



2024 | 2025 CATALOG FALL ADDENDUM



ANTELOPE
VALLEY
COLLEGE



Honors Transfer Alliance Program (TAP)

Antelope Valley College's Honors Transfer Alliance Program (TAP) offers a highly enriching pathway for transfer students. The Honors TAP program is dedicated to catering to a diverse student body by providing unique opportunities for one-on-one collaboration through faculty-led Honors Options Projects. It also entails engaging learning experiences in Honors courses characterized by smaller class sizes (21 students max), enhanced student interaction, rigorous writing assignments, research activities, and the development of presentation skills.

Moreover, the Honors Transfer Alliance Program (TAP) provides students with the advantage of priority consideration for admission to numerous major universities within the state and nationally. Transfer agreements between Honors programs are facilitated by the Honors Transfer Council of California (HTCC) www.honorstransfercouncil.org.

Open to all students at the college, Honors Courses and Options exemplify the program's commitment to equitable education. However, the program benefits are exclusively to formally admitted students through an application process.

For more information about Honors TAP, please visit www.avc.edu/honors.

Academic Progress/Guidance

Antelope Valley College has transitioned from terminologies such as "Academic Probation" or "Academic Dismissal" to mitigate the negative connotations and stigma associated with probation within the community college setting. Through the R.I.S.E. Program's student-centered and equity-focused strategies, R.I.S.E. aims to consciously update its language to mirror the institution's commitment to transforming campus culture and emphasizing inclusivity when students do not meet the minimum academic standards outlined in Title V policy. R.I.S.E. provides individual counseling and purposeful workshops to assist students with returning to academic good standing with the college. For more information about the R.I.S.E. Department, please see "Campus Services" in the catalog.

Academic Guidance Formerly known as Academic Probation. A student who has attempted 12 semester units of AVC credit shall be placed on Academic Guidance levels 1, 2, or 3 when the earned GPA in all units attempted at AVC is less than 2.0.

A student is removed from Academic Guidance and returns to Good Standing when the earned GPA in all units attempted at AVC is a 2.0 or higher.

Progress Guidance Formerly known as Progress Probation. A student who has enrolled in at least 12 semester units of AVC credit is placed on Progress Guidance levels 1, 2, or 3 when the percentage of all units in which a student has enrolled with entries of W, I and NP "grades" reaches or exceeds 50 percent. In other words, having an excess of W, I, NP grades can affect the student completion rate.

A student is removed from Progress Guidance and returns to Good Standing when the percentage of all units in which the student has enrolled and for which entries of W, I, and NP recorded drops below 50 percent.

Levels

Guidance Level 1 refers to a student's first term on Academic/Progress Guidance.

Guidance Level 2 refers to a student's second term on Academic/Progress Guidance

Guidance Level 3 refers to a student's third term, which is a year or year and a half, on Academic/Progress Guidance.

Students are notified of their academic status from the college by their AVC email. Students are sent multiple emails regarding their Academic/Guidance Levels which details time sensitive requirements to be completed. If not met, students are warranted to dismissal where they must sit out one semester (fall/spring). Students who believe they have been dismissed in error or have an extenuating circumstance they believe warrants an exception to the dismissal may file an Appeal with the R.I.S.E. office.

Students must abide by the Academic/Progress Guidance interventions every semester until they return to Good Standing with the college.

Attention Veterans: For students who are eligible to receive educational benefits from the Veterans Administration, if the earned grade point average in all units attempted at AVC is less than 2.0 in each of three consecutive semesters, the college will not certify the student's enrollment to the Veterans Administration for payment of benefits until the student's earned grade point average is 2.0 or better.

A student, who after sitting out one term due to their Academic/Progress Guidance Level 3 standing, may submit a Reinstatement Petition to the R.I.S.E. Department. Upon review, they will be notified once a decision is made regarding the petition, and the required next steps. The steps include, but are not limited to, a mandatory workshop and meeting with a counselor to make a student educational plan.

Intersegmental General Education Transfer Curriculum (IGETC)

Completion of the Intersegmental General Education Transfer Curriculum (IGETC) will permit a student to transfer from a California Community College (CCC) to a University of California (UC) campus generally without the need, after transfer, to take additional lower-division, general education courses to satisfy campus general education requirements. Completion of IGETC prior to transfer is strongly recommended. Advantages of completing IGETC may include more flexibility in class selection at the university and timely progress to degree completion. Most UC campuses will accept the completed IGETC to satisfy lower-division general education requirements. Depending on their major, some individual colleges within a UC campus may accept IGETC while others may accept the UC “Seven-Course-Pattern”. Students are encouraged to speak with a counselor to discuss the transfer general education options.

