:
GEOG 1 Physical Geography ........................................................................................................ 3.00
AND
GEOG 1L Physical Geography Laboratory .................................................................................. 1.00
GEOL 10 - Physical Geology ................................................................. 3.00
AND
GEOL 10L - Physical Geology Lab ...................................................... 2.00
GEOL 30 - Environmental Geology ....................................................... 3.00
AND
GEOL 30L - Environmental Geology Lab ........................................... 1.00

Choose one of the following math courses:
ECON 5 - Introductory Statistics for Economics, Business and Social Sciences ........................................ 5.00
MATH 80 - Probability and Statistics .................................................. 4.00
PSYC 5 - Statistics for Behavioral Sciences ......................................... 5.00
MATH 100A - Short Calculus I ............................................................... 3.00
MATH 110A - Calculus I ................................................................. 5.00

Choose two of the following social science courses:
ANTH 3 - Introduction to Social and Cultural Anthropology .................. 3.00
ANTH 3AC - Introduction to Cultural Anthropology:
  Focus on American Cultures ............................................................ 3.00
ECON 1 - Principles of Macroeconomics ........................................... 3.00
ECON 3 - Principles of Microeconomics .......................................... 3.00
GEOG 4 - Cultural Geography .......................................................... 3.00
GEOG 7 - Economic Geography ...................................................... 3.00
POLS 22 - Environmental Politics and Policy .................................. 3.00

Choose 6 units from the following courses:
BIO 33 - Introduction to Conservation Biology ................................... 3.00
BIO 100B - General Biology .............................................................. 5.00
BIO 225/SUST 225 - Environmental Toxicology ......................... 3.00
CHEM 101B - General College Chemistry ...................................... 5.00
ENRG 3 - Introduction to Alternative Energy ............................. 3.00
ENRG 3L - Introduction to Alternative Energy Laboratory .......... 1.00
GEOG 41A - Climate Change ................................................................. 1.00
GEOG 110/GIS 110 - Introduction to GIS ......................................... 3.00
HLTH 53 - Health in Society ............................................................... 3.00
HLTH 221 - Health and Social Justice ............................................. 3.00
PHYC 10 - Conceptual Physics .......................................................... 3.00
PHYC 10L - Conceptual Physics Laboratory ................................. 1.00
Any of the above earth science, mathematics, biology, or social science options not already completed
Total .................................................. 30.0-37.0

**Associate in Arts in Geography for Transfer (AA-T)**

Geographers study the relationships among places, natural systems, society and cultural activities and the interdependence of these from the spatial perspective.

Geographers today are active in the examination and planning of our communities and the development of our human landscapes along with the study of global warming, deforestation, pollution, and a variety of other environmental quandaries.

This Associate in Arts in Geography for Transfer (AA-T) is specifically designed to prepare students for transfer to a CSU geography program at the upper division level. It may also be appropriate for transfer to other four-year institutions. To accomplish this goal, majors will complete transferable lower-division courses in geography and related fields. Geography majors will be able to take most or all of their lower division courses at CCSF before they transfer, but should see a counselor to confirm their program of study. Additional courses might be required to transfer to particular institutions.
Through the core classes of the AA-T in Geography, students will gain the knowledge necessary to investigate problems and ideas presented in upper division geography courses. The laboratory work will train students to use current laboratory technologies, equipment and techniques to engage in the research process using scientific methods and to investigate research questions safely.

### Learning Outcomes

Upon completion of this program, students will be able to:

- Interpret spatially distributed data and draw valid conclusions by using maps, graphs and/or Geographic Information Systems (GIS)
- Evaluate core concepts in cultural and physical geography and apply them to contemporary events and issues.
- Compare and contrast the general biophysical and sociocultural differences and similarities among world regions.
- Communicate geographic information effectively in oral, written, and graphic form.

### Degree Requirements

Students who wish to earn the Associate in Arts in Geography for Transfer must complete 60 CSU transferable units with at least a 2.0 grade point average. This must include the units required for full completion of the IGETC or CSU GE curriculum and the units for the major as specified below. Each course in the major must be completed with a grade of "C" or better. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements.

See major requirements at the intended transfer institution to choose the appropriate courses when options are given and to ensure complete coverage.

