

CGD 9 Advanced Computer Graphics for Design Application II**Units:** 4 **Hours:** 2 Lecture, 6 Laboratory**Advisory:** Satisfactory score on the English placement exam or a grade C or better in English 250, completion of Mathematics 233 or satisfactory Mathematics placement. Completion of CGD 2 and CGD 8 with a grade of C or better.**Transferable:** CSU

A course designed to the student's major study area using computer graphics. The student can combine various content areas for a specific application. An open entry/exit supervised class which allows for a shortened semester schedule with a corresponding increase in lab time. The student is allowed an individual or a cooperative environment on selected projects. Students may concurrently enroll in CGD 110 and CGD 4.

CGD 30 Residential Design**Units:** 4 **Hours:** 2 Lecture, 6 Laboratory**Advisory:** Eligible for English 250, 260 and Mathematics 233.**Transferable:** CSU

CAD applications in residential design. Concept drawings, working drawings, documentation, and specifications. Student may concurrently enroll in CGD 110.

CGD 110 Computer Graphics Lab**Units:** 1-4 **Hours:** 12 Laboratory**Advisory:** Concurrent enrollment in corresponding computer graphic and design classes.**Transferable:** CSU

Structured for students concurrently enrolled in computer graphics and art classes. Provides supervised practice and individualized computer assisted learning on software applications and techniques commonly found in the computer graphic design field. This is an open entry/exit class and may be repeated three times. This course has the option of a letter grade or pass/no pass.

CGD 160 Technical Manual Desktop Publishing/ Graphics**Units:** 4 **Hours:** 2 Lecture, 6 Laboratory**Advisory:** Eligible for English 250, 260 and Mathematics 233. Familiarity with word processing, keyboarding, and DOS file management.**Transferable:** CSU

Combines graphic arts, CAD, and desktop software. Topics include graphic design, drawing, text managing, typography, image scanning, clip art, and technical document publication. This is an open entry/exit class.

CGD 190 Occupational Work Experience/Computer Graphics & Design**Units:** 1-4 **Hours:** 20 Laboratory**Required:** Declared vocational major. Concurrent enrollment in seven or more units (including CWE units, except for summer school. For summer school enrollment in one other class is required). Minimum 2.0 G.P.A.**Transferable:** CSU

College credit for learning experience obtained on the job in accordance with a training plan developed cooperatively between the employer, college and student. 75 hours per semester per unit or 60 hours per semester for unpaid experience. This is a pass/no pass course. May be taken for a maximum of 16 work experience units.

COMPUTER SCIENCE & INFORMATION SYSTEMS

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CSIS 1 Computer Literacy - MS Office**Units:** 2 **Hours:** 2 Lecture**Advisory:** Eligible for English 250 and English 260; completion of CSIS 122.**Transferable:** CSU; UC; GAV-GE: E2; CAN: CSCI 2

An introduction to terminology, design, operation for the novice user. Student will gain experience using the Internet for searches and email. They will complete projects using various software including word processing, spreadsheets, database, presentation graphics, and integration. This course has the option of a letter grade or pass/no pass.

CSIS 2 Computers in Business - MS Office**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** Eligible for Mathematics 233, English 260 and English 250, and CSIS 122**Transferable:** CSU; GAV-GE: E2; CAN: BUS 6

Introduction to computerized business data processing, information management systems, computer hardware, office automation, telecommunications, computer languages, systems analysis and design; hands on experience with common business software packages including word processing, spreadsheets, data base management, presentation graphics as well as systems software and Internet applications. This course has the option of a letter grade or pass/no pass.

CSIS 2L Computers in Business Lab - MS Office**Units:** 1 **Hours:** 3 Laboratory**Transferable:** CSU

Computer Lab emphasizing business application in Microsoft Word, Excel, Access, Power Point and Integration. Internet searches are included. This course has the option of a letter grade or pass/no pass. Since supervised repetition and practice enhance skills/proficiencies, This course may be repeated once for credit.

CSIS 3 Research Skills**Units:** 2 **Hours:** 2 Lecture**Advisory:** Eligible for English 250 and 260.**Transferable:** CSU

Research and evaluation skills using the Internet and other electronic resources, as well as traditional printed materials. Also listed as LIB 3. This course has the option of a letter grade or pass/no pass. May be repeated once for credit.

CSIS 5 C++ Scientific Programming**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Prerequisite:** Mathematics 1A**Advisory:** Completion of CSIS 10.**Transferable:** CSU; UC; CAN: CSCI 4

An introduction to computer problem solving and programming using the C++ language for science and engineering majors. Students will write programs for a variety of scientific and mathematical applications. This course has the option of a letter grade or pass/no pass.

CSIS 6 Web Page Authoring I**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 1 or CSIS 2 or CSIS 3/LIB 3 advised.**Transferable:** CSU; GAV-GE: E2

An introduction to using Hypertext Mark-Up Language (HTML) and Extensible HTML (XHTML) to create web pages which can be uploaded and displayed on the World Wide Web. Students will use HTML/XHTML to create web pages with text in various sizes and colors, links to other sites, background color or patterns, graphics, tables and mailto links. Principles of design and color as they apply to screen presentations will be included. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit. Also listed as LIB 6 and DM 6.

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CSIS 7 Web Page Authoring II**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 6**Transferable:** CSU

This course is a continuation of CSIS 6, Web Page Authoring I. Topics that will be covered include XHTML, frames, advanced tables, forms, scripting languages, image maps, Cascading Style Sheets (CSS), and new trends in web page technology. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit. This course is also listed as DM 7.

