

COMPUTER GRAPHICS AND DESIGN

A.S. Degrees and Certificates of Achievement

Advanced Technical Computer Graphics Option
Computer Graphics for Environmental Design Option
Technical Desktop Publishing & Graphics Option



An AS Degree or Certificate of Achievement in Computer Graphics & Design (CGD) provides technical skills and multidisciplinary knowledge required by diverse design careers. CGD graduates can describe ways projects presented within their electronic portfolio incorporate design principles, use appropriate materials, apply sustainable practices and integrate human factors and ergonomic features. CGD learning outcomes prepare graduates for proposing, designing, engineering, manufacturing and marketing real and/or virtual products. Projects completed by CGD graduates demonstrate competencies in systematically applying graphical methods to communicate analytical solutions by using creative problem solving, sketching, drafting, 3D graphics (including animating and rendering projects) - skills expected of entry level design technicians and/or engineering, architecture, environmental planning, animation, industrial, product and other design transfer students.

Program Learning Outcomes:

After completing this degree/ certificate the student will be able to:

- ▶ Describe specialized skills for entry and success in desired technical graphics careers.
- ▶ Prepare samples of work that demonstrate entry level proficiencies.
- ▶ Use design problem solving to propose an aesthetically pleasing design that satisfactorily addresses clients' needs.
- ▶ Apply design principles and color theory when developing presentations.
- ▶ Design and present consumer products using working drawings, 3D graphic models and multimedia applications (audio, video, graphics and text).
- ▶ Develop an electronic portfolio to present to potential clients/employers.

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Computer Graphics & Design Options

Completion of the core courses and the additional requirements in a selected area (below) will qualify students for a Degree or Certificate of Achievement in Computer Graphics & Design

CORE COURSES:

CGD 2	2D/3D Technical Computer Graphics I	3	units
CGD 4	2D/3D Technical Computer Graphics II	3	units
CGD 8	Advanced Computer Graphics for Design Application I	3	units
CGD 9	Advanced Computer Graphics for Design Application II	3	units
Core Unit Total:		12	UNITS

Students completing Core Computer Graphics & Design (CGD) courses present real and/or virtual designed products within electronic portfolios. CGD graduates' work samples reveal their ability to apply a creative problem solving process to propose, develop, refine and present products associated with their career goal. Freehand sketches combined with SolidWorks, 3D parametric BIM software or other industry standard CAD drawings and models are used to design aesthetically pleasing functional objects, explain manufacturing processes, apply sustainable practices, and support marketing efforts. CGD graduates' work samples of realistic rendered 3D models of innovative products help make them competitive when transferring to design schools and seeking entry level positions.

Advanced Technical Computer Graphics Option

A.S. Degree or Certificate of Achievement

To receive an ASSOCIATE'S DEGREE complete:

- ▶ CORE COURSES (above)
- ▶ REQUIRED COURSES (below)
- ▶ GENERAL EDUCATION REQUIREMENTS, (Gavilan, IGETC or CSU pattern), plus sufficient electives to meet a 60 unit total. See pages 48-56.

To receive a CERTIFICATE OF ACHIEVEMENT complete the:

- ▶ CORE COURSES (above)
- ▶ REQUIRED COURSES (below)

This option supports students seeking careers in technical design. Graduates with this degree/certificate produce electronic portfolios that show the ability to design and develop real and virtual world products that are cost effective and functional. Demonstrating knowledge of technical design practices and specialized computer graphics skills helps graduates transfer to universities and obtain entry level technician positions in precision manufacturing, computer aided drafting, and related technical design fields.

CORE COURSES (above): 12 units

ADDITIONAL REQUIREMENTS:

CGD 6 Advanced Technical Computer Graphics 4 units

Choose one:

- CGD 30 Introduction to Environmental Design (3 units)
- CGD 160 Technical Desktop Publishing/Graphics (3 units)
- CSIS 45 C++ Programming I (4 units)

..... 3-4 units

Total Units for Required: 19-20 UNITS

Program Learning Outcomes: After completing this degree/certificate the student will be able to:

- ▶ Describe specialized skills for entry and success in desired technical graphics career.
- ▶ Prepare samples of work that demonstrate entry level proficiencies.
- ▶ Use design problem solving to propose an aesthetically pleasing design that satisfactorily addresses clients' needs.
- ▶ Apply design principles and color theory when developing presentations.
- ▶ Design and present consumer products using working drawings, 3D graphic models and multimedia applications (audio, video, graphics and text).
- ▶ Develop an electronic portfolio to present to potential clients/employers.

Gainful Employment Statistics for Certificate

Name of Program: (if different than the CIP program description)	CA in Advanced Tech Comp Graph	
Program Length: (in years)	1.00	
# of units/credits required for program:	19-20	
Total Tuition and Required Fees for the entire program completed in normal time:	CA Resident \$ 690 - \$ 762	Nonresident \$ 3,930 - \$ 4,362
Total estimated costs for books and supplies for the entire program:	\$ 1,620.00	
Total room and board charges for living on campus:	College does not offer on-campus living.	
For more information visit the Gavilan College Gainful Employment website at http://www.gavilan.edu/gainful_employment . Fees based on fall 2011 per-unit rates.		

General Education Requirements: A student may complete the Gavilan College AA/AS general education, the CSU-GE Breadth or the IGETC pattern, plus sufficient electives to meet a 60 unit total. See pages 48-56 or see a counselor for details.

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule" on page 46.

Computer Graphics for Environmental Design Option

A.S. Degree or Certificate of Achievement

To receive an ASSOCIATE'S DEGREE complete:

- ▶ **CORE COURSES** (listed on page 99).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.
- ▶ **GENERAL EDUCATION REQUIREMENTS** (Gavilan, IGETC or CSU pattern), plus sufficient electives to meet a 60 unit total. See pages 48-56.