Assuming students start this AA-T with transfer-level math and English eligibility, the minimum time for completion is 4 semesters. Completion time will vary based on student preparation and number of units completed per semester.

### Courses Required for the Major in Geography for Transfer

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required courses:</td>
<td></td>
</tr>
<tr>
<td>GEOG 1 – Physical Geography</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOG 1L – Physical Geography Laboratory</td>
<td>1.00</td>
</tr>
<tr>
<td>GEOG 4 – Cultural Geography</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOG 3 – World Regional Geography</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOG 110/GIS 110 - Introduction to GIS</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Choose 2 of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 7 – Economic Geography</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOG 111/GIS 111 - GIS Analysis and Modeling</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOG 112/GIS 112 - GIS Software Technology</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOL 10 - Physical Geology</td>
<td>3.00</td>
</tr>
<tr>
<td>ANTH 3 – Introduction to Social and Cultural Anthropology</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Recommended additional coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCAN 1 - Oceanography</td>
<td>3.00</td>
</tr>
<tr>
<td>OCAN 1L – Oceanography Lab</td>
<td>2.00</td>
</tr>
<tr>
<td>GEOG 31/BIO 31/SUST 31 - Introduction to Environmental Science</td>
<td>3.00</td>
</tr>
<tr>
<td>GEOG 41A/GEOL 41A - Climate Change</td>
<td>1.00</td>
</tr>
<tr>
<td>GEOL 91 - Geoscience Work Experience</td>
<td>0.50 - 3.00</td>
</tr>
</tbody>
</table>

**Total** .......................................................... **19.00**
HEALTH CARE TECHNOLOGY

Associate in Science in Cardiovascular Technician/Echocardiography (AS)

Students who complete their training satisfactorily are prepared to hold positions as cardiac sonographers, echocardiography technicians, cardiovascular technicians in a medical center, cardiology officer or health center. Graduates are eligible to sit for the national registry examinations: American Registry of Diagnostic Medical Sonography (ARDMS) or Cardiovascular Credentialing International (CCI).

Learning Outcomes

Upon completion of this program, students will be able to:

- Comprehend, apply and evaluate information relative to the role of cardiac sonographer.
- Demonstrate technical skills necessary to fulfill the role of cardiac sonographer.
- Behave professionally, skillfully, and in a manner consistent with employer expectations for an entry-level position in cardiac ultrasound.
- Qualify for the national registry examinations in cardiac ultrasound: American Registry of Diagnostic Medical Sonography (ARDMS) or Cardiovascular Credentialing International (CCI).

The minimum time for completion of this AS is 4 semesters. Completion time will vary based on student preparation and number of classes completed per semester.

Courses Required for the Major in Cardiovascular Technician/Echocardiography

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECHO 101 Echocardiography</td>
<td>7.00</td>
</tr>
<tr>
<td>CVT 101 Cardiovascular Technician</td>
<td>3.00</td>
</tr>
<tr>
<td>CVT 110 Cardiovascular Skills</td>
<td>7.00</td>
</tr>
<tr>
<td>ECHO 201 Advanced Echocardiography Technician</td>
<td>7.00</td>
</tr>
<tr>
<td>CVT 201 Advanced Cardiovascular Technician</td>
<td>4.00</td>
</tr>
<tr>
<td>CVT 210 Advanced Cardiovascular Skills</td>
<td>7.00</td>
</tr>
<tr>
<td>ECHO 301 - Advanced Cardiac Abnormalities</td>
<td>5.00</td>
</tr>
<tr>
<td>CVT 301 - Physics of Cardiac Ultrasound</td>
<td>3.00</td>
</tr>
<tr>
<td>CVT 310 - Clinical Experience in Cardiac Ultrasound</td>
<td>9.00</td>
</tr>
<tr>
<td>ECHO 401 - Advanced Echocardiographic Studies</td>
<td>6.00</td>
</tr>
<tr>
<td>CVT 410 - Clinical Experience in Advanced Cardiac Ultrasound</td>
<td>13.00</td>
</tr>
<tr>
<td>Total</td>
<td>71.00</td>
</tr>
</tbody>
</table>

INTERDISCIPLINARY STUDIES

Diversity and Social Justice Certificate of Accomplishment

The Diversity and Social Justice Certificate of Accomplishment is a series of short courses that provide a consciousness-raising analysis and evaluation of specific forms of social oppression and social justice interventions in the United States. Addressing individual, institutional, and socio-cultural elements of diversity and social justice, the certificate provides foundational training for City College of San Francisco students and faculty.
The certificate also serves professional development needs for employers, community based organizations, and social and government agencies such as the San Francisco Unified School District and the Police Academy.

