DR 26 Composition Skills and Strategies for the Intermediate Writer (3)
3 hours lecture
Recommended preparation: ENG 10 or eligibility for ENG 50
Note: May be taken 2 times
This class is designed to help students with disabilities improve their intermediate composition skills through methods and strategies specific to their disabilities.

DR 31 Language Development (1,2)
2 or 4 hours lecture/laboratory
Note: May be taken 4 times
This course is for the student with communication problems relating to language processing. The course will include assessment, theory, facilitation techniques, and use of special devices.

DR 35 Speech and Language Development: Articulation, Fluency, and Voice Problems (3)
3 hours lecture
Note: May be taken 4 times
For students with communication problems relating to articulation, rate/fluency, and voice. It includes assessment, theory, physiology, and management strategies.

DR 40 Adapted Computer Skills (3)
3 hours lecture
Note: May be taken 3 times
This course is designed to meet the needs of the students with disabilities. Students learn to use computers with access technology such as voice recognition, screen readers, screen enlargement and other hardware adaptations.

DR 41 Advanced Adapted Computers for Students with Disabilities (3)
3 hours lecture
Recommended preparation: DR 40
Note: May be taken 3 times
Provides training in more advanced software for students with disabilities by using their prescribed access technology. Course work meets computer literacy competence for CSUSM.

DR 42 Voice Recognition for Students with Disabilities (3)
3 hours lecture
Note: May be taken 3 times
Provides voice recognition computer training for students with disabilities.

DR 43.1 Software for Students with Vision Loss I (3)
3 hours lecture
Recommended Preparation: Keyboarding skills with a minimum of 15 words per minute
Note: May be taken 2 times
Provides training using specialized software and hardware adaptations to assist students with blindness/low vision to develop computer skills.

DR 43.2 Software for Students with Vision Loss II (3)
3 hours lecture
Recommended Preparation: Keyboarding skills with a minimum of 15 words per minute along with prior experience with a screen reading or magnification application
Note: May be taken 2 times
Provides training using specialized software and hardware adaptations in combination with Microsoft Office, Internet Explorer, and other academic applications.

DR 45L Adapted Computer Laboratory (1)
3 hours laboratory
Note: Credit/No Credit grading only; may be taken 4 times
Provides supervised hands on opportunities to acquire and reinforce skills on computer equipment adapted for students with disabilities.

DR 47 Topics in Disability Resource (.5-3)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture or lecture/laboratory may be scheduled by the department.
Note: May be taken 3 times
Topics in disability resource. See Class Schedule for specific topic offered. Course title will designate subject covered.

Drafting Technology (DT)

Contact the Design and Consumer Education Department for further information, (760) 744-1150, extension 2349

Associate in Arts degree requirements, Certificate of Achievement requirements, and Certificate of Proficiency requirements are listed in Section 6 (green pages) of the catalog.

PROGRAMS OF STUDY

Architectural Drafting Technology

Prepares students for employment as a design/production drafter in the field of architecture.

Students concerned with transfer into an architectural program at a university should review specific course requirements with their architectural instructor and the Counseling Department.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
DT 105	Basic Architectural Drafting	3
DT 120 or	Architectural History	
DT 121	Multicultural Architectural History	3
DT/R DT 125	AutoCAD Introduction to Computer Aided Drafting	3
DT 135	Architectural Materials/Methods Construction	3
DT 144	Architectural Drawing and Color	3
DT 145	Architectural Delineation/Pictorial Drawing	4
DT 155	Architectural Theory	2
DT 160	Environmental Architecture and Design	3
DT 185	Architectural 3D Studio MAX	3
DT/R DT 200	Advanced Computer Aided Architectural Drafting	4
Electives (Select 9 units)		
CSIS 120/ R CSIS 120	Microcomputer Applications	3
DT 120 or	Architectural History	
DT 121	Multicultural Architectural History	3
DT/R DT 126	AutoCAD Intermediate Computer Aided Drafting	3
DT/R DT 127	AutoCAD Customization	3
DT 129	Basic Architectural Drafting with AutoCAD	3
DT 215	Architectural Design Fundamentals I	5
DT 216	Architectural Design Fundamentals II	5
MATH 115	Trigonometry	3
CE 100	Cooperative Education	1,2,3,4
CE 105	Job Hunting Techniques	1,2,3
TOTAL UNITS		**40**

