



DDGT 230 - Digital Architectural Drafting & Design 1 Course Outline

Approval Date: 03/14/2019

Effective Date: 08/12/2019

SECTION A

Unique ID Number CCC000322904

Discipline(s) Drafting

Division Career Education and Workforce Development

Subject Area Digital Design Graphics Technology

Subject Code DDGT

Course Number 230

Course Title Digital Architectural Drafting & Design 1

TOP Code/SAM Code 0953.00 - Drafting and Design Technology/Technician, General* / C - Occupational

Rationale for adding this course to the curriculum This update is tying in with the creation of a one year Architectural Drafting and Design Certificate of Achievement. Course content updates.

Units 5

Cross List N/A

Typical Course Weeks 18

Total Instructional Hours

Contact Hours

Lecture 54.00

Lab 108.00

Activity 0.00

Work Experience 0.00

Outside of Class Hours 108.00

Total Contact Hours 162

Total Student Hours 270

Open Entry/Open Exit No

Maximum Enrollment 15

Grading Option Letter Grade or P/NP

**Distance Education Mode
of Instruction** On-Campus

SECTION B

General Education Information:

SECTION C

Course Description

Repeatability May be repeated 0 times

Catalog The first of a two course series in Digital Architectural Drafting and Design.

Description 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.

Schedule Description

SECTION D

Condition on Enrollment

1a. Prerequisite(s): *None*

1b. Corequisite(s): *None*

1c. Recommended

- DDGT 121
- TECH 107

1d. Limitation on Enrollment: *None*

SECTION E

Course Outline Information

1. Student Learning Outcomes:

- A. Autodesk Certification.
- B. Ability to implement technical skills in the creation of construction documents utilizing the latest release of the Autodesk Revit Architecture software as pertains to residential design.
- C. Ability to understand and apply industry standard technological terms, symbols, and the standard views used to describe residential building design.

2. Course Objectives: Upon completion of this course, the student will be able to:

- A. Develop a schematic design for a residential structure.
- B. Create and use a building program.
- C. Develop a site plan.
- D. Evaluate a building site for zoning code compliance and appropriate building location.
- E. Interpret and apply applicable building codes.
- F. Apply various methods and materials of residential construction.
- G. Create Building Information Models (BIM).
- H. 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.)
- I. Design stairs and railings.

- J. Develop door and window schedules.
- K. Interpret and apply architectural symbols.
- L. Produce 3D renderings.
- M.

3. Course Content

- A. 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
- B. 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
- C. 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
- h.

4. Methods of Instruction:

Activity:

Lecture:

Projects:

Other: Hands on lab assignments, projects, and readings from textbook.

5. Methods of Evaluation: Describe the general types of evaluations for this course and provide at least two, specific examples.

Typical classroom assessment techniques

Quizzes --

Projects -- Drawings

Home Work --

Final Exam --

Mid Term --

Additional assessment information:

Evaluation of drawing assignments

One midterm examination and final examination.

Letter Grade or P/NP

6. Assignments: State the general types of assignments for this course under the following categories and provide at least two specific examples for each section.

A. Reading Assignments

Assigned readings from textbook and courseware.

B. Writing Assignments

C. Other Assignments

Creation of working drawings.

Creation of a 3D digital architectural residential model.

7. Required Materials

A. EXAMPLES of typical college-level textbooks (for degree-applicable courses) or other print materials.

Book #1:

Author: Daniel John Stine

Title: Residential Design Using Autodesk Revit

Publisher: SDC Publications

Date of Publication: 2018

Edition: Latest

Book #2:

Author: Francis D.K. Ching

Title: Building Construction Illustrated

Publisher: Wiley

Date of Publication: 2014

Edition: 5th

Software #1:

Title: Revit Architecture

Publisher: Autodesk

Edition: Latest

B. Other required materials/supplies.

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