To receive a CERTIFICATE OF ACHIEVEMENT complete:

- ▶ **CORE COURSES** (listed on page 99).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.



Architectural rendering by Gavilan student Aida Hurtado

This option supports students seeking careers in environmental design fields. Demonstrating knowledge of sustainable design practices and specialized computer graphics skills helps graduates transfer to universities and obtain entry level technician positions in human environment design fields such as architecture (including interior and landscape design), environmental planning, construction management, civil engineering and animation within human environments. Graduates with this degree/certificate produce electronic portfolios that include animated models of rendered facilities and LEED ("green") design features within a set of industry standard construction documents generated using AutoCAD, 3D parametric BIM software and/or other computer aided drafting software.

CORE COURSES (see page 99):12 units

ADDITIONAL REQUIREMENTS:

CGD 30 Introduction to Environmental Design3 units

Choose one:

- | | |
|----------------|---|
| CGD 160 | Technical Desktop Publishing/Graphics (3 units) |
| CSIS/DM 75 | Photoshop I - Adobe PhotoShop (3 units) |
| ART/CSIS/DM 76 | Digital Illustration (3 units) |
| ART 2A | Two-Dimensional Design (3 units) |
| ART 3A | Drawing and Composition (3 units) |
| ART 13 | Three-Dimensional Design (3 units) |

.....3 units

Total Units for Required:18 UNITS

Program Learning Outcomes: After completing this degree, or certificate a student will be able to:

- ▶ describe specialized skills for entry and success in desired environmental career and prepare samples of work that demonstrate entry level proficiencies.
- ▶ use design problem solving to propose an aesthetically pleasing sustainable environment that satisfactorily addresses clients needs.
- ▶ apply design principles and color theory when developing presentations.
- ▶ design environments that that demonstrate knowledge of human factors and ergonomic principles.
- ▶ develop an electronic portfolio to present to potential clients/employers.
- ▶ specify materials that are cost effective and environmentally sound.
- ▶ prepare drawings that are consistent with architectural standards.

Gainful Employment Statistics for Certificate

Name of Program: (if different than the CIP program description)	CA in CG-Environmental Design	
Program Length: (in years)	1.00	
# of units/credits required for program:	18	
Total Tuition and Required Fees for the entire program completed in normal time:	CA Resident	Nonresident
	\$ 690	\$ 3,930
Total estimated costs for books and supplies for the entire program:	\$ 1,620	
Total room and board charges for living on campus:	College does not offer on-campus living.	
For more information visit the Gavilan College Gainful Employment website at http://www.gavilan.edu/gainful_employment . Fees based on fall 2011 per-unit rates.		

General Education Requirements: A student may complete the Gavilan College AA/AS general education, the CSU-GE Breadth or the IGETC pattern, plus sufficient electives to meet a 60 unit total. See pages 48-56 or see a counselor for details.

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule" on page 46.

Technical Desktop Publishing and Graphics Option

A.S Degree or Certificate of Achievement

To receive an ASSOCIATE'S DEGREE complete:

- ▶ **CORE COURSES** (listed on page 99).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.
- ▶ **GENERAL EDUCATION REQUIREMENTS** (Gavilan, IGETC or CSU pattern), plus sufficient electives to meet a 60 unit total. See pages 48-56.

To receive a CERTIFICATE OF ACHIEVEMENT complete:

- ▶ **CORE COURSES** (listed on page 99).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.

CORE COURSES (see page 99):12 units

ADDITIONAL REQUIREMENTS:

CGD 160 Technical Desktop Publishing/Graphics3 units

Choose one:

- CSIS/DM 73 Desktop Publishing - Adobe InDesign (3 units)
- CSIS/DM 75 Photoshop I - Adobe PhotoShop (3 units)
- ART/CSIS/DM 76 Digital Illustration (3 units)

.....3 units

Total Units for Required: 18 UNITS

General Education Requirements: A student may complete the Gavilan College AA/AS general education, the CSU-GE Breadth or the IGETC pattern, plus sufficient electives to meet a 60 unit total. See pages 48-56 or see a counselor for details.

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule" on page 46.

Program Learning Outcomes: After completing this degree/certificate the student will be able to:

- ▶ Describe specialized skills for entry and success in desired desktop publishing careers and prepare samples of work that demonstrate entry level proficiencies.
- ▶ Use design problem solving to propose an aesthetically pleasing design that satisfactorily addresses clients needs.
- ▶ Apply design principles and color theory when developing presentations
- ▶ Thoughtfully use typography to create attractive, readable text.
- ▶ Develop an electronic portfolio to present to potential clients/employers that integrates typography, design and color theories to showcase work samples.

This option supports students seeking careers in technical desktop publishing. Graduates with this degree/certificate produce electronic portfolios that show the ability to integrate typography, design and color theory to effectively present work customized for the target audience. Demonstrating knowledge of design and color theory and creative problem solving prepares graduates for transfer to universities and for entry level positions in technical publishing and related fields.

Gainful Employment Statistics for Certificate		
Name of Program: (if different than the CIP program description)	CA in Technical Desktop Publishing and Graphics	
Program Length: (in years)	1.00	
# of units/credits required for program:	18	
Total Tuition and Required Fees for the entire program completed in normal time:	CA Resident	Nonresident
	\$ 690	\$ 3,930
Total estimated costs for books and supplies for the entire program:	\$ 1,620	
Total room and board charges for living on campus:	College does not offer on-campus living.	
For more information visit the Gavilan College Gainful Employment website at http://www.gavilan.edu/gainful_employment . Fees based on fall 2011 per-unit rates.		