CIVE 305 Syllabus FA 2015

Course Description

CIVE 305 is divided into three segments: AutoCAD (ACAD), AutoCAD Civil3D, and Revit 2015. The first segment covers development of intermediate AutoCAD skills. Exercises include using AutoCAD to create a simple Floor Plan and Site Plan. AutoCAD Civil 3D is covered in the segment to provide the student with computer-aided design experience that is specific to Civil Engineering professional practice. Topics include development of Road Alignments and Profiles, Road Corridors, Grading, Pipe Networks, and Quantity Take-Off Sections. Revit is covered in the third and final segment of the course. Revit has advanced design and analysis capabilities that are used for Residential and Commercial projects, and Infrastructure projects. Building Information Modeling (BIM), design of Mechanical, Electrical, and Plumbing (MEP) systems, and Rendering are also covered using Revit.

AutoCAD 2015

Class #1, M 8/24 – Course Overview, AutoCAD Fundamentals, Title Block Template
   HW ACAD 1 – 2D Drafting and Title Block, Due 8/31
Class #2, W 8/26 – Geometric Construction, Annotations, Surface Area, Hatch Patterns
   HW ACAD 2 – Polygons Inscribed and Circumscribed About a Circle, Due 9/2
   HW ACAD 3 – Computing Surface Area, Due 9/9
Class #3, M 8/31 – Orthogonal Views, Dimensioning and Dimension Styles
   HW ACAD 4 – Earth Dam Components, Due 9/9
Class #4, W 9/2 – Model Viewports, Isometric Views, Site Plan
   HW ACAD 5 – Isometric Views, Due 9/9
   HW ACAD 6 – Site Plan, Due 9/9
Labor Day Holiday, 9/7
Class #5, W 9/9 – Floor Plans, Annotative Scaling, xrefs, Elevation Views
   HW ACAD 7 – Floor Plan, Due 9/16
   HW ACAD 8 – Elevation Views, Due 9/16
Class #6, M 9/14 – Section Views, Auxiliary Views, Assemblies
   HW ACAD 9 – Section Views, Due 9/21
HW ACAD 10 – Auxiliary Views, Due 9/21
HW ACAD 11 – Assemblies, Due 9/21

Class #7, W 9/16 – Workspaces, CUIX, 3D Solid Modeling
HW ACAD 12 – 3D Solids, Due 9/23
HW ACAD 13 – 3D Surfaces, Due 9/23
HW ACAD 14 – Converting 2D to 3D Objects, Due 9/23

Class #8, M 9/21 – Rendering
HW ACAD 15 – Rendering, Due 9/28

Class #9, W 9/23 – Exam #1 - AutoCAD 2015

**AutoCAD Civil 3D 2015**

Class #10, M 9/28 – Introduction to Civil 3D, Points, Styles, Contour Maps
HW CIVIL 3D 1 – Manual Point Creation and Point Styles, Due 10/5
HW CIVIL 3D 2 – Surface Contour Map, Due 10/5

Class #11, W 9/30 – Parcels, Survey Database, Importing Field Book Data
HW CIVIL 3D 3 – Parcel Subdivision, Due 10/7
HW CIVIL 3D 4 – Creating a Survey Database, Due 10/7

Class #12, M 10/5 – Surfaces, Breaklines, Volume Calculations, Slope Analysis
HW CIVIL 3D 5 – TIN Surfaces and Breaklines, Due 10/12

Class #13, W 10/7 – Alignments, Profiles, AutoDesk Vault
HW CIVIL 3D 6 – Road Alignment and Profile, Due 10/14

Class #14, M 10/12 – Corridors, Plotting, Creating Match Lines, Design Transmittals
HW CIVIL 3D 7 – Corridor Design, Due 10/19

Class #15, W 10/14 – Grading, Cut and Fill
HW CIVIL 3D 8 - Grading, Cut and Fill, Due 10/21

Class #16, M 10/19 – Pipe Networks, Storm and Sanitary Sewer Analysis

HW CIVIL 3D 9 – Pipe Network and Sanitary Sewer Design, Due 10/26

Class #17, W 10/21 – Storm and Sanitary Sewer Analysis

HW CIVIL 3D 10 – Storm and Sanitary Sewer Design, Due 10/28

Class #18, M 10/26 – Storm Runoff and Retention Pond Design

HW CIVIL 3D 11 – Storm Runoff and Retention Pond Design, Due 11/2

Class #19, W 10/28 – Exam #2 – AutoCAD Civil 3D

Revit 2015

Class #20, M 11/2 – Introduction to Revit, Floor Plan

HW REVIT 1 - Floor Plan, Due 11/9

Class #21, W 11/4 – Plan and Elevation Views

HW REVIT 2 – Plan and Elevation Views, Due 11/11

Class #22, M 11/9 – Section Views, Floors, Ceilings, Curtain Walls

HW REVIT 3 – Section Views, Floors, Ceiling Views, Due 11/16

HW REVIT 4 – Curtain Walls, Due 11/16

Class #23, W 11/11 – Roofs, Stairways, Foundations, Creating Topography, Phasing, Revit

HW REVIT 5 – Roofs, Stairways and Foundations, Due 11/18

HW REVIT 6 – Creating Topography, Due 11/18

HW REVIT 7 – Construction Project Phasing, Due 11/18

Class #24, M 11/16 – Rendering, Walkthroughs

HW REVIT 8 - Rendering, Due 11/30

Class #25, W 11/18 – MEP, Energy Usage Analysis

HW REVIT 9 - Mechanical, Electrical, and Plumbing System Design, Due 11/30
HW REVIT 10 – Building Energy Usage Analysis, Due 11/30

Fall Recess – 11/21-29

Class #26, M 11/30 – Concrete and Steel Families

HW REVIT 11 – Concrete and Steel Design, Due 12/7

Class #27, W 12/2 – – Exam #3 – Revit

Class #28, M 12/7 – BIM, Templates, Creating Families (BIM Objects)

HW REVIT 12 – Building Information Modeling (BIM), Due 12/14

Class #29, W 12/9 – BIM, Schedules, Take-Offs

Classes End – Friday, 12/11

Finals M – F, 12/14-18

Final Exam, 12/14