However, if a student is pursuing IGETC certification, the course requirements for all areas must be completed before the IGETC can be certified. All courses must be completed with grades of “C” or better. Additionally, the IGETC must be completed and certified before the student enrolls at a UC campus. Requirements for the IGETC cannot be completed once the student enrolls at a UC campus.

Students can submit a request for IGETC certification with the AVC Transcript Office. Certifications are sent along with the student’s official transcript to the CSU or UC campus. Students are encouraged to monitor the documentation timelines from the CSU or UC campus as to when the IGETC certification has to be received at the transfer institution.

IGETC Area 7 - Ethnic Studies- Effective Fall 2023

Commencing with students graduating in the 2024–25 academic year, the California State University shall require, as an undergraduate graduation requirement, the completion of, at minimum, one three-unit course in Ethnic Studies.

Please note: (1) - New students starting at a CCC beginning Fall 2023 are required to complete a 3 semester/4 quarter unit course to satisfy the Ethnic Studies (IGETC Area 7) requirement.

(2) - Students who graduated from high school prior to Spring 2023 and started at a CCC prior to Fall 2023, and have maintained continuous enrollment are not required to complete IGETC Area 7. Instead, the student will complete 9 units in IGETC Area 4 (see list for approved courses)

(3) Concurrently enrolled students (high school and AVC) shall complete the Ethnic Studies requirement regardless of first term of enrollment or general education pattern chosen (CSU GE or IGETC). For additional information, speak with a counselor.

IGETC for STEM

Students pursuing the Biology AS-T degree are eligible to complete the IGETC for STEM option. The IGETC for STEM option *defers* two lower-division general education courses that must be completed after a student transfers. For certification under IGETC for STEM, students must complete the following:

- All courses in Areas 1, 2, 5, and 7 of the traditional IGETC; and
- Two courses in Area 3 (3A and 3B) and one course in Area 4.

One remaining lower-division general education course in Area 3, one remaining lower-division general education course in Area 4, and, if necessary, one remaining course in Area 6A will be completed after transfer. This general education plan will allow STEM students to concentrate on the required lower-division math and science courses needed for success in the major. The following program approved to use IGETC for STEM:

Biology, AS-T

The following information is based on the IGETC list. Consult with a counselor for the most current requirements, which are subject to change.

AREA 1– English Communication

CSU: Three courses required, minimum of one from Group A, B and C.

UC: Two courses required, minimum of one from Group A and B.

Group A: English Composition

One course, 3 semester or 4 quarter units. No AP or IB scores accepted for this area.

ENGL 101, (101H)

Group B: Critical Thinking–English Composition

One course, 3 semester or 4 quarter units. Course selected must have English Composition as a prerequisite. No AP or IB scores accepted for this area.

ENGL 102, (102H), 103, (103H)

PHIL 201

Group C: Oral Communication (CSU only)

One course, 3 semester or 4 quarter units. No AP or IB scores accepted for this area.

COMM 101, (101H)

AREA 2– Mathematical Concepts and Quantitative Reasoning

One course, 3 semester or 4 quarter units.

MATH 110, 115, (115H), 116, 124, 128, 140, 148, 150, (150H), 160, 220, 230, 250

AREA 3 – Arts and Humanities

Three courses, 9 semester or 12 quarter units. At least one course from the Arts and one from the Humanities.