CSIS 8 Introduction to the Internet**Units:** 1 **Hours:** 3 Lecture**Advisory:** CSIS 124**Transferable:** CSU; GAV-GE: E2

This course will provide students the opportunity to learn to use the Internet and the World Wide Web. Topics to be covered include history of the Internet and development of the WWW, web browsers, search engines, tools to develop web pages, how to get connected and local Internet providers. This is a pass/no pass course. May be repeated three times for credit.

CSIS 9 Computer Education for Teachers**Units:** 3 **Hours:** 3 Lecture**Advisory:** CSIS 122 Computer Keyboarding, or equivalent; English 250 with a grade of C or better.**Transferable:** CSU

The history, uses and development of computers in education. Basic computer skills and terminology will be taught in context of teacher education. Students who successfully complete this course will understand general and specific skills and knowledge required to meet the Technology Standard for Multiple and Single Subject Credential Candidates. This course has the option of a letter grade or pass/no pass. This course is also listed as CD 12.

CSIS 10 BASIC Programming**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 1 or CSIS 2 or equivalent experience.**Transferable:** CSU; UC

This course is an introduction to programming using BASIC. No previous programming background is assumed. This is a good class for those new to programming and recommended for non-programmers that want to take other programming classes. This course has the option of a letter grade or pass/no pass.

CSIS 12 Assembly Language Programming**Units:** 3 **Hours:** 3 Lecture**Corequisite:** CSIS 12L Assembly Language Programming Lab**Advisory:** CSIS 45 (C++ Programming) or programming experience. Math 233 (Intermediate Algebra)**Transferable:** CSU; UC

Fundamentals of assembly language programming concepts and techniques. Topics include internal representation of data, arithmetic operations, logic statements, and general assembly language commands. Introduce low level language architecture including assemblers, linkage editors, and loaders. This course has the option of a letter grade or pass/no pass.

CSIS 12L Assembly Language Programming Lab**Units:** 1 **Hours:** 3 Laboratory**Corequisite:** CSIS 12 Assembly Language Programming**Transferable:** CSU; UC

Supplemental practice in coursework associated with this course is provided. Concurrent enrollment in CSIS 12 is required. This is a pass/no pass course.

CSIS 18 UNIX/C++ Programming**Units:** 3 **Hours:** 3 Lecture**Corequisite:** CSIS 18L UNIX/C++ Programming Lab**Advisory:** CSIS 48 UNIX Operating System, CSIS 10 BASIC Programming or other programming experience.**Transferable:** CSU; UC

An introduction to the C++ programming language and the UNIX operating system. Topics include programming on a UNIX system, including C/C++ language, shell programming, and the interface between C++ and UNIX. This course has the option of a letter grade or pass/no pass. Concurrent enrollment in CSIS 18L is required.

CSIS 18L UNIX/C++ Programming Lab**Units:** 1 **Hours:** 3 Laboratory**Corequisite:** CSIS 18 UNIX/C++ Programming**Transferable:** CSU; UC

Supplemental practice in coursework associated with this course is provided. Concurrent enrollment in CSIS 18 is required. This course has the option of a letter grade or pass/no pass.

CSIS 24 Java Programming I**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 45 C++ Programming or equivalent programming experience.**Transferable:** CSU; UC

Introduction to Java programming. Includes learning the Java environment, using and creating Java applets, and writing stand-alone applications. Covers the Java environment, object-oriented programming, language basics, classes, interfaces, packages, threads, and exceptions. This course has the option of a letter grade or pass/no pass.

CSIS 26 Discrete Mathematics**Units:** 4 **Hours:** 4 Lecture**Prerequisite:** Mathematics 10 with a grade of 'C' or better or equivalent.**Transferable:** CSU; UC; CSU-GE: B4; IGETC: 2A; GAV-GE: B4

Topics covered include set theory, logic, relations and functions, mathematical induction and recursion, combinatorics, discrete probability, trees and graphs, analysis of algorithms, algebraic structures. Emphasis on topics of interest to computer science majors. This course has the option of a letter grade or pass/no pass. Also listed as MATH 26.

CSIS 43 C Programming**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 10 BASIC Programming, or other programming experience.**Transferable:** CSU; UC

This course will become active for the fall 2007 semester.

This course introduces computer programming using the C programming language. Topics include variable and constant declarations, arithmetic operations, selection, input/output operations, repetition, functions and recursion, arrays, pointers, and other related topics. This course has the option of a letter grade or pass/no pass.

CSIS 44 C# .NET Programming**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 45 C++ Programming**Transferable:** CSU

This class will teach the program using the state of the art C# (C Sharp) language provided in the Microsoft .NET framework. You will learn about variables and constants, expressions and statements, operators and namespaces. Most important, you will learn how to create classes and instantiate objects. This course will provide a solid foundation for exploring the .NET framework as well as advanced topics in C#. This course has the option of a letter grade or pass/no pass.

CSIS 45 C++ Programming I**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 10 or equivalent. Math 205 (Elementary Algebra)**Transferable:** CSU; UC; GAV-GE: E2; CAN: CSCI 18

An introduction to the concepts and methods of computer programming using C++. Students will be introduced to procedural and object-oriented programming design methodology. Topics covered include variable and constant declarations, selection statements, repetition, functions and recursion, arrays, strings, pointers, and an introduction to classes and objects. This course will prepare students for the Programming II class. This course has the option of a letter grade or pass/no pass.

