CINE 122   Identity in American Film   (3)
3 hours lecture
Transfer acceptability: CSU; UC
A critical study of how American identity is formed in relation to American cinema. Areas of investigation include race, class, gender, sexual orientation, age, and ethnicity. Screening and analysis of films will be undertaken to investigate how select films reflect, celebrate, modify, and criticize mainstream American values. Off campus programs may be required.

CINE 125   Beginning Film and Video Field Production   (3)
1½ hours lecture - 4½ hours laboratory
Note: Cross listed as RTV 125
Transfer acceptability: CSU; UC – CINE/RTV 125 and 225 combined:
maximum credit, one course
A study of the basic techniques of field production using Super 8 or 16mm film or analog or digital video equipment as applied to various cinematic forms. The student will work with a team on a project through the preproduction, shooting, and postproduction phases of narrative storytelling for the screen.

CINE 225   Intermediate Film and Video Field Production   (3)
1½ hours lecture - 4½ hours laboratory
Prerequisite: A minimum grade of 'C' in CINE/RTV 125, and a minimum grade of 'C' in RTV 110, or concurrent enrollment in RTV 110
Note: Cross listed as RTV 225
Transfer acceptability: CSU; UC – CINE/RTV 125 and 225 combined: maximum credit, one course
Principles, techniques, and theory of field production using digital or analog video or 16mm film equipment. Theory and practice of off-line linear or nonlinear editing.

CINE 296   Special Projects   (1, 2, 3)
3, 6, or 9 hours laboratory
Prerequisite: A minimum grade of 'C' in CINE 115/RTV 115 or CINE 225/RTV 225
Note: May be taken 2 times
Transfer acceptability: CSU; UC – Credit determined by UC upon review of course syllabus.
Independent work on an original film project. The instructor will approve the work plan and afford personal guidance in its completion. Normally a student will make a fully satisfactory and acceptable screenplay or short film.

Communications (COMM)

See also Cinema, Journalism, and Radio/Television

Contact the Communications Department for further information.
(760) 744-1150, ext. 2440
Office: U-12
For transfer information, consult a Palomar College Counselor.

Certificates of Proficiency -
Certificate of Proficiency requirements are listed in Section 6 (green pages).
• Public Relations

Public Relations

This certificate includes a selection of courses that provides academic preparation to individuals who are seeking employment, or are currently employed, in public relations. Major growth in this industry is anticipated.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
COMM 104	Principles of Public Relations	3
GCIP/		
R GCIP 149	Page Layout and Design I	4
JOUR 101	News Writing and Reporting	3
JOUR 105	Newspaper Production	3
RTV/ENTT 120	Digital Television Production	3
TOTAL UNITS		**16**

COURSE OFFERINGS

COMM 100   Mass Media in America   (3)
3 hours lecture
Transfer acceptability: CSU; UC – COMM 100 and 105 combined: maximum credit, one course
A multi media approach to a comparative survey of communication in 20th century America, studying the history, structure, and social impact of television, cinema, radio, journalism, and new forms of communication.

COMM 104   Principles of Public Relations   (3)
3 hours lecture
Transfer acceptability: CSU
A survey of public relations history, theories, and practices with emphasis on applications to business, public agencies and institutions. A practical approach to using the media, creating press releases, organizing and executing campaigns, and promoting favorable relations with various segments of the public.

COMM 105   Race, Gender and Media Effects   (3)
3 hours lecture
Transfer acceptability: CSU; UC – COMM 100 and 105 combined: maximum credit, one course
An analysis of the changing social and ethical issues that confront both our mass communication systems and the public. The media's role in reflecting, creating, and controlling human values, both personal and social. Examination of images of women, African-Americans, Native Americans, Asian-Americans, and Latinos in the mass media and their sociological consequences.

COMM 144   Exploring the Effects of Media on Young Children   (.5)
½ hour lecture
Note: Cross listed as CHDV 144
Transfer acceptability: CSU
Explores the effects of media consumption on children's social-emotional, physical, and cognitive development. Research behind the risks associated with television and computer use and popular culture saturation for young children. Techniques for addressing media consumption with children, parents and families.