A: Arts:

ART 100, 101, (101H), 102, 103, 104, 106

DA 101

ENGL 235

FTV 101, 107, 108, 201, 203

MUS 101, (101H), 105

MUSC 102, 103, 107, 108, (109)

THA 101, (101H), 110, 225

B: Humanities:

CHIN 102

COMM 114, 217

ENGL 221, 222, 225, 227, 230, 231, 235, 242, 253, (253H), 256, 257, 259, 265, 279

FREN 102, 201, 202, 203

FTV 201, 203, 251

GER 102, 201, 202

HIST 101, 102, 104, 105, 107, (107H), 108, (108H), 110, (110H), 111, (111H), 113, 115, 119

LATN 102, 201

PHIL 105, (105H), 106, 108, 109

PHOT 107

SPAN 110SS, 201, 202, 203, 210SS, 220SS

THA 239, (239H)

AREA 4 – Social and Behavioral Sciences

Two courses, 6 semester or 8 quarter units. **Two academic disciplines are required.**

AJ 206
 ANTH 102, 103, 110, 112, (112H), 140
 BUS 212
 CFE 102, 103
 DFST 105, 106, 110
 ECON 100, 101, (101H), 102, (102H), 110
 GEOG 105, 106, 110
 HIST 101, 102, 104, 105, 107, (107H), 108, (108H), 110, (110H), 111, (111H), 113, 114, 116, 118, 119
 POLS 101, (101H), 103, 200, 202, 203
 PSY 101, (101H), 200, 201, 212, 230, 232, 233, 234, 235, 236
 SOC 101, (101H), 105, 110, 111, 112, 115, 116, 120, 200

AREA 5 – Physical and Biological Sciences

Two courses, 7 semester or 9 quarter units, with one from the Physical Science and one from the Biological Science; at least one of the two courses must include a Laboratory.

A: Physical Sciences:

ASTR 101, (101H)
 CHEM 101#, 102#, 110#, 120#, 210#, 220#
 ERSC 101#
 GEOG 101, 102
 GEOL 101, (101H), 102
 PHYS 101#, 102#, 110#, 120#, 211#
 PSCI 101

B: Biological Sciences:

ANTH 101, (101H)
 BIOL 101*#, 102#, 103#, 104, (104H), 110#, 120#, 201#, 202#, 204#, 205#
 #Meets laboratory requirement.
 *# Must register for required lab component separately.

C: Laboratory:

ANTH 101L
 ASTR 101L
 BIOL 101L
 GEOG 101L, 102L
 GEOL 101L, 102L

AREA 6 – Language Other Than English (UC Requirement ONLY)

Proficiency equivalent to two years of high school study, in the United States, in the same language with a grade of “C” or better **OR** earn a score of 3 or higher on the AP Foreign Language test, **OR** complete one of the foreign language courses listed below.

CHIN 102, 201, 202
 DFST 102, 201, 202
 FREN 102, 201, 202, 203
 GER 102, 201, 202
 LATN 102, 201
 SPAN 102, 110SS, 201, 202, 203, 210SS, 220SS

^Students must provide AVC with an official high school transcript and/or an official college board score report in order for this area to be certified without the need to complete additional courses at AVC.

AREA 7 – Ethnic Studies

1 course, 3 semester or 4 quarter units

*Reduction of units in Area 4 and inclusion of Area 7 take effect for students matriculating at a California community college beginning in Fall 2023

ENGL 257
 or
 ETHN 257EN

PLEASE NOTE: Newly approved courses effective Fall 2024 are indicated in parenthesis.

Bachelor Degree

Airframe Manufacturing Technology BS

The Airframe Manufacturing Technology baccalaureate degree builds off of two existing high quality, successful programs that have provided well trained employees to meet the needs in our communities for many years. By expanding these programs to include the opportunity to earn a baccalaureate degree, Antelope Valley College will now fill the need of local employers for a highly skilled lead worker in the same field and will provide a valuable opportunity for both our students and our community.

The Airframe Manufacturing Technology program will include courses in disciplines in which Antelope Valley College already offers degrees and certificates: Aircraft Fabrication and Assembly and Airframe and Powerplant. Entrance into the baccalaureate courses will require graduation from or substantial completion of one of those programs prior to admission to upper division courses.

Minimum Eligibility Requirements for Applicants:

1. Completion of the Aircraft Fabrication & Assembly Technician (AFAB) associate degree/course sequence or noted equivalent Aeronautical and Aviation Technology courses and AFAB 130 and AFAB 210.
2. Completion of the general education requirements for the CSU system, including:

CHEM 101, Introductory Chemistry	5
COMM 101, Introduction to Public Speaking <i>or</i>	3
ENGL 101, College Composition	3
ENGL 115, Introduction to Technical Communication	3
PSY 101, General Psychology	3
PHYS 101, Introductory Physics	4
MATH 135, Plane Trigonometry	3

Airframe Manufacturing Technology (AFMT) Bachelor's Degree Program

Antelope Valley College (AVC) does not accept externally completed coursework to satisfy major and/or upper division course requirements in Aircraft Fabrication & Assembly (AFAB), Airframe and Powerplant (AERO), and Airframe Manufacturing Technology (AFMT).