CSIS 46 C++ Programming II**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 45 or CSIS 5, and Mathematics 205.**Transferable:** CSU; UC

This course is a continuation of CSIS 45, intended for students majoring in programming and/or planning to transfer to a 4-year college or university Computer Science program. The course will cover topics discussed in CSIS 45 in more detail. In addition the course will cover more advanced C techniques such as pointers, recursion, and linked lists. Special emphasis will be placed on C++ features such as classes, objects, templates and operator overloading. This course has the option of a letter grade or pass/no pass.

CSIS 47 Visual C++ Programming**Units:** 3 **Hours:** 3 Lecture**Advisory:** CSIS 45**Transferable:** CSU; UC

Visual C++ Programming to create professional GUI based applications using app and class wizard, common controls, dialogs, menus, tool bars, status bars, file mechanism, and custom controls. This course has the option of a letter grade or pass/no pass.

CSIS 48 UNIX/Linux Operating System**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2 or equivalent computer experience.**Transferable:** CSU; UC

This course will provide the basics of the UNIX/Linux operating system, including the history and the use of UNIX/Linux with hands-on experience using commands and files. Topics to be covered include basic UNIX/Linux commands, text editing, files and directories, electronic mail, pipes and filters, and shell programming. This course has the option of a letter grade or pass/no pass.

CSIS 49 UNIX/Linux Shell Programming**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 48**Transferable:** CSU; UC

A beginning course in UNIX/Linux shell programming using different commands including awk, sed, and Perl. The course will cover theory and concepts including interpretation of different quote characters, shell variables, decision-making commands, and looping mechanism. This course has the option of a letter grade or pass/no pass.

CSIS 51 Visual Basic .NET Programming**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 10 or equivalent.**Transferable:** CSU; UC; GAV-GE: E2

An introduction to the GUI software applications using Microsoft Visual Basic .NET. This course will give students the opportunity to learn how to create applications using Visual Basic programming in the .NET framework. This course will show the students to use forms, boxes, buttons, labels, menus, scroll bars, and drawing objects. This course will show the students how to develop professional looking and deployable Visual Basic .NET applications. This course has the option of a letter grade or pass/no pass. This course may be repeated three times for credit.

CSIS 52 Linux/UNIX System Administration**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 48**Transferable:** CSU

This course introduces students to the fundamentals of Linux/UNIX system administration: the setup, configuration and maintenance of Linux/UNIX servers. Topics include managing file systems, devices and user accounts, maintaining system backups and system logs, and basic system security. Students will configure a web-server, install programs, configure networking, and learn to integrate new hardware into a system. This course has the option of a letter grade or pass/no pass. Previously CSIS 152.

CSIS 53 UNIX/Linux Networking**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 48 and CSIS 175A**Transferable:** CSU

This class prepares students to perform the tasks and understand the strategies of UNIX/Linux network administration including DNS, various networking protocols, firewalls, proxy servers, virtual private networks, network file systems, file transfer protocols, email configuration, web servers/browsers and various network monitoring tools. This course has the option of a letter grade or pass/no pass. May be repeated two times for credit.

CSIS 54 Perl Programming**Units:** 3 **Hours:** 3 Lecture**Corequisite:** CSIS 54L Perl Programming Lab**Advisory:** CSIS 45 C++ Programming or equivalent programming experience.**Transferable:** CSU; UC

Introduction to the interpreted language called PERL, the Practical Extraction and Report Language. Writing of programs that perform various tasks, including text, file and process manipulation. Semantics and syntax of the Perl language, including discussion of the practical kinds of problems that Perl can solve and provides examples. This course has the option of a letter grade or pass/no pass. Concurrent enrollment in CSIS 54L is required.

CSIS 54L Perl Programming Lab**Units:** 1 **Hours:** 3 Laboratory**Corequisite:** CSIS 54 Perl Programming**Transferable:** CSU; UC

Supplemental practice in coursework associated with this course is provided. Concurrent enrollment in CSIS 54 is required.

CSIS 56 Game Programming**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 51 Visual Basic Programming or similar programming experience.**Transferable:** CSU

This course is an introduction to game programming using Windows game programming tools, using graphics, animation, sound and input devices. The class is a hands-on class where the student will use the basic tools and techniques to create original games. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 61 Introduction to Geographic Information Systems**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2 or equivalent computer experience.**Transferable:** CSU; UC

The Geographic Information Systems (GIS) class introduces students to and teaches them how to use desktop GIS software. GIS is a computer-based data-processing tool used to analyze and manage spatial information that combines computers and geography. May be repeated three times for credit. This course has the option of a letter grade or pass/no pass.

CSIS 72 Desktop Publishing - QuarkXPress**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 124 and CSIS 126**Transferable:** CSU

This course will provide students the opportunity to learn to use basic features of desktop publishing software to create all types of publications: flyers, brochures, newsletters, and advertisement. Included in the course will be the basic page layout and design principles and integrating text and graphics to create attractive business publications. The course will be taught with industry standard software. This course has the option of a letter grade or pass/no pass. This course may be repeated once for credit. This course is also listed as DM 72.

CSIS 73 Desktop Publishing - Adobe InDesign**Units:** 3 **Hours:** 3 Lecture**Advisory:** Completion of CSIS 1 or completion of CSIS 2.**Transferable:** CSU

This course will provide students the opportunity to learn to use basic features of desktop publishing software to create all types of publications: flyers, brochures, newsletters, and advertisements. Included in the course will be basic page layout and design principles and integrating text and graphics to create attractive business publications. The course will be taught with Adobe InDesign. May be repeated three times for credit. This course has the option of a letter grade or pass/no pass. Also listed as DM 73.

