

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Design & Drafting Technology Program
Revision Date: August 22, 2022

I. CATALOG DESCRIPTION

Course Number: DDRT2140
Course Title: Building Utility Design
Prerequisite(s): DDRT1400
Catalog Description: Electrical, plumbing, mechanical systems, code requirements, calculation methods, related design techniques, symbols, and preparation of working drawings using Revit MEP.

Credit Hours: 2
Class Hours: 15
Lab Hours: 45
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will:*

- A. Utilize Revit MEP to aid in the design of various utility systems for commercial buildings.
- B. Cover utility system design and layout.
- C. Develop utility systems for classroom projects.
- D. Create layouts for commercial projects ranging in various sizes and styles.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Set up and start projects.
 - 2. Work with component families.
 - 3. Understand, create, and manage views and view properties for a building project.
 - 4. Control the placement of model objects with dimensions and constraints.
 - 5. Complete a building design by working with plumbing, electrical, HVAC, and more.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 1: Collect, identify, interpret and analyze data.

IV. CONTENT/TOPICAL OUTLINE

- A. Chapter 1: Introduction to Revit MEP
- B. Chapter 2: Basic Sketching and Modify Tools
- C. Chapter 3: Starting Systems Projects
- D. Chapter 4: Working with Views
- E. Chapter 5: Setting up Spaces
- F. Chapter 6: Heating and Cooling Loads Analysis
- G. Chapter 7: Basic System Tools
- H. Chapter 8: HVAC Networks
- I. Chapter 9: Plumbing Networks
- J. Chapter 10: Advanced Systems for HVAC and Plumbing
- K. Chapter 11: Electrical Systems
- L. Chapter 12: Creating Construction Documents
- M. Project 1 – Residential Project

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): Ascent, *Autodesk Revit Fundamentals for MEP: Fundamentals, Student Guide, Imperial*, (Refer to CID and/or instructor for current edition)
- B. Other Resources: Revit MEP software program

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 - 1. Lectures
 - 2. Classroom discussions
 - 3. Videos
 - 4. Lab assistance

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1. Attendance and participation
 - 2. Daily assignments
 - 3. Written exams and/or quizzes
 - 4. Performance and observational assessment

VIII. SPECIFIC COURSE REQUIREMENTS

- A. Student must meet all of the following to receive a passing grade:
 - 1. Achieve a passing grade of “D” (60%) or higher, based on SCC grading scale.
 - 2. Submit own work. Students turning in homework, reports, field notes, or calculations by someone other than themselves will receive 0% and be referred to the Division Dean and Dean of Students for further disciplinary action. Consequences can include failing the course.