Computer Assisted Drafting

Prepares students in the skills necessary for employment as a computer assisted drafting operator.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
CSIS 105	Computer Concepts/Microcomputer	3
DT/R DT 125	AutoCAD Introduction to Computer Aided Drafting	3
DT/R DT 126	AutoCAD Intermediate Computer Aided Drafting	3
DT/R DT 127	AutoCAD Customization	3
DT/R DT 128	SolidWorks Intro to 3D Design and Presentation	3
IT 100	Technical Mathematics	3

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

Electives (Select 12 units)		
DT 110	Technical Drafting I with AutoCAD	4
DT 111	Technical Drafting II with AutoCAD	4
DT 140	Electronic Drafting and Design	3
DT 145	Architectural Delineation/Pictorial Drawing	4
DT 196B	Special Problems/CAD	1,2,3
DT/R DT 200	Advanced Computer Aided Architectural Drafting	4
DT 210	Printed Circuit Board Design	3
BUS 205	Business Writing	3
CE 105	Job Hunting Techniques	1,2,3
MATH 110	College Algebra	4
MATH 115	Trigonometry	3
CE 100	Cooperative Education	1,2,3,4
TOTAL UNITS		**30**

Drafting Technology - Multimedia

Prepares students in the skills necessary for employment in the multimedia presentation field.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		**Units**
DT/R DT 125	AutoCAD Introduction to Computer Aided Drafting	3
DT/R DT 126	AutoCAD Intermediate Computer Aided Drafting	3
DT/R DT 128	SolidWorks Intro to 3D Design and Presentation	3
DT 180	3D Studio Max – Intro to 3D Modeling/Animation	3
DT 182	3D Studio Max - Advanced 3D Modeling/Animation	3
DT 184	Real Time 3D Technical/Game Animation	2
IT 100	Technical Mathematics	3
Electives (Select 12 units)		
ART 241	Computer Graphics	3
ARTD 150	Digital Concepts/Techniques in Art	3
ARTD 220	Motion Design	3
ARTI 246	Digital 3D Design and Modeling	3
ARTI 247	Digital 3D Design and Animation	3
CE 105	Job Hunting Techniques	1,2,3
COMM 100	Mass Media in America	3
CSIS/ R CSIS 120	Microcomputer Applications	3
CE 100	Cooperative Education	1,2,3,4
DT/R DT 130	CAD/CAM Machining	3
DT/R DT 131	SolidWorks Adv to 3D Design and Presentation	3
DT 196B	Special Problems in CAD	3
GCIP/ R GCIP 140	Digital Imaging/Photoshop I	3
GCMW/ R GCMW 100	Multimedia I	3
GCMW 201	Multimedia II	3
MATH 50 or	Beginning Algebra	
MATH 60 or	Intermediate Algebra	
MATH 110 or	College Algebra	
MATH 115	Trigonometry	3,4
MUS 180	Computer Music I	3
TOTAL UNITS		**32**

Drafting Technology - Technical

Prepares students in the skills necessary for employment as a drafter in machine, mechanical, electrical, aeronautical, civil, and other related engineering fields.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		**Units**
DT 100	Basic Mechanical Drawing	3
DT 110	Technical Drafting I with AutoCAD	4
DT 111	Technical Drafting II with AutoCAD	4
DT/R DT 125	AutoCAD Intro to Computer Aided Drafting	3
DT/R DT 126	AutoCAD Intermediate Computer Aided Drafting	3
DT/R DT 127	AutoCAD Customization	3
DT/R DT 128	SolidWorks Intro to 3D Design and Presentation	3
IT 100	Technical Mathematics	3
Electives (Select 6 units)		
CE 105	Job Hunting Techniques	1,2,3
CSIS/ R CSIS 120	Microcomputer Applications	3
DT/R DT 130	CAD/CAM Machining	3
DT/R DT 131	SolidWorks Adv 3D Design and Presentation	3
DT 180	3D Studio Max – Intro to 3D Modeling/Animation	3
DT 182	3D Studio Max - Advanced 3D Modeling/Animation	3
DT 184	Real Time 3D Technical/Game Animation	2
DT 196B	Special Problems in CAD	1,2,3
MATH 50 or	Beginning Algebra	
MATH 60 or	Intermediate Algebra	
MATH 110 or	College Algebra	
MATH 115	Trigonometry	3,4
CE 100	Cooperative Education	1,2,3,4
TOTAL UNITS		**32**

Electro-Mechanical Drafting and Design

Drafts detailed working drawings of electro mechanical equipment and devices. Indicates dimensions, materials, and manufacturing procedures for electronic industry.

