DDGT-231: DIGITAL ARCHITECTURAL DRAFTING & DESIGN 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	And/Or
Drafting/CADD (Computer Aided Drafting/Design) (Any Degree and Professional Experience)	

Subject Code
DDGT - Digital Design Graphics Technology
Course Number
231

Department
Digital Design Graphics Technology

Division
Career Education and Workforce Development (CEWD)

Full Course Title
Digital Architectural Drafting & Design 2

Short Title
Digi Arch Drafting & Design 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. Also, updated SLO to match the other courses.

SECTION B - Course Description

Catalog Course Description

The second of a two-course series in Digital Architectural Drafting and Design. This course enables the student to learn and apply advanced 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, commercial design. Topics include advanced study of digital graphic representations used by the architectural field, building codes, symbology, floor plans, sectional views, interior/exterior elevations, and 3D rendering as it relates to commercial 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

Prerequisite(s)

Completion of DDGT-230 with a minimum grade of C.

Requisite Justification

Requisite Description

Course in a Sequence

Subject

DDGT

Course #

230

Level of Scrutiny

Content Review

Upon entering this course, students should be able to:

Completion of DDGT-230 with a minimum grade of C.

SECTION D - Course Standards

Is this course variable unit?

No

Units

5.00

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.	Implement advanced technical skills in the creation of construction documents utilizing the latest release of the Autodesk Revit Architecture software as pertains to commercial design.
3.	Understand and apply industry standard technological terms, symbols, and the standard views used to describe commercial building design.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1.	Develop a schematic design for a commercial structure.
2.	Create and use an advanced building program.
3.	Analyze and diagram site conditions.
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 commercial construction.
7.	Understand strategies for sustainable design including energy efficiency, water efficiency, indoor environmental health, and resource efficiency.
8.	Interpret and apply accessibility requirements for ADA compliance.
9.	Apply fundamental principles of fire rated construction.
10.	Create advanced Building Information Models (BIM).
11.	Manage model views to generate advanced construction document (floor plans, elevations, site plans, roof plans, building sections, wall sections, reflected ceiling plans, interior elevations, and details).
12.	Design advanced ramps, stairs, and railings.
13.	Develop door, window, and material schedules.
14.	Edit and create custom parametric BIM families.
15.	Create and utilize conceptual and massing model studies.
16.	Create and modify custom project and family templates.
17.	Produce advanced 3D renderings.

Course Content

1. Design and Industry Standards
   a. Fundamentals of sustainable design
   b. Building programming, determining client values, and setting project goals
   c. Building code and zoning requirements
   d. ADA (Americans with Disabilities Act of 1990) and other accessibility requirements

   e. Fire rated construction requirements
   f. Site analysis and diagramming
   g. Materials and methods of commercial construction
   h. Floor plan design
   i. Elevation design
   j. Use and application of architectural symbology
   k. Vertical circulation methods and design
2. Advanced use of Building Information Modeling (BIM)
   a. Small office (walls, grids, dimensions, door, windows, annotations and dimensions, exterior walls, interior walls, elevators)
   b. Stairs and railings
   c. Ramps and sloped floors
   d. Roofs and skylights
   e. Floor systems and reflected ceiling plans
   f. Interior and exterior elevations
   g. Annotations
   h. Sections and details
   i. Interior design
   j. Schedules
   k. Site and rendering
   l. Printing
   m. Manipulation of toposurfaces
   n. Creating custom templates
   o. Creating schedules
   p. Custom system families
   q. Component family concepts
   r. Advanced family techniques
   s. Additional family types
   t. Creating architectural specific families
   u. Creating MEP (Mechanical Electrical and Plumbing) specific families
   v. Creating structural specific families
   w. Massing studies
   x. Space planning & area analysis
   y. Visualization
   z. 3D Rendering
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 commercial construction

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Activity	Hands-on creation of advanced commercial BIM projects from schematic design through detailed construction documents.
Lecture	Step-by-step Autodesk Revit demonstrations showing advanced BIM workflows such as custom family creation, massing studies, and complex construction documentation.
Observation and Demonstration	Live modeling of advanced Revit solutions, such as complex stair and railing systems, custom parametric components, and site design.

Online Adaptation

Types	Examples of learning activities
Activity	Students complete step-by-step advanced commercial design projects in Autodesk Revit, following Autodesk approved courseware.
Discussion	Students share annotated screenshots of their commercial project's progress (plans, elevations, 3D views) and give peer feedback on compliance and design solutions.
Lecture	Recorded demonstrations of advanced BIM features such as custom family creation, complex phasing, and massing studies, with embedded knowledge 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	Quizzes to assess knowledge of advanced BIM tools, commercial building codes, ADA compliance requirements, and sustainable design strategies.
Projects	Completion of a comprehensive commercial BIM project from schematic design to detailed construction documents, including site plans, floor plans, elevations, sections, schedules, and 3D renderings.
Homework	Assignments from Autodesk approved courseware, including exercises in custom family creation, massing studies, and advanced documentation techniques.
Exams/Tests	Comprehensive project and/or practical assessment demonstrating advanced commercial design and documentation skills.

Assignments

Reading Assignments

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

Topics include advanced BIM modeling, commercial building codes, ADA compliance, sustainable design, custom family creation, massing studies, and advanced rendering techniques.

Students are expected to complete readings before lectures and labs and be prepared to apply concepts in their projects.

Writing Assignments

Commercial Design Project Report: Design a professional narrative accompanying the final BIM project. The report will explain how the design meets applicable commercial codes, ADA accessibility requirements, and sustainable design goals. It will also discuss key design decisions, technical challenges, and the solutions implemented. Labeled images and views from the BIM model will support the narrative.

Outside-of-Class Assignments

Creation of working drawings.

Creation of a 3D digital architectural commercial model.

SECTION F - Textbooks and Instructional Materials

Material Type
Textbook

Author
Daniel John Stine

Title
Commercial Design Using Autodesk Revit

Edition/Version
Latest

Publisher
SDC Publications

Year

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
1. ASCENT - Revit BIM Management: Template and Family Creation (To be supplied by instructor with purchase of lab materials fee.)
2. ASCENT - Revit Architecture: Conceptual Design & Visualization (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 Hy-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 expand their BIM skills with commercial design projects, integrating accessibility standards, sustainable design practices, and global building codes.

Course Codes (Admin Only)

CB00 State ID
CCC000604147

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