NOTE: Above courses fulfill both the major and the general education requirements. For assistance, contact the counseling department.

3. Students must have a 3.0 minimum GPA in all AFAB/AERO courses and a 3.0 minimum GPA in all college classes taken for credit (overall GPA).

NOTE: The aerospace industries generally require employment applicants to pass a background check and drug screening. Employment is often subject to the applicant's ability to receive a security clearance from the Department of Defense (DoD).

Application Process:

Refer to announcements on the AVC website for updated enrollment information. All items in the enrollment process are extremely important. Students who omit any part of the required information or miss the deadline will be dropped from consideration for the Airframe Manufacturing Technology Program. Only official documents will be accepted. Faxed documents are not official and are not accepted.

1. Complete an Application for Enrollment form.
2. Complete the AFMT Rubric - Student Questionnaire form.
3. Attach official college transcripts for all post-secondary institutions attended, including Antelope Valley College. If you have Advance Placement (AP) credits, an official transcript must also be included. **The AP transcript must be ordered from College Board.** "Official" college transcripts must be submitted in a sealed envelope that has not been opened by the student. **One set of transcripts is to be turned in with your application and one set must also be on file with the AVC transcript office.**
4. Attach a copy of your updated Education Plan and Evaluation Form completed by one of the AVC Counselors or Advisors assigned to the AFMT program. Visit www.avc.edu/academics/afmt for the list. Appointments should only be made with the assigned personnel and can be made through email at counseling@avc.edu or by calling (661) 722-6300 ext. 6338. Students should request an appointment minimum of two weeks prior to the application deadline.
5. Submit items 1 through 4 to the Career Technical Education division office, Enterprise Lab, Room 129. Items 1 through 4 are considered your "application packet". You may also mail your application packet to: Antelope Valley College, Attn: Rosie Heasley, 3041 W. Avenue K, Lancaster, CA 93536.

For the most current program information, including forms please visit us at www.avc.edu/program/afmt.

Screening Procedures:

Student eligibility for admission to the program will be determined by multi-screening criteria. Applications are accepted once a year during the designated application period only. Cohorts are admitted annually in the fall semester. Refer to announcements on the AVC website for updated enrollment information and important dates. The number of students enrolled into the program is limited to 18 students per year. Students are advised of eligibility to enroll in AFMT program by electronic mail. **Incomplete packets will not be considered.**

Program Requirements

Airframe Manufacturing Tech BS (Total 122 - 126.5)

Complete all of the following: **Units**

Program Prerequisites (Total 50 - 54.5)

Complete all of the following:

Program Prerequisites (Total 3 - 7.5)

Complete the following number of units: 3-7.5

AFAB Option (Total 3)

AFAB110 - Introduction to Aircraft Structures, Blueprints, and Manufacturing Documentation 3

AERO Option (Total 7.5)

AERO121 - Aircraft General II 7.5

Program Prerequisite (Total 15)

Complete the following number of units: 15

Program Prerequisite AFAB (Total 15)

AFAB115 - Aircraft Structures 8

AFAB120 - Composites Fabrication and Repair 7

Program Prerequisite AERO (Total 15)

AERO230 - Aircraft Airframe I 15

Program Prerequisites (Total 32)**Complete all of the following:**

AFAB130 - Aerospace Ethics and Issues (CSU GE Area C2)	4
AFAB210 - Aircraft Production Systems	4
CHEM101 - Introductory Chemistry	5
COMM101 - Introduction to Public Speaking (CSU GE Area A1)	3
ENGL101 - College Reading and Composition (CSU GE Area A2)	3
ENGL115 - Introduction to Technical Communication (CSU GE Area A3)	3
MATH135 - Plane Trigonometry (CSU GE Area B4)	3
PHYS101 - Introductory Physics	4
PSY101 - General Psychology (CSU GE Area D)	3