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		**Units**
DT 110	Technical Drafting I with AutoCAD	4
DT 111	Technical Drafting II with AutoCAD	4
DT/R DT 125	AutoCAD Introduction to Computer Aided Drafting	3
DT/R DT 127	AutoCAD Customization	3
DT/R DT 128	SolidWorks Intro to 3D Design and Presentation	3
DT 210	Printed Circuit Board Design	3
DT 211	Advanced Printed Circuit Board Design	3
IT 100	Technical Mathematics	3
Electives (Select 6 units)		
BUS 205	Business Writing	3
CSIS/ R CSIS 120	Microcomputer Applications	3
DT/R DT 126	AutoCAD Intermediate Computer Aided Drafting	3
DT/R DT 131	SolidWorks Adv 3D Design and Presentation	3
DT/R DT 130	CAD/CAM Machining	3
DT 196A	Special Problems in Drafting	1,2,3
DT 196B	Special Problems in CAD	1,2,3
ECHT 160	Electronics for Everyone	3
MATH 110	College Algebra	4
CE 100	Cooperative Education	1,2,3,4
TOTAL UNITS		**32**

Interactive Media Design

Prepares students with specific skills necessary for employment in the field of multimedia design and production. Students may choose an emphasis in either 3D modeling and animation, which emphasizes production skills and authoring systems, or multimedia design, which emphasizes content development and visual design of multimedia productions. Both areas of emphasis collaborate on an actual multimedia production.

Emphasis in 3D Modeling and Animation

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
ARTI 100	Introduction to Illustration	3
ARTI 246	Digital 3D Design and Modeling	3
ARTI 247	Digital 3D Design and Animation	3
DT 180	3D Studio Max–Intro to 3D Modeling/Animation	3
DT 182	3D Studio Max-Adv 3D Modeling/Animation	3
GCIP/ R GCIP 140	Digital Imaging/Photoshop I	3
GCMW 204	Motion Graphics for Multimedia	3
Electives (Select two courses)		
ART 241	Computer Graphics	3
ART 248	Character Animation	1.5
ARTD 150	Digital Concepts/Techniques in Art	3
ARTD 220	Motion Design	3
DT/R DT 128	SolidWorks Intro 3D Design and Presentation	3
DT 184	Real Time 3D Technical/Game Animation	2
GCIP 240	Digital Imaging/Photoshop III	3
GCMW 201	Multimedia II	3
ENTT/RTV 120	Digital Television Production	3
RTV 124	Staging and Lighting for Television	3
TOTAL UNITS		**24.5 – 27**

Emphasis in Multimedia Design

A.A. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements		Units
ARTD 100	Graphic Design I	3
ARTD 220	Motion Design	3
ARTI 247	Digital 3D Design and Animation	3
GCIP 240	Digital Imaging/Photoshop III	3
GCMW/ R GCMW 101	Multimedia I	3
GCMW 201	Multimedia II	3
GCMW 204	Motion Graphics for Multimedia	3
Electives (Select two courses)		
ART 197G	Topics in Art – Computer Art	3
ARTD 150	Digital Concepts and Techniques in Art	3
ARTI 246	Digital 3D Design/Modeling	3
DT 180	3D Studio Max-Intro to 3D Modeling/Animation	3
DT 182	3D Studio Max-Adv 3D Modeling/Animation	3
GC 100	Graphic Communications	3
GCIP/ R GCIP 140	Digital Imaging/Photoshop I	3
GCIP/ R GCIP 152	Desktop Publishing/Illustrator I	3
GCMW 197B	Topics in Multimedia	3
GCMW/ R GCMW 102	Web Page Layout I	3
GCMW 203	Web Multimedia	3
MUS 180	Computer Music I	3
RTV 170	Introduction to Video Editing	3
TOTAL UNITS		**27**

Interactive Media Design A.A. Degree or Certificate of Achievement is also listed in Art and in Graphic Communications.

COURSE OFFERINGS

DT 100 Basic Mechanical Drawing (3)
2 hours lecture-3 hours laboratory
Transfer acceptability: CSU
Fundamentals of mechanical drawing including theory, lettering, sketching, geometric constructions, orthographic projection, sectioning, developments, dimensioning, and pictorial and working drawings.

DT 105 Basic Architectural Drafting (3)
6 hours lecture/laboratory
Transfer acceptability: CSU
An introduction to architectural drafting including symbols, lettering, construction principles, details, and codes as related to the development of working drawings for simple residential design.