Computer Science and Information Systems - Computer Science (CSCI)

See also CSIS - Database, CSIS - Information Technology, CSIS - Networking, and CSIS - Web Technology

Contact the Computer Science and Information Systems Department for further information.
(760) 744-1150, ext. 2387
Office: MD-275
http://www.palomar.edu/csis

Associate in Arts Degrees -
AA Degree requirements are listed in Section 6 (green pages).
• Computer Science
• Computer Science with Emphasis in Video Gaming

Certificates of Achievement -
Certificate of Achievement requirements are listed in Section 6 (green pages).
• Computer Science
• Computer Science with Emphasis in Video Gaming

Certificates of Proficiency -
Certificate of Proficiency requirements are listed in Section 6 (green pages).
• Java Software Development
• Linux
• Mac Programming
• Video Game Artist
• Video Game Developer

PROGRAMS OF STUDY

Computer Science

Computer Science is the study and design of computer systems: both hardware and software. Computer scientists are primarily concerned with the design of algorithms, languages, hardware architectures, systems software, applications software and tools. Applications range from simple game playing to the control of space vehicles, power plants and factories, from banking machines to intelligent medical diagnosis systems. Computer Science professionals are concerned with the creation of computer and information systems for the benefit of society.

Emphasis in the Computer Science program is placed on the ability to solve problems and think independently. The program offers a foundation in data structures, computer architecture, software design, algorithms, programming languages and object-oriented programming. See a Counselor for additional university transfer requirements in this major.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
CSCI 108	Survey of Computer Science	4
CSCI 110	Programming for Computer Science	4
CSCI 210	Data Structures	4.5
CSCI 212	Machine Organization and Assembler Language	4
CSCI 220	C Programming	4
CSCI 222	C++ and Object-Oriented Programming	4.5
CSCI 230	Java GUI Programming	3

Group One Electives (Select 3 courses)

CSCI 130	Linux Fundamentals	3
CSCI 240	Windows API Programming	4
CSCI 260	Video Game Programming I	4
CSCI 270	Mac OS Cocoa Programming	3
CSDB 140	Introduction to Oracle	3
CSIT 180	C# Programming I	3
CSIT 290	Systems Analysis and Design	4
CSNT 111	Networking Fundamentals	4

Group Two Electives (Select 1 Course)

CSCI 170	BSD Unix for Mac	3
CSCI 171	Mac OS AppleScripting	2.5
CSCI 172	Objective-C Programming for Mac	3
CSCI 271	OpenGL for Mac OS	3
CSCI 275	iPhone/iPad SDK Programming	3
CSCI 132	Linux Shell Scripting	3
CSCI 232	Java Mobile Programming	3
MATH 245	Discrete Mathematics	3
TOTAL UNITS		**39.5 – 43**

Computer Science with Emphasis in Video Gaming

Computer Science is the study and design of computer systems: both hardware and software. Computer scientists are primarily concerned with the design of algorithms, languages, hardware architectures, systems software, applications software and tools. Applications range from simple game playing to the control of space vehicles, power plants and factories, from banking machines to intelligent medical diagnosis systems. Computer Science professionals are concerned with the creation of computer and information systems for the benefit of society.

Emphasis in the Computer Science program is placed on the ability to solve problems and think independently. The program offers a foundation in data structures, computer architecture, software design, algorithms, programming languages, and object-oriented programming. This program also introduces students to the video game industry, video game design and programming.

See a Counselor for additional university transfer requirements in this major.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
CSCI 108	Survey of Computer Science	4
CSCI 110	Programming for Computer Science	4
CSCI 210	Data Structures	4.5
CSCI 212	Machine Organization and Assembler Language	4
CSCI 220	C Programming	4
CSCI 222	C++ and Object-Oriented Programming	4.5
CSCI 230	Java GUI Programming	3

Required Video Game Courses

CSCI 160	Overview of the Video Game Industry	4
CSCI 161	Video Game Design	4
CSCI 260	Video Game Programming I	4
CSCI 261	Video Game Programming II	4

Electives (select 1 course)

CSDB 140	Introduction to Oracle	3
CSIT 290	Systems Analysis and Design	4
CSNT 111	Networking Fundamentals	4
TOTAL UNITS		**47 - 48**

