DDGT-121: DIGITAL DESIGN GRAPHICS TECHNOLOGY 2

Effective Term
Fall 2026

CC Approval
10/03/2025

AS Approval
10/09/2025

BOT Approval
10/16/2025

COCI Approval
12/15/2025

SECTION A - Course Data Elements

CB04 Credit Status
Credit - Degree Applicable

Discipline

Minimum Qualifications
Drafting/CADD (Computer Aided Drafting/Design) (Any Degree and Professional Experience)

Subject Code
DDGT - Digital Design Graphics Technology
Course Number
121

Department
Digital Design Graphics Technology

Division
Career Education and Workforce Development (CEWD)

Full Course Title
Digital Design Graphics Technology 2

Short Title
Digital Design Graphics Tech 2

CB03 TOP Code
0953.00 - *Drafting Technology

CIP Code
15.1301

CB08 Basic Skills Status
NBS - Not Basic Skills

CB09 SAM Code
C - Clearly Occupational

Rationale
CTE course review per Title V requirement.

SECTION B - Course Description

Catalog Course Description

The second of a four-course series in the Digital Design Graphics Technology A.S. Degree program. Advanced study in computer-aided drafting (CAD), three-dimensional parametric solid modeling, Boolean operations, CAD rendered images and drawings, advanced reverse engineering of parts, and the engineering document revision process using the latest release of the Autodesk AutoCAD and Inventor Professional software programs. Study of manufacturing materials and processes. Development of graphics and graphical manipulation for web and print using the latest release of Adobe Photoshop. Development and posting of web pages for communication of engineering documents on the department website using the latest release of Adobe Dreamweaver. Students will create their own logo/branding.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit

No

Repeatability

Not Repeatable

Grading Options

Letter Grade Only

Allow Audit

Yes

Requisites

Prerequisite(s)

Completion of DDGT-120 with a minimum grade of C.

Advisory Prerequisite(s)

Completion of TECH-107 with a minimum grade of C.

Requisite Justification

Requisite Description

Course in a Sequence

Subject

DDGT

Course #

120

Level of Scrutiny

Content Review

Upon entering this course, students should be able to:

Completion of DDGT-120 with a minimum grade of C.

SECTION D - Course Standards

Is this course variable unit?

No

Units

7.00

Lecture Hours

54.00

Lab Hours
216.00

Outside of Class Hours
108

Total Contact Hours
270

Total Student Hours
378

Distance Education Approval

Is this course offered through Distance Education?
Yes

Online Delivery Methods

DE Modalities	
Entirely Online	Permanent
Hybrid	Permanent
Online with Proctored Exams	Permanent

SECTION E - Course Content

Student Learning Outcomes

	Upon satisfactory completion of the course, students will be able to:
1.	Demonstrate proficiency with AutoCAD tools and commands to earn an Autodesk Certificate of Training.
2.	Demonstrate proficiency in creating and modifying digital graphics using Adobe Photoshop.
3.	Develop and maintain a functional portfolio website using Adobe Dreamweaver, applying industry-standard design and coding techniques.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1.	Effectively use CAD software in a two-dimensional and three-dimensional environment.
2.	Utilize parametric three-dimensional solid modeling software.
3.	Create and modify complex-shaped three-dimensional solid CAD models.
4.	Perform Boolean operations on solid models.
5.	Produce parametrically constrained assemblies.
6.	Render three-dimensional CAD models.
7.	Effectively apply manufacturing tolerances to detail drawings.
8.	Effectively apply various fit classifications to mating parts.
9.	Successfully add revision data to working drawings.
10.	Create working drawings from reverse engineering complex parts.
11.	Create assembly working drawings.
12.	Effectively use image editing software for the creation of professional level branding materials.
13.	Understand various image file types and how to use them.
14.	Understand the difference between raster and vector file types and how to use them.
15.	Create professional level graphics utilizing CAD software with Adobe software programs.
16.	Create and edit graphics for professional level printing.
17.	Create and edit graphics to utilize on the internet.
18.	Communicate and share engineering documents over internet websites.

19.	Create a static website utilizing HTML, CSS, and Library Items.
20.	Create, post, and maintain a professional level portfolio website over the internet.