Required Courses (Total 66)**Complete all of the following:**

AFMT310 - Safety in Aviation	3
AFMT320 - Lean Management (Six Sigma/5S)	3
AFMT330 - Airframe Manufacturing Producibility	3
AFMT340 - Theory of Low Observables	3
AFMT341 - Manufacturing Testing and Inspection	6
AFMT345 - Airframe Composite Manufacturing I	6
AFMT350 - Airframe Manufacturing Capstone I	2
AFMT442 - Foreign Object Elimination (FOE) and Migration Paths	3
AFMT446 - Airframe Composite Manufacturing II	6
AFMT451 - Airframe Manufacturing Capstone II	4
BIOL304 - A Survey of Emerging and Remerging Infectious Diseases (CSU GE Area B2)	3
ELTE105 - Introduction to Robotics	3
POLS101 - American Political Institutions (CSU GE Area D)	3
ENGL315 - Applied Technical Writing (Upper Division GE)	3
PSCI302 - Introduction to Quantitative Atmospheric Dynamics and Thermodynamics (Upper Division GE)	3
PSY301 - Organizational Behavioral Psychology (Upper Division GE)	3
CSU Area C-1	3
CSU Area C-1/C-2	3
CSU GE Area E	3

Required Course - Choose one (Total 3)**Complete the following number of units: 3****CAD Options ENGR (Total 3)**

ENGR140 - Engineering 3D Graphics	3
CAD Options AM (Total 3)	
AM135B - 3D Solid Modeling I using Solidworks	3

Required History Courses CSU Area D - Choose One (Total 3)**Complete the following number of units: 3**

HIST107 - U.S. History, 1607-1877	3
HIST108 - U.S. History from 1865	3
HIST110 - African-American History, 1450-1877	3
HIST111 - African-American History, 1877-Present	3

Recommended Pathway**AERO Sequence**

Fall Semester	Units
AERO121 - Aircraft General II	7.5
AFAB130 - Aerospace Ethics and Issues (CSU GE Area C2)	4
COMM101 - Introduction to Public Speaking (CSU GE Area A1)	3
ENGL101 - College Reading and Composition (CSU GE Area A2)	3
POLS101 - American Political Institutions (CSU GE Area D)	3
Total	20.5
Spring Semester	
AERO230 - Aircraft Airframe I	15
Total	15
Summer Semester	
PSY101 - General Psychology (CSU GE Area D)	3
CSU GE Area E	3
Total	6
Fall Semester	
AFAB210 - Aircraft Production Systems	4
MATH135 - Plane Trigonometry (CSU GE Area B4)	3
PHYS101 - Introductory Physics	4
CSU GE Area C-1	3
CSU GE Area C-1/C-2	3
Total	17
Spring Semester	
CHEM101 - Introductory Chemistry	5
CSU GE Area D (recommended HIST107 or HIST108 or HIST110 or HIST111)	3
ENGL115 - Introduction to Technical Communication (CSU GE Area A3)	3
Total	11
Fall Semester	
BIOL304 - A Survey of Emerging and Remerging Infectious Diseases (CSU GE Area B2)	3
ENGL315 - Applied Technical Writing (Upper Division GE)	3
PSCI302 - Introduction to Quantitative Atmospheric Dynamics and Thermodynamics (Upper Division GE)	3
PSY301 - Organizational Behavioral Psychology (Upper Division GE)	3
Total	12
Spring Semester	
AFMT310 - Safety in Aviation	3
AFMT320 - Lean Management (Six Sigma/5S)	3
AFMT330 - Airframe Manufacturing Producibility	3
ELTE105 - Introduction to Robotics	3
ENGR140 - Engineering 3D Graphics <i>or</i> AM135B - 3D Solid Modeling I using Solidworks	3
Total	15
Fall Semester	
AFMT340 - Theory of Low Observables	3
AFMT341 - Manufacturing Testing and Inspection	6
AFMT345 - Airframe Composite Manufacturing I	6
AFMT350 - Airframe Manufacturing Capstone I	2
Total	17

Spring Semester

AFMT442 - Foreign Object Elimination (FOE) and Migration Paths	3
AFMT446 - Airframe Composite Manufacturing II	6
AFMT451 - Airframe Manufacturing Capstone II	4

Total 13**Degree Total 122-126.5**

Recommended Pathway AFAB Sequence
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Fall Semester**Units**

