

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

* CGD degree and certificate options have changed and are pending Chancellor's Office approval. Please see a Gavilan counselor or check the college website for current status. Refer to page 64.



Gavilan students Krystina Zamora, Kevin Connell and Dustin Meyer in the Computer Graphics Lab.

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 ergonomic features. CGD learning outcomes prepare graduates for proposing, manufacturing and marketing real and/or virtual products. Projects completed by CGD graduates' demonstrate competencies in 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.

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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 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 or other industry standard CAD drawings and models are used to design aesthetically pleasing functional objects, explain manufacturing processes 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** (listed above).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.
- ▶ **GENERAL EDUCATION REQUIREMENTS** (Gavilan, IGETC or CSU pattern), plus sufficient electives to meet a 60 unit total. See pages 47-57.

To receive a CERTIFICATE OF ACHIEVEMENT complete:

- ▶ **CORE COURSES** (listed above).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.

CORE COURSES:12 units

ADDITIONAL REQUIREMENTS:

CGD 6 Advanced Technical Computer Graphics 3-4 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: 18-20 UNITS

* The requirements for this degree and certificate option have changed and are pending Chancellor's Office approval. Please see a Gavilan counselor or check the college website for current status. Refer to page 64.

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule" on page 41.

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.

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 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.
- ▶ design and present consumer products using 3D graphic models and multimedia applications (audio, video, graphics and text.)
- ▶ develop an electronic portfolio to present to potential clients/employers.



Computer Graphics for Environmental Design Option*

A.S. Degree or Certificate of Achievement

Digital artwork by Gavilan student.

To receive an ASSOCIATE’S DEGREE complete:

- ▶ **CORE COURSES** (listed on page 96).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.
- ▶ **GENERAL EDUCATION REQUIREMENTS** (Gavilan, IGETC or CSU pattern), plus sufficient electives to meet a 60 unit total. See pages 47-57.

To receive a CERTIFICATE OF ACHIEVEMENT complete:

- ▶ **CORE COURSES** (listed on page 96).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.

CORE COURSES:12 units

ADDITIONAL REQUIREMENTS:

CGD 30 Introduction to Environmental Design 3 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

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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 and/or other computer aided drafting software.

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule" on page 41.

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.



Digital design by DM
76 (Illustrator) student
Guiseppe Cantatorel

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 96).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.
- ▶ **GENERAL EDUCATION REQUIREMENTS** (Gavilan, IGETC or CSU pattern), plus sufficient electives to meet a 60 unit total. See pages 47-57.

To receive a CERTIFICATE OF ACHIEVEMENT complete:

- ▶ **CORE COURSES** (listed on page 96).
- ▶ **ADDITIONAL REQUIREMENTS** listed below.

CORE COURSES:12 units

ADDITIONAL REQUIREMENTS:

CGD 160 Technical Desktop Publishing/Graphics 3 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

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NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule" on page 41.

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.

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 career 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.