Course Content

1. Fasteners
   a. ANSI and ISO Standards (English vs Metric)
   b. Terminology
   c. Threads
   d. Thread Series
   e. Classes of Fits
   f. Applications
   g. Symbology
   h. Callouts
   i. Working Drawing Representations
   j. Fastener Head Styles
   k. Bolt Forms
   l. Shoulders
   m. Point Styles
2. Fastener Types
   a. Bolts
   b. Studs
   c. Screws (Cap, Machine, Set, Tapping, Self-Tapping)
   d. Nuts
   e. Locknuts
   f. Inserts
   g. Retaining Rings
   h. Washers
   i. Pins
   j. Keys, Spines, Serrations
   k. Rivets
   l. Springs
   m. Sealing
   n. Welded Fasteners
3. Adhesives
   a. Advantages and Limitations
   b. Joint Design
4. Manufacturing Materials
   a. Ferrous Metals
   b. Types of Cast Iron
   c. Carbon Steels and Steel Classifications
   d. Steel Chemical Composition
   e. Steel Products and Shapes
   f. Nonferrous Metals
   g. Precious Metals
   h. Types of Plastics
   i. Advantages and Limitations of Plastics
   j. Types of Rubber
   k. Rubber Materials and Characteristics
   l. Assembly Methods of Rubber
   m. Rubber Design Considerations
5. Forming Process
   a. Types of Metal Castings
   b. Casting Techniques
   c. Design Considerations for Castings
   d. Working Drawing Casting Representations
   e. Forgings
   f. Dies

   g. Design Considerations for Forgings
   h. Drafting Terminology
   i. Powder Metallurgy
   j. Plastic Molded Parts
   k. Design Considerations for Plastic Molded Parts
   l. Assembly Methods
6. Inventor Fundamentals
   a. Introduction to Inventor
   b. User Interface
   c. Base Features
   d. Sketching Tools
   e. Advanced Sketch Editing Tools
   f. Secondary Features
   g. Creating Pick and Place Features
   h. Work Features
   i. Equations
   j. Additional Features
   k. Model and Display Manipulation
   l. Fixing Problems
   m. Sweep Features
   n. Loft Features
   o. Duplication Tools
   p. Feature Relationships
   q. Assembly Environment
   r. Joint Connections
   s. Manipulating Assembly Display
   t. Model Information
   u. Presentation Files
   v. Assembly Tools
   w. Assembly Parts and Features
   x. Assembly Bill of Materials
   y. Working With Projects
   z. Drawing Basics
   aa. Detailing Drawings
   bb. Drawing Annotations
7. Revision Data
   a. Description and Theory Revision
   b. Tables and Symbology
   c. Application
8. Reverse Engineering of Advanced Parts
9. Digital Graphics (Photoshop)
   a. Description and Terminology
   b. Raster and Vector File Types (Advantages, Limitations, and Uses)
   c. Non-Destructive Editing
   d. Resolution
   e. Color Modes (RGB, Grayscale, CMYK)
   f. Layer Management
   g. Adjustment Layers
   h. Masks
   i. Blending Modes
   j. Smart Objects and Filters
   k. Text and Vector Shapes
   l. Paths
   m. Actions
   n. Effectively use image editing software for the creation of professional level branding materials
   o. Create, Modify, and Output Digital Graphics for the Internet

p. Create, Modify, and Output Digital Graphics for Professional Level Printing
q. Create Vector Graphics in CAD software for use in Photoshop and Illustrator

10. Web-Design
    a. Theory
    b. Static Websites vs. Dynamic Websites
    c. Templates
    d. Hypertext Markup Language (HTML)
    e. Cascading Style Sheets (CSS) and Styles
    f. Library Items (Header, Navigation, Footer)
    g. Tables
    h. Creation (and Posting on Department Website) of a Portfolio Website
    i. Communicate and Share Engineering Documents on a Portfolio Website
    j. Uploading, Downloading, and Maintaining a Website
11. Branding
    a. Creation of a Logo
    b. Creation of a Business Card
    c. Creation of a Professional Level Resume
    d. Maintaining a Live Professional Level Website

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Critique	Students will create their own logo for branding across their business card, resume, working drawing title blocks, website, and video animations. Students will critique each other's logos over several reviews.
Lecture	Instructor lectures on assigned readings following industry standards and on Autodesk approved courseware.
Observation and Demonstration	Instructor provides computer demonstrations of best practices utilizing the class software for given assignments.
Other	Class lectures and demonstrations are recorded and posted online as a student resource.