CSIS 74 Advanced Photoshop**Units:** 3 **Hours:** 3 Lecture**Advisory:** CSIS 75 PhotoShop I**Transferable:** CSU; GAV-GE: C1

This course is for the PhotoShop-experienced student and explores PhotoShop's advanced features in depth. Students work on projects, which challenge their creativity and technical ability, and will be encouraged to develop complex projects for the web and for the printed page. May be repeated three times for credit. This course has the option of a letter grade or pass/no pass. This course is also listed as ART 74 and DM 74.

CSIS 75 PhotoShop I - Adobe PhotoShop**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 124 (Windows Fundamentals), CSIS 2L**Transferable:** CSU; GAV-GE: C1

This course is based on the software application Adobe PhotoShop. Students learn to scan photographs and manipulate them using Photoshop tool box and special effects filters. They will learn to correct photos; mask image using channels; create duotone, tritone, and quadtone images; prepare photos for use in printing and on the web. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit. Students who repeat this course will learn new and advanced features. This course is also listed as DM 75.

CSIS 76 Digital Illustration**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2 or equivalent computer experience.**Transferable:** CSU; GAV-GE: C1

Illustration techniques using computer Bezier curve-based illustration software tools to do diagrams and graphics for use in art, desktop publishing, web graphics, multimedia, and computer presentations. This basic Illustrator course is focused on the technical and historical aspects of digital design and illustration as well as the development of personal artistic expression and visual perception through the use of the digital illustration medium. The course will include lectures and discussions about color, composition and content, computer and illustration program use, printing and presentation techniques. This course has the option of a letter grade or pass/no pass. This course is also listed as ART 76 and DM 76.

CSIS 77 Introduction to Digital Media and its Tools**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 124, CSIS 1, CSIS 2/2L, CSIS 3, or familiarity using the Macintosh or Windows operating system.**Transferable:** CSU; UC; GAV-GE: C1

An introduction to the field of digital media, including history, social impact, concepts, career options and industry trends. Applying learned visual and aural design principles, students will explore the use of computer-based tools in the design and production of digital media by creating and editing digital images, sounds, video, animation, and text. A comprehensive term project for publication on the web or CD ROM will be required. This course is also listed as ART 77 and DM 77. This course has the option of a letter grade or pass/no pass. May be repeated twice for credit.

CSIS 78 Web Sites with SQL and PHP**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 128 Database - Access, or equivalent database experience.**Transferable:** CSU

Covers the programming of database-driven, web-based applications (such as an eCommerce web site) using PHP and MySQL. PHP is a powerful language for writing server-side Web applications. MySQL is the world's most popular open source database. Together these two technologies provide a powerful platform for building database-driven Web applications.

CSIS 79 Portfolio Development**Units:** 1 **Hours:** 1 Lecture**Transferable:** CSU; GAV-GE: C1

The planning and production of personal portfolios and self-promotion materials, including online, print, slides, and e-media (CD ROM, DVD) portfolios; cover letters, and resumes. Focuses on self-promotion for jobs, self-employment, or advanced education in the fields of Digital Media, Art, and Computer Graphic Design. Students will leave the class with one or more portfolios representing their work. This course has the option of a letter grade or pass/no pass. This course is also listed as ART 79 and DM 79.

CSIS 80 Digital Photography**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2/2L or ART 8A or equivalent computer experience.**Transferable:** CSU; UC; GAV-GE: C1

The study of digital photography from digital camera to the computer-based printer or digital media. Artistic, theoretical, and technical aspects will be considered. Topics include information about types and purchasing of digital cameras; theory, mechanics, and art of digital imagery; digital darkroom; eccentricities of digital photo taking; stitching photos for virtual reality; and preparing digital images for print, World Wide Web and other digital media. This course has the option of a letter grade or pass/no pass. This course is also listed as ART 80 and DM 80.

CSIS 84 JavaScript Programming**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 6**Transferable:** CSU; UC

Fundamentals of JavaScript client-side programming for Web pages requiring data collection or other user interaction. Students will create Web pages that execute on the client (personal system) using JavaScript. This course may be repeated one time for credit. This course has the option of a letter grade or pass/no pass.

CSIS 85 Web Design I: Dreamweaver**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 6 or basic knowledge of HTML.**Transferable:** CSU; GAV-GE: C1

Basic and intermediate principles of designing Web pages/sites using the Dreamweaver web design software and HTML. Emphasis will be on good design and the use of tables, frames, forms, rollovers, DHTML, XHTML, behaviors, and CSS. Also includes site maintenance and the integration of multimedia components such as graphics, sound, animation, and video. This course is for the content person to design, develop, and maintain effective Web sites. This course is also listed as ART 85 and DM 85. This course has the option of a grade or pass/no pass. May be repeated twice for credit.

CSIS 88 PHP Programming**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 6 or HTML experience.**Transferable:** CSU

PHP is a programming language for writing server-side, cross platform, HTML-embedded scripts. Topics include introduction to PHP and syntax, configuring a Web server for use with PHP, programming in PHP using basic scripts with conditional constructs, loops, functions, operators, arrays, databases and data files, email, forms, and cookies. This course has the option of a letter grade or pass/no pass.

CSIS 107 Digital Media Design**Units:** 2 **Hours:** 1.5 Lecture, 1.5 Laboratory**Advisory:** CSIS 1 or CSIS 2/2L or equivalent computer experience**Transferable:** CSU

Fundamentals of design for visual, time-based, interactive, and sound arts as applied to digital media. Includes basic storytelling, graphic design, information architecture, and human factors. Page layout, scriptwriting, storyboards, and flow charts will be used as tools applicable to the design and development of business presentations, interactive media, educational multimedia, animation, web sites, video games, and film/video. This course has the option of a letter grade or pass/no pass. Also listed as ART 107 and DM 107.