DT 106 Intermediate Architectural Drafting (3)
6 hours lecture/laboratory
Prerequisite: DT 105
Transfer acceptability: CSU
A continued study in residential design including study in details, materials, elevations, specifications, electrical, and plumbing.

DT 110 Technical Drafting I with AutoCAD (4)
8 hours lecture/laboratory
Prerequisite: Completion of, or concurrent enrollment in, DT/R DT 125
Transfer acceptability: CSU
Fundamentals of drafting including lettering, sketching, instruments, geometric constructions, orthographic projections, dimensioning, tolerancing, sectional views and auxiliary views. Drafting will be performed on the computer using AutoCAD software.

DT 111 Technical Drafting II with AutoCAD (4)
8 hours lecture/laboratory
Prerequisite: DT 110 and DT/R DT 125
Transfer acceptability: CSU
The study of Advanced Drafting practices using AutoCAD software. Basic studies will lead into geometric dimensioning, tolerancing, pictorial drafting, descriptive geometry and revolutions. Working/shop drawings in topography, developments, cabinet/millwork, structural steel, and welding will be performed.

DT 116 Geometric Dimensioning and Tolerancing (3)
6 hours lecture/laboratory
Prerequisite: DT 100
Transfer acceptability: CSU
Note: May be taken 2 times
An introduction to geometric dimensioning and tolerancing as used in the electro/mechanical industry. The student will learn to identify and use appropriate geometric symbols and techniques of geometric dimension and produce industrial quality drawings.

DT 120 Architectural History (3)
3 hours lecture
Transfer acceptability: CSU; UC – DT 120 and 121 combined: maximum credit, one course
An overview of architectural history beginning with prehistoric cultures and continuing through Egyptian and Mesopotamia, Aegean and Greek, Roman and Byzantine, Romanesque and Gothic, and the Renaissance and Baroque periods. The second half of the course focuses on the development of modern western architecture.

DT 121 Multicultural Architectural History (3)
3 hours lecture
Transfer acceptability: CSU; UC – DT 120 and 121 combined: maximum credit, one course
A comparative study of the architecture of cultures outside the Western mainstream including: Pre-Columbian America; India and Southeast Asia, China and Japan, Russia and Eastern Europe; and the Moslem Empires. Special emphasis on the cultural forces and conditions which shaped and evolved the architecture.

To satisfy a prerequisite, the student must have earned a letter grade of A, B, C or CR in the prerequisite course, unless otherwise stated.

DT 125 AutoCAD Introduction to Computer Aided Drafting (3)
6 hours lecture/laboratory
Note: Cross listed as R DT 125; may be taken 2 times; maximum of 4 completions in any combination of DT/R DT 125, DT/R DT 126, DT/R DT 127
Transfer acceptability: CSU; UC – DT 125 and 126 combined: maximum credit, one course
An introduction to computer aided drafting using AutoCAD software and IBM compatible computers. Hands on experience with AutoCAD to include the following operations: preparing and editing drawings, storage and retrieval of drawings, and production of commercial quality drawings on a plotter. Introductory computer terminology and techniques in Windows.

DT 126 AutoCAD Intermediate Computer Aided Drafting (3)
6 hours lecture/laboratory
Prerequisite: DT 125/R DT 125
Note: Cross listed as R DT 126; may be taken 2 times; maximum of 4 completions in any combination of DT/R DT 125, DT/R DT 126, DT/R DT 127
Transfer acceptability: CSU; UC – DT 125 and 126 combined: maximum credit, one course
Advanced theory and hands on operation of a CAD system. Emphasis is placed on large scale drawings, three dimensional software techniques, orthographic projections, and complex computer aided manufacturing applications.

DT 127 AutoCAD Customization (3)
6 hours lecture/laboratory
Prerequisite: DT/R DT 125
Note: Cross listed as R DT 127; may be taken 2 times; maximum of 4 completions in any combination of DT/R DT 125, DT/R DT 126, DT/R DT 127
Transfer acceptability: CSU
Advanced theory and hands on operation of a CAD system. Emphasis is placed on increased productivity using customization and portfolio presentation for successful career opportunities

DT 128 SolidWorks Introduction to 3D Design and Presentation (3)
6 hours lecture/laboratory
Prerequisite: DT/R DT 125
Recommended preparation: DT 110
Note: Cross listed as R DT 128; may be taken 2 times
Transfer acceptability: CSU
Advanced theory and hands on operation of three-dimensional software techniques. Emphasis is placed on wireframe, surface, solid, and parametric three-dimensional modeling.

