

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Design & Drafting Technology Program
Revision Date: August 23, 2021

I. CATALOG DESCRIPTION

Course Number: DDRT1400
Course Title: Virtual Building Design with Revit Architecture
Prerequisite(s): DDRT1170
Catalog Description: Using Revit Building software to create Building Information Models and using tools to form parametric building design and documentation.
Credit Hours: 3
Class Hours: 30
Lab Hours: 45
Total Contact Hours: 75

II. COURSE OBJECTIVES: *Course will:*

- A. Describe building information modeling, bidirectional associativity, and parametric relationships in Revit.
- B. Describe the user interface and explain parametric objects and families.
- C. Demonstrate the creation and modification of walls, compound walls, foundation walls, and footings.
- D. Demonstrate the insertion and modification of doors, windows and general building components.
- E. Demonstrate the use of grids and levels.
- F. Describe the manner in which dimensions are generated and modified.
- G. Describe the manner in which annotation families are generated and modified.
- H. Demonstrate the creation of different views.
- I. Demonstrate the organization of information in sheets for presentation.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Add and modify walls, compound walls, foundation walls and footings.
 - 2. Add and modify doors, windows and general building components.
 - 3. Create a basic floor plan and work with levels and grids.
 - 4. Create stairs and railings in a building model.
 - 5. Use editing commands.
 - 6. Place interior and exterior dimensions on a floor plan.
 - 7. Create text and annotations including door, window and room tags.
 - 8. Create schedules, legends, and keynotes including door, window and room finish schedules.
 - 9. Create floors and ceilings, and roofs.
 - 10. Create elevation, section, and 3D views.
 - 11. Manage and control object visibility in views.
 - 12. Create callout views, detail views, and drafting views.
 - 13. Present the building model using drawing sheets.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
 - Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

- A.** Introduction – Building Information Modeling
- B.** Revit Architectural Basics
- C.** Walls, Doors, Windows and Building Components
- D.** Dimensions and Annotations
- E.** Stairs, Floors, Ceilings, and Roof Components
- F.** Detailing and Drafting
- G.** Construction Documentation

V. INSTRUCTIONAL MATERIALS

- A.** Required Text(s): Stine, *Residential Design Using Autodesk Revit 2017* (Refer to CID and/or instructor for current edition)

VI. METHODS OF PRESENTATION/INSTRUCTION

- A.** Methods of presentation typically include a combination of the following:
 - 1.** Lectures
 - 2.** Classroom demonstrations
 - 3.** Classroom discussions
 - 4.** Hands-on lab projects
 - 5.** Lab demonstrations
 - 6.** Lab assistance
 - 7.** Instructional handouts
 - 8.** Video presentations
 - 9.** Power Point presentations
 - 10.** Speaker(s)

VII. METHODS OF EVALUATION

- A.** Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1.** Drafting – 50%
 - a.** A grade will be assigned to plans submitted at each checkpoint
 - 1.** Floor Plans
 - 2.** Elevations
 - 3.** Sections & Details
 - 4.** Construction Documents
 - 5.** Specification
 - b.** A quality grade will evaluate
 - 1.** Neatness, accuracy, and submittal according to deadlines
 - 2.** Adherence to drafting, lettering and line weight standards
 - 3.** Contribution to class objectives
 - 4.** Drawings complete according to instruction
 - c.** Evaluation will be based on the number of points earned from the total points possible
 - 2.** Tests – 30%
 - a.** Tests covering the content of the course will be given
 - b.** Evaluation will be based on the number of points earned from the total points possible.
 - 3.** Quizzes & Homework – 20%
 - a.** Each unit of study will have homework assignments, quizzes and activities

- b.** Average will be determined by the total points earned out of the total points possible

VIII. SPECIFIC COURSE REQUIREMENTS

- A.** Student must meet all of the following to receive a passing grade:
 - 1.** Achieve a passing grade of 60% or higher, based on SCC grading scale.
 - 2.** Submit own work. Students turning in information or homework completed by someone other than themselves will receive a grade of 0% and will be referred to the Dean of Students for further disciplinary action.
 - 3.** Attend every class period. Attendance will be taken in every class or lab. It is the responsibility of the student to master the information covered in any missed classes. Students participating in a college-recognized activity will not be considered absent.
 - 4.** Demonstrate the attitude, skill, and character commensurate with industry standards.
 - 5.** Respect college property. Any intentional damage to college property will not be tolerated and may result in punitive action.