CSIS 108 Digital Media Lab**Units:** .5-3 **Hours:** 9 Laboratory**Advisory:** CSIS 1 or CSIS 2/2L or equivalent computer experience.**Transferable:** CSU; GAV-GE: C1

Supervised practice and individualized computer assisted learning of software applications and techniques commonly found in the design and production of digital media (e.g., digital art and imaging, digital photography, digital print, digital audio/video, web design/authoring, DVD/CD ROMs, animation). Supplements lecture courses. Open entry/exit, so may be added at anytime during the semester. This is a pass/no pass course. May be repeated three times for credit. Also listed as ART 108 and DM 108.

CSIS 109 Interactive Animation and Authoring: Director**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 1/1L Computer Literacy (& Lab) or CSIS 2/2L Computers in Business (& Lab) CSIS 77 Intro. to Digital Media and its Tools**Transferable:** CSU

Use of animation/interactive multimedia development software (Macromedia Director) and techniques for designing business presentations, interactive multimedia, educational materials, interactive web animation, computer games, and video animation. The study of interactivity and integration of multiple types of art content such as 2D and 3D animation, digital video, graphics, and sound. Applicable to the design and production of CD-ROMs and web sites. This course has the option of a letter grade or credit/ no credit. This course is also listed as DM 109.

CSIS 110 Interactive Animation: Flash**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 1, CSIS 2/2L, CSIS 124 or basic computer knowledge.**Transferable:** CSU; GAV-GE: C1

The production of vector graphics, animation, and interactive multimedia in Shockwave-Flash format for web pages and other digital media. Design of highly interactive web site interfaces and animated games using Flash actions (scripting). Useful for web designers/developers, animators, and multimedia authors. This course has the option of a letter grade or pass/no pass. Also listed as ART 110 and DM 110. May be repeated three times for credit.

CSIS 112 Keyboard Speed Building**Units:** .5-1 **Hours:** 3 Laboratory**Advisory:** CSIS 122 or knowledge of keyboard with keyboarding speed of at least 25 wpm.**Transferable:** CSU

This self-paced course is designed for students who know the alphabetic keyboard by touch and who want to develop their keyboarding speed. Students will use a microcomputer to keyboard a series of straight-copy timings, which will enable them to achieve a high level of skill. This is a pass/no pass course. May be repeated once for a total of 1 unit.

CSIS 113 Introduction to Digital Video**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2/2L or equivalent computer experience**Transferable:** CSU; GAV-GE: C1

Introduction to the aesthetic and technical aspects of digital video recording, non-linear editing, special effect generation, and production of video (and associated audio) using the personal computer equipped with specialized software such as iMovie, Final Cut Pro, and After Effects. Also considered will be the preparation of digital video for use in interactive media such as CD, DVD, and the World Wide Web. Students will produce a final digital video project on DVD. This course has the option of a letter grade or pass/no pass. May be repeated 2 times for credit. Also listed as ART 113 and DM 113.

CSIS 114 Digital Media Production**Units:** 2 **Hours:** 2 Lecture**Advisory:** At least one of the following: ART 75, CGE 2, JOUR 18A, MUS 21, CSIS 7, CSIS 71, OR CSIS 77. or possess equivalent skills from any one of the following areas: digital media, computer graphics, digital print, film, TV/video, journalism (publishing), drawing or illustration, web design/ development, business/marketing, or programming.**Transferable:** CSU

A team oriented practicum that focuses on the application of learned skills to the production of digital media and digital print projects, such as web sites, CD ROM, and DVDs. Project development will be accomplished according to team derived master schedules. Lectures will be on project management, work coordination and production techniques, client-team interface, asset management and integration, budget estimates, testing, and copyright infringement. Please note that this is very much a team oriented class. This course has the option of a letter grade or pass/no pass. This course is also listed as ART 114 and DM 114.

CSIS 116 DVD Authoring**Units:** 2 **Hours:** 1.5 Lecture, 1.5 Laboratory**Advisory:** CSIS 1 or CSIS 2/2L or equivalent computer experience**Transferable:** CSU

Study of the artistic and technical aspects of authoring interactive DVDs (Digital Video/Versatile Disk). Special attention will be given to interactive design and the integration and conversion (encoding) of time-based media (e.g., multi-angle video, animation, Dolby sound) special to this media format. Students will be able to produce their own DVD of video, slide shows, and/or interactive games. This course has the option of a letter grade or pass/no pass. May be repeated two times for credit. Also listed as ART 116 and DM 116.

CSIS 117 Motion Graphics/Special Effects**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** DM/ART/CSIS 113 or DM/ART/CSIS 140 or DM/ART/CSIS 77 or THEA 17A or basic knowledge of digital video/film editing.**Transferable:** CSU; UC

Study of the design of motion graphics and special effects used in digital video and film, web, multimedia, and interactive games. Includes video/graphics compositing techniques, 2D animation, basic 3D animation, and special effects commonly generated in digital post-production. Software such as Adobe After Effects or Apple's Motion will be used. May be repeated for credit. This course has the option of a letter grade or credit/non-credit. This course is also listed as ART 117 and DM 117.