DT 129 Basic Architectural Drafting with Auto CAD (3)
6 hours lecture /laboratory
Transfer acceptability: CSU; UC
Basic fundamentals of architectural drafting using AutoCAD software to include the following drawings: plot plans, floor plans, foundation plans, framing plans, sections, elevations, and basic construction details.

DT 130 CAD/CAM Machining (3)
6 hours lecture/laboratory
Prerequisite: DT 110 and DT/R DT 128
Note: Cross listed as R DT 130; may be taken 2 times
Hands-on operation of importing three-dimensional solid and parametric three-dimensional models into CAD/CAM operations.

DT 131 SolidWorks Advanced 3D Design and Presentation (3)
6 hours lecture/laboratory
Prerequisite: DT/R DT 128
Note: Cross listed as R DT 131; may be taken 2 times
Transfer acceptability: CSU
Advanced theory and hands-on operation of solid and parametric three-dimensional models. Emphasis is placed on creating molds, advanced sheet metal design and developing dynamic assemblies.

DT 135 Architectural Materials and Methods of Construction (3)
6 hours lecture/laboratory
Transfer acceptability: CSU
An introduction to the use and application of building construction materials and processes.

DT 140 Electronic Drafting and Design (3)
6 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
Electro mechanical drafting and design generally required for an entry level position in the electronic industry.

DT 144 Architectural Drawing and Color (3)
6 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU; UC
An introduction to basic architectural drawing and design that explores the theory and application of perspective, shades and shadows, and color to architectural sketching, drawing, and model building. Includes a basic architectural design problem exploring the concept of architectural complexity.

DT 145 Architectural Delineation and Pictorial Drawing (4)
8 hours lecture/laboratory
Recommended preparation: DT/R DT 125 and DT 144
Note: May be taken 2 times
Transfer acceptability: CSU; UC
Principles and techniques of pictorial drawing in architecture including isometric, oblique, and perspective projection; shades and shadows; and presentation graphics. The three dimensional and shading capabilities of AutoCAD will be utilized in coordination with the use of Photoshop software as a color rendering tool. Abstract architectural design concepts will also be explored.

DT 155 Architectural Theory (3)
3 hours lecture
Transfer acceptability: CSU
A study and analysis of the concepts and philosophies that have influenced or been the basis of architectural form from the Classical period to the present. The analysis will include the use of drawing and model-building tools to gain an understanding of these principles applied to specific structures throughout history.

DT 160 Environmental Architecture and Design (3)
6 hours lecture/laboratory
Note: May not be taken for Credit/No Credit grading
Transfer acceptability: CSU; UC
An introduction to the theory and application of bio-climate adaptive architectural design in small scale buildings including effective energy use, solar geometry, environmental measurements, heat flow, heat transfer, and thermal masses. Emphasis is on design and construction principles for lighting, passive shading, heating, cooling and ventilating envelope load-dominated buildings.

DT 180 3D Studio Max – Introduction to 3D Modeling and Animation (3)
6 hours lecture/laboratory
Note: May be taken 2 times
Transfer acceptability: CSU
An overview of 3D Studio Max. Hands-on operation of the software to produce basic three-dimensional models and basic technical animations.

DT 182 3D Studio Max – Advanced 3D Modeling and Animation (3)
6 hours lecture/laboratory
Prerequisite: DT 180
Note: May be taken 2 times
Transfer acceptability: CSU
Advanced 3D Studio Max applications to create special visual effects for high-end

image production. Advanced keyframing, time-based editing, controllers, and video post will be employed to master state-of-the-art rendering and animation. The class is structured to help students start using 3D Studio Max in a production environment.

DT 184 Real Time 3D Technical/Game Animation (2)
4 hours lecture/laboratory
Transfer acceptability: CSU
Students will create interactive 3D applications using a direct X base real time engine for the game industry, computer based training and product visualization.

DT 185 Architectural 3D Studio MAX (3)
6 hours lecture/laboratory
Prerequisite: A minimum grade of 'C' in DT 125/R DT 125
Note: May be taken 2 times
Transfer acceptability: CSU; UC
An overview of 3D Studio MAX and AutoCAD to create realistic architectural three-dimensional models for rendering and animation.