Online Adaptation

Types	Examples of learning activities
Activity	Students complete advanced CAD modeling projects in Autodesk Inventor, Adobe Photoshop, and Dreamweaver, following step#by#step tutorials from Autodesk and Adobe approved courseware.
Discussion	Students participate in online forums sharing screenshots and annotated explanations of their digital graphics or web page designs, providing constructive peer feedback.
Lecture	Recorded demonstrations on integrating CAD renderings with Adobe Photoshop graphics and uploading them to a live website, with embedded comprehension checks.

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
Chat Rooms
Discussion Boards
E-mail Communication
Telephone Conversations
Video or Teleconferencing

Student-Initiated Online Contact Types

Chat Rooms
Discussions
Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Quizzes	Written exams and quizzes will be given to test student knowledge on software and technical skills. Exams and quizzes will contain short answer, multiple choice, and true and false.
Oral Presentations	Students may give presentations on the reading assignments to the class.
Class Participation	Students are required to submit reading participation assignments answering questions based on the reading prior to the lecture reviewing the material.
Work Assessments	Students may have lab time available during class to work on their homework.
Homework	Homework can be found on the assignment list handed out on the first day of class or on the department website. Homework assignments will be submitted one of the following ways: digitally, printed, or require a visual checkoff. Homework assignments will demonstrate the student's ability to successfully utilize the software and demonstrate the student's skill set.
Exams/Tests	Final Exam will be cumulative.

Assignments

Reading Assignments

There will be multiple reading assignments out of the class textbook. Topics may include fastening devices and methods, materials, and the forming process of metal castings.

Usage of Autodesk approved courseware is required under the terms of the Autodesk Training Center agreement. Reading assignments are contained in each individual section of the Autodesk approved courseware licensed from Ascent.

Writing Assignments

Students will be given multiple reading participation assignments for assigned chapters out of the class textbook or supplemental reading. Question types will vary but the answers will be available in the reading. Students are to submit their written assignments at the beginning of the class the day that chapter is reviewed.

Outside-of-Class Assignments

Students will create a series of drawing files for digital submission or for hard copy printed submission.

Critical thinking to solve drafting problems in CAD.

Students will create a working drawing based of an existing part in a process known as "reverse engineering."

Manipulation of digital graphics and creation of original digital artwork in preparation to showcase student work on their own portfolio websites.

Creation and posting of student portfolio website showcasing student branding and work. Emphasis on consistency and professionalism.

SECTION F - Textbooks and Instructional Materials

Material Type

Textbook

Author

Bertoline, G.,R., Wiebe, E.,N., Hartman, N.,W., Ross, W.,A.

Title

Technical Graphics Communication

Edition/Version

5th

Publisher

McGraw-Hill

Year

2022

ISBN #
9781260471496

Material Type
Other required materials/supplies

Description
Software #1:
Title: AutoCAD
Publisher: Autodesk
Edition: Latest
Software #2:
Title: Inventor
Publisher: Autodesk
Edition: Latest
Software #3:
Title: Photoshop
Publisher: Adobe
Edition: CS6 or higher
Software #4:
Title: Dreamweaver
Publisher: Adobe
Edition: CS6 or higher

Material Type
Other required materials/supplies

Description
1. 3" binder or two 1.5" binders.
2. USB Flash Drive
3. Headphones

SECTION G - Diversity, Equity and Inclusivity

How does your course and/or course outline of record reflect strategies for accommodating and engaging diverse student populations, advancing equitable outcomes, and fostering inclusion for all students?
This course is taught in a high-flex format, allowing students to participate in person, online, or through a combination of both, providing flexibility for diverse learning needs and personal circumstances. Multiple instructional methods, such as live demonstrations, recorded lectures, guided practice, and hands-on lab activities, ensure accessibility for varied learning styles and abilities. Students create digital graphics, branding assets, and professional portfolio websites, fostering digital literacy and employability across diverse industries.

Course Codes (Admin Only)

CB00 State ID
CCC000213367

CB10 Cooperative Work Experience Status
N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status
Y - Credit Course

CB13 Special Class Status
N - The Course is Not an Approved Special Class

CB23 Funding Agency Category
Y - Not Applicable (Funding Not Used)

CB24 Program Course Status
Program Applicable

Allow Pass/No Pass
Yes

Only Pass/No Pass
No