CSIS 120 Computerized Accounting - QuickBooks**Units:** 2 **Hours:** 1 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2 or the equivalent computer experience. ACCT 20 or ACCT 101 or ACCT 103 or ACCT 105 or the equivalent accounting experience.**Transferable:** CSU

An introduction to computer assisted accounting. Hands-on use of a microcomputer menu-driven accounting package to do general ledger, sales journal, cash receipts journal, cash payments journal, purchases journal, payroll, receivables, payables and related financial reports. This course has the option of a letter grade or pass/no pass. Repeatable whenever a new software package is adopted. This course is also listed as ACCT 120.

CSIS 121 Spreadsheet - MS Excel**Units:** 1-2 **Hours:** 2 Lecture**Advisory:** CSIS 1 or CSIS 2 or equivalent computer experience.**Transferable:** CSU

Introduction to the computer spreadsheet software. A hands-on approach to learning terms, commands, and applications of a spreadsheet program. This course will help prepare students for taking the Excel MOUS (Microsoft Office User Specialist) exams. This course has the option of a letter grade or pass/no pass and may be repeated for credit when the software changes.

CSIS 122 Computer Keyboarding**Units:** .5-1.5 **Hours:** 4.5 Laboratory**Transferable:** CSU; CSU-GE: E1; GAV-GE: E1

A self-paced course for students who wish to master the alphabetic and numeric keyboard on the computer. This course is designed for students who do not know the alphabetic keyboard by "touch" and for those who want to improve their ability to type straight copy with increased speed and accuracy. The course provides "hands-on" instruction to help students reach optimum computer keyboarding skills within a limited time. This is a pass/no pass course. Course may be repeated until 3 units are accrued.

CSIS 124 Windows Fundamentals**Units:** 1 **Hours:** 1 Lecture**Advisory:** Basic keyboarding skill.**Transferable:** CSU

This course provides fundamental information on the Windows environment for the computer. Introductory Windows operations and file management are covered. This is a pass/no pass course. This course may be repeated three times for credit.

CSIS 126 Word Processing - MS Word**Units:** 2 **Hours:** 2 Lecture**Advisory:** Eligible for English 260 and basic keyboarding skills.**Transferable:** CSU

This introductory course for word processing with Windows is designed for business and non-business majors. Students will develop word processing skills to create a document, select and edit text, move and copy text, use the spelling, grammar, and thesaurus features, format text, and create headers, footnotes for a research paper. This course has the option of a letter grade or pass/no pass and may be repeated when the software changes.

CSIS 128 Database - MS Access**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 1 or CSIS 2 or equivalent knowledge.**Transferable:** CSU

Introduction to Microsoft Access, a relational database management software tool. Students will learn to create and manage a database. This course will help prepare students for taking the Access MOUS (Microsoft Office User Specialist) exams. May be repeated three times for credit. This course has the option of a letter grade or pass/no pass.

CSIS 129 Presentation Graphics - MS PowerPoint**Units:** 1 **Hours:** 1 Lecture**Advisory:** CSIS 126 or word processing skills in the Windows environment.**Transferable:** CSU

This introductory course in presentation graphics will use Microsoft Office's "PowerPoint" software to create a computerized presentation (slide show) with text and objects. This course is also listed as CMUN 129. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 132 Intermediate Word Processing - MS Word**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 126 Word Processing - MS Word**Transferable:** CSU

This course covers formatting with macros and styles, mail merge techniques, sorting data in tables, preparing and protecting forms. These techniques will be applied to a variety of different documents: contracts, reports, surveys, manuscripts, and various types of letters. Other topics include working with shared documents in a workgroup, integrating applications and creating hyperlinks for workgroup settings using Microsoft Word. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 134 Intermediate Excel**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 121 Spreadsheets - MS Excel**Transferable:** CSU

This course continues on where CSIS 121 Spreadsheet - MS Excel left off. Intermediate level training in spreadsheets using the Microsoft Excel program. The course includes graphing, formatting, database features, macros, and financial business calculations for decision making. This course has the option of a letter grade or pass/no pass. May be repeated once for credit.

CSIS 140 Basic Digital Film/Video Production**Units:** 1 **Hours:** 1 Lecture**Transferable:** CSU; UC; GAV-GE: C1

An on-line self-paced course covering the basics of film/video production and post production (editing) using "easy to use" computer software such as Apple's iMovie. Beneficial for students who are producing a video/film project as a requirement for another college course, extra skills development, or for self interest. Completion of the associated class or personal project in DVD format using either personal video equipment or the equipment in the Digital Media Studio is required. May be repeated twice for credit. This course has the option of a letter grade or pass/no pass. This course is also listed as ART 140 and DM 140.

CSIS 142 Windows Vista**Units:** 1 **Hours:** 1 Lecture**Transferable:** CSU

This course provides fundamental information on the new Windows Vista environment for the computer. Introductory Windows Vista operations and file management are covered.

CSIS 151 Introduction to XML Authoring**Units:** 3 **Hours:** 2 Lecture, 3 Laboratory**Advisory:** CSIS 6**Transferable:** CSU

This course provides an introduction and overview of eXtensible Markup Language (XML) and XML related technologies used to develop content and manipulate data for commercial web sites. XML is a revolutionary language which is rapidly becoming a Web development standard for business-to-business transactions, and for database manipulation and searching. The class will cover well-formed and valid XML documents, namespaces, schemas, cascading style sheets (CSS), and XSLT. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 155 Microsoft FrontPage**Units:** 2 **Hours:** 2 Lecture**Advisory:** CSIS 1 or CSIS 2 or equivalent computer experience.**Transferable:** CSU

Students will learn how to use the Web authoring software FrontPage to create and modify Web pages. Topics include formatting text, using tables, frames, images, and links. Also, the class will cover the syntax and use of HTML commands for modifying Web pages. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 169 Advanced Word Processing with Desktop Publishing - MS Word**Units:** 2 **Hours:** 1 Lecture, 3 Laboratory**Prerequisite:** CSIS 126 or working knowledge of Microsoft Word**Advisory:** Eligible for English 250.**Transferable:** CSU

This course will include advanced features of Microsoft Word: fonts, merging, columns, graphics, drawing, templates, and styles. Desktop publishing features will also be introduced. This course has the option of a letter grade or pass/no pass. May be repeated once for credit.