DT 196A Special Problems in Drafting (1,2,3)
2, 4, or 6 hours lecture/laboratory
Note: May be taken 4 times
Transfer acceptability: CSU
This course is designed to aid the student in the enrichment of the area of concentration in drafting and is of a research nature. Content to be determined by the need of the student under signed contract with the instructor.

DT 196B Special Problems in Computer Aided Drafting (1,2,3)
2, 4, or 6 hours lecture/laboratory
Note: May be taken 4 times for a maximum of 9 units
Transfer acceptability: CSU
This is an advanced course designed to aid the student in the enrichment of an area of concentration in AutoCAD and third party drafting software and is of a research nature. Content to be determined by the need of the student under signed contract with the instructor.

DT 197 Drafting Technology Topics (.5-4)
Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of lecture, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.
Note: May be taken 4 times
Transfer acceptability: CSU
Topics in Drafting. See class schedule for specific topic covered. Course title will designate subject covered.

DT 200 Advanced Computer Aided Architectural Drafting (4)
8 hours lecture/laboratory
Prerequisite: DT/R DT 125 and completion of, or concurrent enrollment in, DT 105
Note: Cross listed as R DT 200; may be taken 2 times
Transfer acceptability: CSU
Advanced techniques in the operation of AutoCAD software for architectural applications on IBM-compatible computers. Preparation of various architectural working drawings from a preliminary residential design.

DT 202 Advanced Computer Aided Architectural Drafting II (4)
8 hours lecture/laboratory
Recommended preparation: DT/R DT 200
Note: Cross listed as R DT 202; may be taken 2 times
Transfer acceptability: CSU
Third-party architectural software for use in conjunction with AutoCAD software. Preparation of 3D architectural models and their manipulation for preparation of individual architectural working drawings including: dimensioned floor plans, building sections, elevations, etc.

DT 210 Printed Circuit Board Design (3)
6 hours lecture/laboratory
Prerequisite: A minimum grade of 'C' in DT 110
Note: May be taken 2 times
Transfer acceptability: CSU
Instruction in printed circuit board design generally required for entry level positions in the electronic industry. Includes artwork and complete documentation for analog and digital multi-layer, flexible and high-speed boards using current IPC standards. Drafting will be performed on the computer using high-end printed circuit board software.

DT 211 Advanced Printed Circuit Board Design (3)
6 hours lecture/laboratory
Prerequisite: DT 210
Note: May be taken 2 times
Advanced problems and instruction in printed circuit board design generally required for entry-level position in the electronic industry. Special emphasis will be placed on advanced applications including surface mount technology. Includes artwork and complete documentation for analog and digital multi-layer, flexible and high-speed boards using current IPC standards. Drafting will be performed on the computer using AutoCAD and PADS software.

DT 215 Architectural Design Fundamentals I (5)
10 hours lecture/laboratory
Recommended preparation: DT 144 and DT 155
Transfer acceptability: CSU; UC
Development of problem solving and analytical skills in architectural design involving consideration of factors of architectural form in two- and three-dimensional compositions, and design concepts and applications.

DT 216 Architectural Design Fundamentals II (5)
10 hours lecture/laboratory
Recommended preparation: DT 145 and DT 215
Transfer acceptability: CSU; UC
Complex architectural problems involving consideration of factors of structure, site, and climate.

Earth Sciences (ES)

Contact the Earth, Space, and Aviation Sciences Department for further information, (760) 744-1150, ext. 2512.

COURSE OFFERINGS

ES 100 The Earth as a System: Case Studies of Change in Space and Time (3)
3 hours lecture
Transfer acceptability: CSU; UC
An overview of the fields of geology, geography, oceanography, and astronomy that approach Earth as a system. Areas of study include those related to plate tectonics, earthquakes, volcanoes, geologic time, landscape evolution, weather systems, ocean circulation, climate change, and exploration of the solar system.

ES 105 Earth System Science: Climate Change (3)
3 hours lecture
Transfer acceptability: CSU; UC
Introduction to the science of global change that includes an overview of the international political debate and the mechanisms of the climate system. Topics also examine climate change on different time scales including the Ice Ages and the outlook for climate change.

ES 115 Natural Disasters and Environmental Hazards (3)
3 hours lecture
Note: Cross listed as GEOG 115
Transfer acceptability: CSU; UC
Examination and analysis of natural disasters and environmental hazards including earthquakes, tsunamis, volcanic activity, hurricanes, flooding, air and water polution, and global climate change.