DDGT-230: DIGITAL ARCHITECTURAL DRAFTING & DESIGN 1

Effective Term
Fall 2026

CC Approval
10/03/2025

AS Approval
10/09/2025

BOT Approval
10/13/2025

COCI Approval
12/15/2025

SECTION A - Course Data Elements

CB04 Credit Status
Credit - Degree Applicable

Discipline

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

Subject Code
DDGT - Digital Design Graphics Technology
Course Number
230

Department
Digital Design Graphics Technology

Division
Career Education and Workforce Development (CEWD)

Full Course Title
Digital Architectural Drafting & Design 1

Short Title
Digi Arch Drafting & Design 1

CB03 TOP Code
0953.00 - *Drafting Technology

CIP Code
15.0301

CB08 Basic Skills Status
NBS - Not Basic Skills

CB09 SAM Code
C - Clearly Occupational

Rationale
CTE course review per Title V requirement. Also, updated SLO to match the other courses

SECTION B - Course Description

Catalog Course Description

The first of a two course series in Digital Architectural Drafting and Design. This course enables the student to learn and apply fundamental skills towards the creation of graphical architectural documents per current industry standards using Building Information Modeling (BIM). This class focuses on, but is not limited to, residential design. Topics include building codes, symbology, floor plans, sectional views, interior/exterior elevations, and 3D rendering as relates to residential architecture and design using the latest release of the Autodesk Revit software.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit

No

Repeatability

Not Repeatable

Grading Options

Letter Grade or Pass/No Pass

Allow Audit

Yes

Requisites

Advisory Prerequisite(s)

Completion of DDGT-121 and TECH-107 with a minimum grade of C.

SECTION D - Course Standards

Is this course variable unit?

No

Units

5.00000

Lecture Hours

54.00

Lab Hours

108.00

Outside of Class Hours

108

Total Contact Hours

162

Total Student Hours

270

Distance Education Approval

Is this course offered through Distance Education?

Yes

Online Delivery Methods

DE Modalities	Permanent or Emergency Only?
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.	Create construction documents for residential design projects using Autodesk Revit Architecture, demonstrating technical proficiency with the latest software release.
3.	Interpret and apply industry standard technological terms, symbols, and the standard views used to describe residential building design.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1.	Develop a schematic design for a residential structure.
2.	Create and use a building program.
3.	Develop a site plan.
4.	Evaluate a building site for zoning code compliance and appropriate building location.
5.	Interpret and apply applicable building codes.
6.	Apply various methods and materials of residential construction.
7.	Create Building Information Models (BIM).
8.	Manage model views to generate construction documents. (Floor plans, elevations, site plans, roof plans, building sections, wall sections, reflected ceiling plans, interior elevations, and details).
9.	Design stairs and railings.
10.	Develop door and window schedules.
11.	Interpret and apply architectural symbols.
12.	Produce 3D renderings.

Course Content

1. Design and Industry Standards
   a. Value and purpose of creating a design study.
   b. Building programming, determining client values, and setting project goals
   c. Building code and zoning requirements
   d. Site analysis and diagramming
   e. Materials and methods of commercial construction
   f. Floor plan design
   g. Elevation design
   h. Use and application of architectural symbology
   i. Vertical circulation methods and design
   j. Traffic patterns and space requirements
   k. Floor plan arrangements based on design study
2. Fundamental use of Building Information Modeling (BIM)
   a. Introduction to BIM
   b. Basic sketching and modification tools
   c. Linework and modification tools
   d. Drawing 2D architectural objects
   e. Projects
   f. Modeling walls, curtain walls, doors, and windows
   g. Modeling floors, ceilings, and roofs
   h. Modeling stairs, railings, and ramps
   i. Fireplaces
   j. Working with views
   k. Floor systems and reflected ceiling plans
   l. Elevations
   m. Sections
   n. Interior Design
   o. Adding components

p. Creating construction documents
q. Annotating construction documents
r. Adding tags and schedules
s. Creating details
t. Schedules
u. Site tools and photo-realistic rendering
v. Printing
w. Introduction to phasing and worksharing

3. Construction Documentation
   a. Scheduling and product selection
   b. Interpreting written specifications
   c. Dimensioning and notation
   d. Construction detailing
   e. Creation and modification of technical drawings (floor plans, elevations, sections, details, etc.)
   f. Use and application of architectural graphics, scales, symbols, and dimensioning.
   g. Materials and methods of residential construction

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Activity	Use of Autodesk Revit tools to create parametric building components and generate schedules.
Lecture	Instructor-led presentations on architectural design principles, building codes, and BIM workflows using Autodesk Revit.
Lab	Hands on lab assignments, projects, and readings from textbook.

Online Adaptation

Types	Examples of learning activities
Activity	Students complete step-by-step residential design projects in Autodesk Revit, following Autodesk approved courseware.
Discussion	Students post screenshots of their evolving designs (floor plans, elevations, 3D views) to online forums, providing and receiving peer feedback on functionality and aesthetics
Lecture	Recorded software demonstrations showing advanced BIM features like custom family creation, rendering, and phasing, with embedded quizzes to check comprehension.

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	Quizzes to assess understanding of Autodesk Revit tools, BIM workflows, and architectural terminology.
Projects	Projects will be evaluated on accuracy, adherence to building codes, organization of the Revit model, and application of design principles.
Exams/Tests	Combination of practical Revit tasks and written questions covering course concepts

Assignments

Reading Assignments

Assigned chapters from *Residential Design Using Autodesk Revit* and Autodesk approved courseware.

Topics include BIM fundamentals, residential building codes, site analysis, floor plan development, elevations, sections, schedules, and rendering.

Students are expected to complete readings prior to related lectures and labs, and be prepared to discuss and apply concepts in class or online.

Writing Assignments

Students will prepare a professional narrative to accompany their BIM project. The narrative will identify the client's design requirements, explain how the design meets applicable zoning regulations and building codes, describe material selections and spatial organization, address sustainability considerations, and reflect on design challenges and solutions. The document will include labeled screenshots from the Revit model to support the explanations.

Outside-of-Class Assignments

Creation of a complete residential BIM project from schematic design to construction documentation, including site plan, floor plans, elevations, sections, schedules, and 3D renderings.

Application of residential building codes and zoning regulations within the BIM environment.

Development of a custom Revit family or component relevant to the residential project.

SECTION F - Textbooks and Instructional Materials

Material Type

Textbook

Author

Daniel John Stine

Title

Residential Design Using Autodesk Revit

Edition/Version

Latest

Publisher

SDC Publications

Rationale

This is a yearly publication that updates every year.

ISBN #

9781630576592

Material Type

Other required materials/supplies

Description

Software #1:

Title: Revit Architecture
Publisher: Autodesk
Edition: Latest

Material Type
Other required materials/supplies

Description
ASCENT - Revit Fundamentals (To be supplied by instructor with purchase of lab materials fee.)

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 gain experience with Building Information Modeling (BIM) using Autodesk Revit, applying industry standards to residential design projects that reflect diverse architectural contexts.

Course Codes (Admin Only)

CB00 State ID
CCC000322904

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