CSIS 175A Networking Essentials**Units:** 4 **Hours:** 4 Lecture**Advisory:** Mathematics 205, CSIS 1 or CSIS 2 and CSIS 181.**Transferable:** CSU

This course introduces network standards, concepts, topology and terminology including LANs, WANs, the OSI model, cabling, IP addressing, network hardware and various protocols. The content of this course aligns itself with the first course in the Cisco Systems Networking Academy (CCNA 1) and the Microsoft MCSE series. This course has the option of a letter grade or pass/no pass. Previously CSIS 91A.

CSIS 175B Router Theory and Router Technologies**Units:** 4 **Hours:** 4 Lecture**Prerequisite:** CSIS 175A**Advisory:** CSIS 48**Transferable:** CSU

This course is the second of four courses in the Cisco Networking Academy curriculum. This course is an introduction to router concepts and terminology including Ethernet and Token Ring frames, RIP and IGRP routing protocols, distance vector and link state routing, routing loop issues, TCP/IP basics, IP addressing, and IP access lists. Students will get hands-on experience configuring Cisco routers. This course has the option of a letter grade or pass/no pass.

CSIS 175C Advanced Routing/Switching/WAN**Units:** 4 **Hours:** 4 Lecture**Prerequisite:** CSIS 175B**Transferable:** CSU

This course is the third/last course in the Cisco Networking Academy curriculum. This course covers the advanced features of router and routing concepts including IPX access lists, LAN segmentation, network congestion issues, cut-through and store and forward switches, and the operation of the Spanning Tree protocol. Other topics include: Wide Area Network services including LAPB, Frame Relay, ISDN, HDLC, PPP, DDR, LMI's and maps and subinterfaces on the Cisco router. This class includes practice using the Cisco routers. This course has the option of a letter grade or pass/no pass.

CSIS 177 Operating System, Networking Lab**Units:** 1 **Hours:** 3 Laboratory**Transferable:** CSU

This course provides students access to the Networking OS/Lab. Students have the opportunity to get hands-on access to routers and switches to help them prepare for Cisco certification exams or the more advanced CCNP courses. The course is self-paced, individualized instruction. Students from the Linux/UNIX classes and the Operating System class will also have the opportunity to practice on the software used for their classes. This is a pass/no pass course. May be repeated three times for credit. Students repeating this course will learn new and advanced features.

CSIS 178 Applied Networking**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 124**Transferable:** CSU

This course covers fundamental networking concepts and develops the skills and knowledge to set up and maintain small business/home networks. The course is not hardware or vendor specific. It helps students prepare for the "Network +" certification exam, an industry-wide, vendor-neutral certification program developed and sponsored by the Computing Technology Industry Association (CompTIA). This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 181 PC Hardware**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 124, CSIS 1 OR CSIS 2, or equivalent computer experience.**Transferable:** CSU

This course examines computing hardware, operating systems, and software applications from a technical side to enable students to select, install, maintain and optimize a computer system. This course will help prepare students to pursue the A+ Hardware Certification. This course has the option of a letter grade or pass/no pass.

CSIS 182 Operating Systems**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 1 or CSIS 2 or equivalent computer experience**Transferable:** CSU

This course will survey current computer operating systems such as Microsoft Windows 98, NT, 2000 and XP. Linux will also be covered. Topics include file system management, systems requirements, network systems integration, security, and regular maintenance procedures. This course has the option of a letter grade or pass/no pass.

CSIS 183 Introduction to Microsoft Servers**Units:** 4 **Hours:** 3 Lecture, 3 Laboratory**Advisory:** CSIS 182.**Transferable:** CSU

This course introduces students to the fundamentals of Microsoft Server setup and administration. Topics include managing file systems (including Active Directories), devices, user accounts, backups, and basic security. This course has the option of a letter grade or pass/no pass. May be repeated three times for credit.

CSIS 190 Occupational Work Experience/Computer Science**Units:** 1-4 **Hours:** 20 Laboratory**Required:** Declared vocational major. Concurrent enrollment in seven or more units (including CWE units, except for summer school. For summer school, enrollment in one other class is required). Minimum 2.00 G.P.A.**Transferable:** CSU

College credit for learning experience obtained on the job in accordance with a training plan developed cooperatively between the employer, college and student. 75 hours per semester per unit or 60 hours per semester for unpaid experience. This is a pass/no pass course. May be taken for a maximum of 16 work experience units.

CSIS 274 Telecommunication and Network Cabling**Units:** 2 **Hours:** 1 Lecture, 3 Laboratory**Transferable:** No

This course provides an introduction to telecommunications and network cabling. Students will receive hands-on training in installing, terminating, testing, and troubleshooting both copper and fiber optic-based cabling systems. This course has the option of a letter grade or pass/no pass.

