

Computer Science

School of Mathematics, Science, and Engineering

Dean Janet Mazzarellam M.A., Office 215A, 619-482-6344

Faculty Martha Carey, M.S.; Karen Cliffe, M.A.; Valentina Goldberg, M.A.; Peter Herrera, M.A.; Alexander Juden, M.S.; Andrew Medin, M.A.; Myriam Moody, M.A.; Maria Olivas, M.A.; Nghiep Quan, M.A.; Miriam Rasky, M.A.; Carl Scarbnick, Ph.D.; Bruce Smith, M.S.; Patrick Staley, M.S.; Romina Lingvall, M.A.; Val Villegas, M.A.; Coryna Holcombe, M.S.; Minerva Garcia, Ph.D.; Richard Fielding, M.S.; Silvia Nadalet, M.A.

Department Chair Richard Fielding, M.S.; Alexander Juden, M.S.

General Description

Computer science is the youngest of the sciences and focuses on the study of computer software, architecture, theory, and applications. This discipline explores computing theory and symbolic computation, the nature of computer architecture and operating systems, data communications, graphics, software engineering, mathematical applications, robotics, artificial intelligence, and system software.

There are many curriculum choices open to students interested in the science of computers. Students interested in the hardware aspect of computers should look at the vocational and transfer courses offered in engineering and electronics programs. Students interested in the operations aspect of computers should review the programs offered in computer information systems and computer literacy courses.

The Computer science program at SWC focuses on the programming or software aspect of computer science and offers three academic pathways from which to choose:

- * Transfer preparation associate degree for students who plan to transfer and major in computer science
- * Career/Technical associate degree for students seeking employment at the technician level in science or mathematics fields
- * Career/Technical certificate

Career Options

Below is a sample of the career options available for the computer science major. A few of these require an associate in arts degree, most require a bachelor's degree, and some require a graduate-level degree: computer scientist, systems analyst, computer service coordinator, software engineer, computer graphic specialist, high school or college teacher, data base administrator, researcher, program analyst, teleprocessing coordinator, knowledge engineer, technical control specialist, systems manager, data processing application programmer, information specialist and positions available in allied professions of business, industry, and scientific technology.

Degree/Certificate Options

Associate in Arts Degree: Transfer Preparation

Computer Science	01180
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Associate in Science Degree: Career/Technical

Computer Science	02190
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Certificate of Achievement

Computer Science	02191
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Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

ASSOCIATE IN ARTS DEGREE



Computer Science

Transfer Preparation * (Major Code: 01180)

Most careers in computer science require a bachelor's degree, and some require a graduate-level degree. The coursework for this associate degree prepares students who plan to transfer and major in computer science with the lower-division computer programming and mathematics coursework required by most colleges and universities.

The program of study listed below is for students interested in the programming or software aspect of computer science. It is designed to provide a strong foundation in mathematics, programming methodology and skills, and computer organization.

First Semester

MATH 130	Introduction to Computer Programming	4
MATH 250	Analytic Geometry and Calculus I	5

Second Semester

MATH 140	Data Structures and Algorithms	4
MATH 251	Analytic Geometry and Calculus II	4

Third Semester

MATH 252	Analytic Geometry and Calculus III	4
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Fourth Semester

MATH 254	Introduction to Linear Algebra	4
MATH 260	Discrete Mathematics	3

Total units	28
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Recommended Electives: MATH 253; PHYS 270, 272 and 274 or CHEM 200 and 210 or BIOL 210, 211 and 212.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 49.

- * Students planning to transfer to a four-year college or university should complete courses specific to the transfer institution of choice. University requirements vary from institution to institution and are subject to change. Therefore, it is important to verify transfer major preparation and general education requirements through consultation with a counselor in either the Counseling Center or Transfer Center. See catalog TRANSFER COURSES INFORMATION section on page 32 for further information.

ASSOCIATE IN SCIENCE DEGREE

Computer Science

Career/Technical (Major Code: 02190)

The program of study listed below is designed for students who seek employment at the technician level in the science or mathematics fields. Completion of this program of study does not satisfy the lower-division requirements for transfer to colleges or universities. Students who plan to transfer should complete the courses listed under the Computer Science Associate in Arts degree program.

First Semester

MATH 119	Elementary Statistics	4
MATH 130	Introduction to Computer Programming	4

Second Semester

MATH 140	Data Structures and Algorithms	4
MATH 250	Analytic Geometry and Calculus I	5

Third Semester

MATH 230	Computer Organization and Architecture	4
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Total units **21**

Recommended Electives: MATH 251, 252, 253, 254, 260.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 49.

CERTIFICATE

Computer Science

Certificate of Achievement

Career/Technical (Major Code: 02191)

First Semester

MATH 119	Elementary Statistics	4
MATH 130	Introduction to Computer Programming	4

Second Semester

MATH 140	Data Structures and Algorithms	4
MATH 250	Analytic Geometry and Calculus I	5

Third Semester

MATH 230	Computer Organization and Architecture	4
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Total units **21**

Construction Inspection

School of Health, Exercise Science, Athletics and Applied Technology

Dean Terry Davis, M.H.A., Office 1000K, 619-482-6551

Department Chair David Preciado, A.A.

General Description

Construction Inspection is the study of the design, fabrication, codes, inspection processes, and licensure governing the construction of structures, both residential and commercial. This program explores blueprint reading, site plans, cost estimation, construction materials, soil engineering, mechanical construction, inspection procedure, building codes, quality control management, and license laws for contractors.

Career Options

Below is a sample of the options for construction inspection majors. Most require a certificate achievement or an associate in science degree, some require a bachelor's degree, and a few of these may require a graduate-level degree: construction inspector, estimator, apprentice as a carpenter, electrician, plumber, mason, cement finisher, roofer, painter, licensed contractor, soil engineer, architect, project engineer, quality control manager, vocational teacher, and positions available in all professions of manufacturing, retail and wholesale, business, industry, and the military or government.

Degree/Certificate Options

Associate in Science Degree: Career/Technical

Construction Inspection	02880
Construction Management	02881

Certificates of Achievement	
Construction Inspection	02882
Construction Management	02883

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.



Some courses within this program may require additional coursework that must be completed prior to enrollment in those courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.