Java Software Development

The Java Software Development certificate program is designed to introduce the fundamental concepts of object-oriented programming and the Java programming language along with standard Java application programming interface (API) packages. Learn to develop applications that run on servers as well as cross-platform applications (applications that can run on PCs, PDAs, or other devices). Gain an understanding of data structures, functionality, and Java's user-friendly design tools.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
CSCI 110	Programming for Computer Science	4
CSCI 210	Data Structures	4.5
CSCI 230	Java GUI Programming	3
CSCI 232	Java Mobile Programming	3
TOTAL UNITS		**14.5**

Linux

This certificate program in Linux/UNIX is designed for those currently in the computer industry who want to upgrade their skills, and for those with basic computer literacy who want to enter this fast-growing field. Fluency in Linux/UNIX can make the difference in winning a job or promotion, as more personnel directors regard knowledge and fluency in Linux/UNIX principles as key criteria for job recruitment and selection.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
CSCI 130	Linux Fundamentals	3
CSCI 132	Linux Shell Scripting	3
CSNT 140	Linux Administration	3
CSNT 141	Linux Networking and Security	3
CSWB 160	Perl Programming	2
TOTAL UNITS		**14**

Mac Programming

The Mac Programming certificate is designed for those wishing to explore Mac OS technologies. The Unix foundation of Mac OS, along with its powerful native application environments, cutting-edge development tools, and support of open source and open standards—make it a powerful, stable, and versatile development environment, capable of supporting development for mutliple deployment targets.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
CSCI 170	BSD Unix for Mac	3
CSCI 172	Objective-C Programming for Mac	3
CSCI 270	Mac OS Cocoa Programming	3
CSCI 271	OpenGL for Mac OS	3
CSCI 275	iPhone/iPad SDK Programming	3
TOTAL UNITS		**15**

Video Game Artist

This certificate program introduces students to the video game industry, video game design, and the creation of both 2D and 3D artwork for video games.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
CSCI 160	Overview of the Video Game Industry	4
CSCI 161	Video Game Design	4
ARTI 246 or	Digital 3D Design and Modeling	
DT 180 or	3D Studio Max – Intro 3D Modeling/Animation	
DT 182	3D Studio Max – Adv 3D Modeling/Animation	3
ARTD 220 or	Motion Design	
ARTI 247 or	Digital 3D Design and Animation	
DT 184 or	Real Time 3D Technical/Game Animation	
GCMW 204	Motion Graphics for Multimedia	2 - 4
TOTAL UNITS		**13 - 15**

Video Game Artist Certificate of Proficiency is also listed under Graphic Communications - Multimedia and Web.

Video Game Developer

The Video Game Developer certificate program introduces students to the video game industry, video game design and programming.

CERTIFICATE OF PROFICIENCY

Program Requirements		Units
CSCI 160	Overview of the Video Game Industry	4
CSCI 161	Video Game Design	4
CSCI 260	Video Game Programming I	4
CSCI 261	Video Game Programming II	4
TOTAL UNITS		**16**

COURSE OFFERINGS

CSCI 108   Survey of Computer Science   (4)
3½ hours lecture - 1½ hours laboratory
Transfer acceptability: *CSU; UC – CSCI 108 and 110 combined: maximum credit, one course*
An overview of the discipline of computer science including such topics as the history of computer science; machine architecture; data storage and manipulation; operating software engineering; data structures; database and information retrieval; data communications; artificial intelligence; theory of computation; social legal and ethical issues. Includes hands-on laboratory experience reinforcing the lecture material.

CSCI 110   Programming for Computer Science   (4)
3½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 108*
Transfer acceptability: *CSU; UC*
Introduces object-oriented programming and design using Java. Focuses on implementation and testing of software in a platform-independent, event-driven, graphical user interface environment. Covers basic concepts of data representation, user interface design, and software engineering.

CSCI 130   Linux Fundamentals   (3)
2 hours lecture - 3 hours laboratory
Transfer acceptability: *CSU*
An introduction to fundamental end-user and administrative tools in Red Hat Enterprise Linux, designed for students with little or no command-line Linux or UNIX experience.

CSCI 132   Linux Shell Scripting   (3)
2 hours lecture - 3 hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 130*
Transfer acceptability: *CSU*
Intermediate concepts of shell script programming, advanced utilities, file management, and alternative editors. Includes usage of sed (stream editor), awk (a UNIX/Linux scripting language), and graphical user interfaces. Introduction to UNIX/Linux networking concepts.