CSIS 570 Computer Access Evaluation**Units:** .5 **Hours:** 1.5 Laboratory**Advisory:** This course is intended for students with a verified disability who show a need for the use of adaptive computer programs and/or equipment or demonstrated academic deficit.**Transferable:** No

This course is intended to provide for in-depth computer access evaluation in order to determine an appropriate access environment for a student with a disability or multiple disabilities. This is a pass/no pass course. May be repeated as necessary based on measurable progress as documented in the Student Educational Contract. This is an open entry, open exit course.

CSIS 571 Computer Assisted Instruction**Units:** .5-2 **Hours:** 6 Laboratory**Advisory:** This course is intended for students with a verified disability who show a need for the use of adaptive computer programs and/or equipment or demonstrated academic deficit.**Transferable:** No

This course is an Assistive Computer Technology Lab designed for students who are eligible for Disability Services. The course is designed to improve basic academic skills and/or cognitive processes through the use of appropriate software or to learn assistive devices designed to make computers accessible. Course content is based on individual educational plans which are developed for each student. This is a pass/no pass course. May be repeated as necessary based on measurable progress as documented in the Student Educational Contract. This is an open entry, open exit course.

CSIS 572 Adaptive Computer Basics**Units:** 1 **Hours:** 3 Laboratory**Advisory:** This course is intended for students with a verified disability who show a need for the use of adaptive computer programs and/or equipment.**Transferable:** No

This course will include an introduction to the basic concept of how computers work, using the computer keyboard, word processing, computer ethics and presentation graphics. This course will be self-paced and adjusted so that students with learning, physical, or communicative disabilities can learn a number of adaptive devices designed to make computers accessible. This is a pass/no pass course. May be repeated as necessary based on measurable progress as documented in the student's Individual Education Plan or Student Educational Contract. This is an open entry, open exit course.

Computerized Accounting: see ACCT 120

Construction: see Industrial Technology (IT)

COSMETOLOGY**COS 191A Workplace Skills****Units:** 1 **Hours:** 1 Lecture**Transferable:** No

Workplace Skills teaches skills vital to workplace success. The topic for 191A is Interpersonal Communication. Need not be taken in sequence. This is a pass/no pass course.

COS 191B Workplace Skills**Units:** 1 **Hours:** 1 Lecture**Transferable:** No

Workplace Skills teaches skills vital to workplace success. The topic for 191B is team building. Need not be taken in sequence. This is a pass/no pass course.

COS 191C Workplace Skills**Units:** 1 **Hours:** 1 Lecture**Transferable:** No

Workplace Skills teaches skills vital to workplace success. The topic for 191C is Problem Solving. Need not be taken in sequence. This is a pass/no pass course.

COS 200 Beginning Cosmetology**Units:** 12 **Hours:** 5 Lecture, 20 Laboratory**Advisory:** Eligible for English 250, 260 and Mathematics 205.**Transferable:** No

Fundamental principles of the science/art of beauty culture including hair design, chemical services and cosmetic therapy.

COS 201 Intermediate Cosmetology**Units:** 12 **Hours:** 5 Lecture, 20 Laboratory**Advisory:** Satisfactory completion of Cosmetology 200. Eligible for English 250, 260 and Mathematics 205.**Transferable:** No

Extended studies and techniques in tinting, bleaching, permanent waving, shaping, styling, acrylic nail, pedicuring, chemical straightening, soft perming, waxing, care of skin and make-up.

COS 202 Advanced Cosmetology**Units:** 12 **Hours:** 5 Lecture, 20 Laboratory**Prerequisite:** Completion of COS 200 & 201.**Advisory:** Eligible for English 250, 260 and Mathematics 205.**Transferable:** No

Advanced techniques in tinting, lightening, hair design and cosmetic chemistry.

COS 203 Practicum**Units:** .5-12 **Hours:** 5 Lecture, 20 Laboratory**Prerequisite:** Completion of COS 200, 201 and 202.**Advisory:** Eligible for English 250, 260 and Mathematics 205.**Transferable:** No

Advanced techniques in tinting, lightening, hair and design and cosmetic chemistry.

COS 204 Job Entry Skills**Units:** 3 **Hours:** 3 Lecture**Advisory:** Eligible for English 250 and English 260.**Transferable:** No

Skills for competing in the job market. Includes employment strategies, interpersonal skills, marketing personal services, teamwork and quality management.

COS 205 State Board Review**Units:** 2 **Hours:** 1 Lecture, 4 Laboratory**Advisory:** Cosmetology 201.**Transferable:** No

State Board exam procedures and standards.

COS 207 Contemporary Styling**Units:** 4.5 **Hours:** 4.5 Lecture, 27 Laboratory**Advisory:** Satisfactory completion of Cosmetology 200. Eligible for English 250, 260, and Mathematics 205.**Transferable:** No

Studies and techniques in braiding, weaving, glass nails, silk wrap, individual lash and brow tinting, corrective make-up and low lights. This is a 6 week class offered in summer session only.

COS 208 Cosmetology Chemistry**Units:** 4.5 **Hours:** 4.5 Lecture, 27 Laboratory**Advisory:** Completion of Cosmetology 200. Eligible for English 250 and 260.**Transferable:** No

Fundamental principles of cosmetic chemistry as it applies to chemical waving, straightening, coloring and lightening. This 6 week course is offered in summer session only.

COS 220 Scientific Skin Care (Esthetics)**Units:** 4-8 **Hours:** 3 Lecture, 15 Laboratory**Required:** 17 years of age, completed 10th grade or equivalent, as per State Board of Cosmetology.**Transferable:** No

An introductory course designed to provide the skills necessary to be employed as an Esthetician (Facialist). Skills taught include skin care and treatment, cosmetics, and the use of electrical modalities.