Learning Outcomes
Upon completion of this program, students will be able to:
- Analyze forms of identity-based oppression, including structural, interpersonal, and internalized manifestations of oppression, both conscious and unconscious, and the privilege and disadvantages conferred by these systems of oppression.
- Differentiate and assess personal beliefs, thoughts, feelings, biases, prejudices, and stereotypes in relation to diversity and social justice.
- Describe different ways of taking action against oppression on personal, community, and institutional levels.
- Explain the intersectionality and interrelatedness of distinct forms of social oppression, including classism, racism, anti-Semitism/anti-Arabism, sexism, heterosexism, ableism, transphobia, and adultism/ageism (age-based oppression).

The minimum time for completion of this certificate is two semesters. Completion time will vary based on student preparation and number of units completed per semester.

Courses Required for the Certificate of Accomplishment in Diversity and Social Justice

Required courses:
- IDST 80A - Diversity and Social Justice: Racism ................................................................. 0.50
- IDST 80C - Diversity and Social Justice: Sexism ................................................................. 0.50
- IDST 80D - Diversity and Social Justice: Heterosexism ...................................................... 0.50
- IDST 80E - Diversity and Social Justice: Ableism ............................................................... 0.50
- IDST 80F - Diversity and Social Justice: Class and Classism ............................................... 0.50
- IDST 80G - Diversity and Social Justice: Transphobia .......................................................... 0.50
- IDST 81B - Diversity and Social Justice: Anti-Semitism/Anti-Arabism ............................... 1.00

Total............................................................................................................................................ 4.00

NURSING, LICENSED VOCATIONAL

Home Health Aide/Nurse Assistant Certificate of Accomplishment

Graduates of this 18 week full time program will be highly qualified for entry-level positions as health care providers. They are qualified for positions in acute care and convalescent facilities as well as home care agencies and outpatient clinics. Critical thinking concepts and principles will serve as a framework for studying the nursing and behavioral sciences within a health promotion/risk reduction, multicultural based curriculum.

Program Authorization. This program is approved by the California State Department of Health Services. Successful completion qualifies the graduate to: 1) take the Nurse Assistant Competency Examination to obtain State Certification for practice; 2) obtain Home Health Aide Certification without further examination.

NOTE. The Department of Health Services, Nurse Assistant Certification Division requires fingerprinting and disclosure of misdemeanor and felony convictions for all applicants.

Enrollment Procedure. Applicants must take a placement test, attend a program orientation, and meet all program prerequisites. Enrollees must be in good physical and mental health and be over 18 years of age.

Learning Outcomes
Upon completion of this program, students will be able to:
- Demonstrate the fundamental nursing skills instructed in the State approved nursing assistant/home health aide training program.
• Use effective communication skills as appropriate while delivering care to clients and families in various nursing practice settings, and in collaboration with the health care team.

**Admission Requirements:**

1. Completion of ENGL L or ESL 140 or placement in ENGL 91, ENGL 86, or ESL 150.

2. A physical examination

3. Immunizations: Hepatitis B, Rubella, Varicella, Mumps, and T.B.

4. Current CPR certification

5. Department of Health Services Applications ($15 Fee)

6. DHS Application for Criminal Background Check ($32 Fee)

Successful completion of the following courses require an average final grade of “C” or higher (2.00 grade point average) to qualify for a Certificate of Accomplishment.

The minimum time for completion of this certificate is 1 semester. Completion time will vary based on student preparation and number of classes completed per semester.

**Courses Required for the Certificate of Accomplishment in Home Health Aide/Nurse Assistant**

**Required courses:**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td>VOCN 23</td>
<td>Nurse Assistant/Convalescent Care</td>
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<td>VOCN 24</td>
<td>Home Health Aide</td>
<td>2.50</td>
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<td>VOCN 25</td>
<td>Nurse Assistant/Acute Care</td>
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<td><strong>Total</strong></td>
<td></td>
<td><strong>13.00</strong></td>
</tr>
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