CSCI 146   FORTRAN 90 for Mathematics and Science   (3)
2 hours lecture - 3 hours laboratory
Prerequisite: *A minimum grade of 'C' in MATH 135 or MATH 110 and 115, or a passing grade on the appropriate placement test*
Note: *Cross listed as Math 146*
Transfer acceptability: *CSU; UC*
Programming in FORTRAN 90 to solve typical problems in mathematics, computer science, physical sciences, and engineering. Programming is done on a PC.

CSCI 160   Overview of the Video Game Industry   (4)
4 hours lecture
Transfer acceptability: *CSU*
Survey of the historical, technological, business, social and psychological aspects of the video game industry. Intended for those considering a career in the video game industry, or those with a strong interest in video games and how they are made.

CSCI 161   Video Game Design   (4)
4 hours lecture
Transfer acceptability: *CSU*
An introduction to video game design, including the study of various genres of games, and the preparation of a game design document. Intended for those considering a career in the video game industry, or those with a strong interest in video games and how they are made.

CSCI 170   BSD Unix for Mac   (3)
2½ hours lecture - 1½ hours laboratory
Transfer acceptability: *CSU*
Introduction to BSD 4.3 UNIX (bash, bourne, tsh, csh) for command line terminal access and shell scripting on a Macintosh system.

CSCI 171   Mac OS AppleScripting   (2.5)
2 hours lecture - 1½ hours laboratory
Transfer acceptability: *CSU*
Introduction to scripting using Apple Inc.'s AppleScript Studio. Includes hands-on laboratory experience reinforcing the lecture material.

CSCI 172   Objective-C Programming for Mac   (3)
2½ hours lecture - 1½ hours laboratory
Transfer acceptability: *CSU*
Prepares students for application development on the iPhone and Macintosh platforms. Students should have some familiarity with a formal programming language.

CSCI 197   Topics in Computer Science   (.5 - 4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture and/or laboratory may be scheduled by the department. Refer to Class Schedule.
Note: *May be taken 4 times*
Transfer acceptability: *CSU; UC - Credit determined by UC upon review of course syllabus.*
Topics in Computer Science. See class schedule for specific topic offered. Course title will designate subject covered.

CSCI 210   Data Structures   (4.5)
4 hours lecture - 2 hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 110*
Transfer acceptability: *CSU; UC*
A systematic study of data structures, including arrays, stacks, recursion, queues, linear and non-linear linked lists, binary trees, hashing, comparative study of searching and sorting algorithms, graphs, Huffman codes, introductory analysis of algorithms, introduction to the complexity of algorithms including big "O" notation, time and space requirements, and object-oriented design of abstract data types. Focus on object-oriented programming and its principles of objects, classes, encapsulation, inheritance and its relationship to the Java programming language. Includes hands-on laboratory experience reinforcing the lecture material.

CSCI 212   Machine Organization and Assembler Language   (4)
3 hours lecture - 3 hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 110*
Transfer acceptability: *CSU; UC*
An introduction to Assembler Language programming. Language syntax is covered, together with a study of the instruction set mnemonics, segment, index, pointer, general purpose and flag registers. A variety of memory addressing techniques will be covered, as well as stack operations, particularly those associated with passing parameters to subroutine calls. Also includes I/O to screen, printer, and disk interfaces. Emphasis will be placed on interaction between the student's code and the operating system's supplied functions for I/O to peripheral devices. Use of editor and debugging tools will also be addressed.

CSCI 220   C Programming   (4)
3½ hours lecture - 1½ hours laboratory
Transfer acceptability: *CSU; UC*
An introduction to the C programming language emphasizing top-down design and principles of structured programming. Includes hands-on laboratory experience reinforcing the lecture material. Language syntax is covered, together with operators, standard control structures, functions, input/output, arrays, strings, file manipulation, preprocessor, pointers, structures and dynamic variables.

CSCI 222   C++ and Object Oriented Programming   (4.5)
4 hours lecture - 2 hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 110 or CSCI 220*
Transfer acceptability: *CSU; UC*
Detailed study of the C++ programming language and its support for data abstraction and object-oriented programming. Presents an introduction to the fundamental elements of object-oriented programming including encapsulation, classes, inheritance, polymorphism, templates, and exceptions.