AFAB110 - Introduction to Aircraft Structures, Blueprints, and Manufacturing Documentation	3
AFAB130 - Aerospace Ethics and Issues (CSU GE Area C2)	4
COMM101 - Introduction to Public Speaking (CSU GE Area A1)	3
ENGL101 - College Reading and Composition (CSU GE Area A2)	3
POLS101 - American Political Institutions (CSU GE Area D)	3

Total 16**Spring Semester**

AFAB115 - Aircraft Structures	8
AFAB120 - Composites Fabrication and Repair	7

Total 15**Summer Semester**

PSY101 - General Psychology (CSU GE Area D)	3
CSU GE Area E	3

Total 6**Fall Semester**

AFAB210 - Aircraft Production Systems	4
MATH135 - Plane Trigonometry (CSU GE Area B4)	3
PHYS101 - Introductory Physics	4
CSU Area C-1	3
CSU Area C-1/C-2	3

Total 17**Spring Semester**

CHEM101 - Introductory Chemistry	5
ENGL115 - Introduction to Technical Communication (CSU GE Area A3)	3
CSU GE Area D (HIST107 or HIST108 or HIST110 or HIST 111	3

Total 11**Fall Semester**

BIOL304 - A Survey of Emerging and Remerging Infectious Diseases (CSU GE Area B2)	3
ENGL315 - Applied Technical Writing (Upper Division GE)	3
PSCI302 - Introduction to Quantitative Atmospheric Dynamics and Thermodynamics (Upper Division GE)	3
PSY301 - Organizational Behavioral Psychology (Upper Division GE)	3

Total 12**Spring Semester**

AFMT310 - Safety in Aviation	3
AFMT320 - Lean Management (Six Sigma/5S)	3
AFMT330 - Airframe Manufacturing Producibility	3
ELTE105 - Introduction to Robotics	3
ENGR140 - Engineering 3D Graphics or AM135B - 3D Solid Modeling I using Solidworks	3

Total 15**Fall Semester**

AFMT340 - Theory of Low Observables	3
AFMT341 - Manufacturing Testing and Inspection	6
AFMT345 - Airframe Composite Manufacturing I	6
AFMT350 - Airframe Manufacturing Capstone I	2

Total 17**Spring Semester**

AFMT442 - Foreign Object Elimination (FOE) and Migration Paths	3
AFMT446 - Airframe Composite Manufacturing II	6
AFMT451 - Airframe Manufacturing Capstone II	4

Total 13**Degree Total 122-126.5**

CHEM 210 ORGANIC CHEMISTRY

5 Units

Total Course Lecture Hours 54

Total Course Lab Hours 108

Prerequisite: Completion of CHEM 120.

This course is a study of molecular structure, bonding, nomenclature, stereochemistry, spectral and other physical properties of organic compounds. A major topic will be the preparations, reactions, and reaction mechanisms of organic compounds. The laboratory generally evaluates material that is being studied in lecture. Students learn to use and interpret the data from various equipment available in the laboratory. The course is intended for those planning to earn a 4-year degree in science or a related field. (UC, CSU, AVC) (GE: IGETC Areas 5A, 5C, CSU Areas B1, B3)

CHEM 220 ORGANIC CHEMISTRY

5 Units

Total Course Lecture Hours 54

Total Course Lab Hours 108

Prerequisite: Completion of CHEM 210.

This course is a continuation of the study of molecular structure, bonding, nomenclature, stereochemistry, spectral and other physical properties of organic compounds. A major topic will be the preparations, reactions, and reaction mechanisms of organic compounds. A short introduction will be given covering biochemical topics. The laboratories generally follow material that is being studied in lecture. The course is intended for those planning to earn a 4-year degree in science or a related field. (UC, CSU, AVC) (GE: IGETC Areas 5A, 5C, CSU Areas B1, B3)

DM 203 GRAPHIC DESIGN II

3 Units

Total Course Lecture Hours 27

Total Course Lab Hours 81

Prerequisite: Completion of DM 103.

Instructional Fee: Students may need to purchase a Student Adobe Creative Suite Software License

This course provides advanced instruction in graphic design and production for the digital media arts industry. Students will learn to create visual design solutions for a variety of media such as television, Web, and print using industry standard software and hardware at an advanced level for creation of design projects such as brochures, ads, packaging, Web pages, and television graphics. Focus will be on developing portfolio-quality contemporary visual design solutions to typical industry projects. (CSU, AVC)