CSCI 230   Java GUI Programming   (3)
2 hours lecture- 3 hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 210*
Transfer acceptability: *CSU*
Graphical User Interface programming using Java. Emphasizing event-driven programming and the code to create GUI components such as buttons, text area, scrollable views. Includes hands-on laboratory experience reinforcing the lecture material.

CSCI 232   Java Mobile Programming   (3)
2 hours lecture - 3 hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 230*
Transfer acceptability: *CSU*
Focus on Java programming for mobile devices, using Java's principles of objects, classes, encapsulation, inheritance, and simple graphical user interfaces suitable for various mobile technologies. Use the principles of modularity, data abstraction, abstract data types as they apply to programs developed using the Java Mobile Environment's packages. Focus on the definition, implementation, and applications of simple Java programs using this environment. Includes hands-on laboratory experience reinforcing the lecture materials.

CSCI 240   Windows API Programming   (4)
3½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 220*
Transfer acceptability: *CSU*

An introduction to the fundamental concepts of Windows programming which will enable students to develop Windows applications using a graphical user interface. Includes a detailed study of the Windows Application Programming Interface.

CSCI 260   Video Game Programming I   (4)
3½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 222*
Note: *May be taken 4 times; maximum of 4 completions in any combination of CSCI 260, 261*
Transfer acceptability: *CSU*
Introduction to the programming of video games. Course will explore 3D game development with Microsoft's DirectX 9.0. Students learn how to create a 3D game from scratch. They learn the basics of designing and using a 3D engine. Includes hands-on laboratory experience reinforcing the lecture, text, and course materials.

CSCI 261   Video Game Programming II   (4)
3½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 260*
Note: *May be taken 4 times; maximum of 4 completions in any combination of CSCI 260, 261*
Transfer acceptability: *CSU*
Builds on basic 3D game programming skills acquired during Video Game Programming I. Focuses on sound, input, networking and methods such as artificial intelligence to drive these games. Includes hands-on laboratory experience reinforcing the lecture, text and course materials.

CSCI 270   Mac OS Cocoa Programming   (3)
2½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 110 or CSCI 220*
Transfer acceptability: *CSU*
Introduction to programming using Objective-C language, Apple's X-Code and Interface Builder for creating applications targeting the Macintosh platform with event-driven structures that support the development of graphical user interfaces. Includes hands-on laboratory experience reinforcing the lecture material.

CSCI 271   OpenGL for Mac OS   (3)
2½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 270*
Transfer acceptability: *CSU*
Macintosh OS X Cocoa Software Development Environment. The OpenGL frameworks are geared primarily toward game development or applications that require high frame rates. OpenGL is a C-based interface used to create 2D and 3D content on Macintosh desktop computers. iPhone OS supports OpenGL drawing through the OpenGL ES framework, which provides support for both the OpenGL ES 2.0 and OpenGL ES v1.1 specifications. OpenGL ES is designed specifically for use on embedded hardware systems and differs in many ways from desktop versions of OpenGL.

CSCI 275   iPhone/iPad SDK Programming   (3)
2½ hours lecture - 1½ hours laboratory
Prerequisite: *A minimum grade of 'C' in CSCI 172*
Transfer acceptability: *CSU*
Focus on the tools and APIs required to build applications for iOS and the iPhone/iPad platform using the iPhone/iPad SDK. User interface designs for iOS mobile devices and unique user interactions using multitouch technologies. Object-oriented design using model-view-controller pattern, memory management, and Objective-C programming language. iPhone/iPad APIs and tools including Xcode, Interface Builder and Instruments on Mac OS X.

CSCI 295   Directed Study in Computer Science   (1, 2, 3)
3, 6, or 9 hours laboratory
Prerequisite: *Approval of project or research by department chairperson/director*
Note: *May be taken 4 times for a maximum of 6 units*
Transfer acceptability: *CSU; UC – Credit determined by UC upon review of course syllabus*
Designed for the student who has demonstrated a proficiency in computer science subjects and the initiative to work independently on a particular sustained project which does not fit into the context of regularly scheduled classes.