

**Course Name: RWB 1500
(BIM/Revit)**



**Building Information Modeling
Syllabus – 2019/2020**

RESILIENCY AT WORK 2.0®

www.rw2.education

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Session Schedule:

Morning: Tuesday, Wednesday, Thursday – 9am – 12:45pm, OR

Evening: Tuesday, Wednesday, Thursday – 6pm – 9:45pm

Saturdays: 1st and 3rd, 9am-12noon

Program Catalog: <https://www.clec-education.com/resources/>

Prerequisite: Participants should be familiar with the Microsoft operating system, and have the ability to use a keyboard and a mouse.

Prerequisite: CAD 1401 is required.

Drop/Withdraw Period: The first two (2) weeks of the program is the drop period. Any decision to discontinue the program after week two is considered the withdraw period and no refunds are given.

Participants must notify the instructor in advance of any absence or attendance matters.

Required Books:

Eric Wing (2017). Autodesk Revit 2017 for Architecture: John Wiley & Sons, Inc., Indianapolis, Indiana.

Software: Revit Architecture 2017, 2019, AutoCAD 2017, 2019

Reference Books:

Commercial Design Using Autodesk Revit Architecture 2017 by Daniel John Stine.

Residential Design Using Autodesk Revit Architecture 2017 by Daniel John Stine.

Course Description:

This course includes architectural planning and design in line with Building Information Management (BIM) techniques. Fundamental design methods and practices for the creation of architectural drawings are taught. Topics involve the development of floor plans, elevations, sections of building projects including Scope Boxes. Course also covers the requirements of Autodesk Certification Test.

COURSE SUMMARY:

This course examines architectural planning and design utilizing Building Information Modeling (BIM) techniques. Fundamental design methods and practices for the creation of Architectural drawings are introduced, with emphasis on the content of the drawings and the production skills. Topics include the development of floor plans, elevations and sections of building projects. This course also develops knowledge and skills to take Autodesk Certification Test.

INSTRUCTION AREAS:

1. BIM Revit Interfaces and File Types
2. Drafting Requirements
3. Computer-Aided Drafting (CAD)
4. Construction Methods and Materials
5. Building Codes
6. Modeling Basics
7. Modifying Elements
8. Extended Modeling
9. Setting Up Views
10. Floor Plans and Structural items
11. Architectural Details
12. Schedules
13. Printing Documents for clients
14. Preparation for Autodesk Certification Test

COURSE LEARNING OBJECTIVES

By the end of this course, you should be able to:

1. Explain BIM and its approach to the design, analysis, and documentation of buildings.
2. Compare and contrast BIM and traditional drafting and design techniques.
3. Communicate general design ideas and concepts through specific working drawings.
4. Apply local zoning ordinances and building codes to an architectural project.
5. Create, explain, and complete a set of working drawings for an architectural project.
6. Solve a design problem through the creation of a Building Information Model in Revit Architecture.
7. Work on the requirements of Autodesk Certification Test

Other Required Resources:

- Computer running Windows 7 or above with Internet connection (Provided by program, unless otherwise noted.)
- AutoCAD 2017, (Participant not required to purchase.)
- USB Memory Flash Drive/Thumb Drive – 64 GB or more
- Three-ring binder to organize notes, hand-outs, assignments, etc., paper, pencil, pen

COURSE OUTLINE

Unit 1

Eric Wing

Chapter 1:

Autodesk Revit World:

Revit Interface, Project Browser, File Types & Families

Unit 2

Eric Wing

Chapter 2:

Creating a Model:

Placing Wall, Using Reference Planes, Interior Walls, Placing Doors & windows

Unit 3

Eric Wing

Chapter 3:

Creating Views:

Creating levels, Creating Building Sections, Creating Detail Sections, Creating Callouts, Creating Elevation

Unit 4

Eric Wing

Chapter 4:

Working with Autodesk Revit Tools:

Basic Edit Commands, Array Command, Mirror Command, Align Tool, Split & Trim Command, Copy, Paste, Creating Plans.

Week 5

Eric Wing

Chapter 5:

Dimensioning & Annotating:

Selecting and Applying Dimensioning, Placing texts and Annotation

Unit 6

Eric wing

Chapter 6:

Floors:

Placing Floor Slabs, Splitting Floor materials, pitching the Floor to a Floor drain, Creating Shaft Opening

Unit 7

Eric wing

Chapter 7

Roofs:

Placing Roof by Footprint, Creating a Sloping Roof, Creating Roofs by extrusion, Adding Roof Dormer

Unit 8

Eric Wing

Chapter 8:

Structural Items:

Placing Grids, Adding Structural Columns, Adding Structural Footing & Slabs, Adding Piers & Spread Footings

Unit 9

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Chapter 9:

Ceilings & Interiors:

Creating Ceilings, Adding Interior Designs, Alternate Floor Materials

Unit 10

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Chapter 10:

Stairs, Ramps, and Railings:

Creating Stairs, Railings, Custom Stairs, and Railing Families

Unit 11

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Chapter 11:

Detailing:

Adding details, Notes, Drafting Views

Unit 12

Eric Wing

Chapter 12:

Creating Specific Views and Match Lines:

Duplicating Views, Dependent Views. Adding Match Lines,

Unit 13

Eric Wing

Chapter 13:

Creating Sheets and Printing:

Creating and Populating Sheets, Sheet Organization, Viewport Properties, Addition of Revision to a sheet, Project Parameters, Cover Sheet

Chapter 14:

Creating Rooms & Area Plans:

Creating Rooms, Adding Room Schedule, Color-Fill Plans, Room Separators, Area Plan

Unit 14

Eric wing

Final Exam

Graduation!

Evaluation and Grading

Evaluation Criteria

The graded assignments will be evaluated using the following weighted categories:

Category	Weight
Assignment	15%
Lab	20%
Project	15%
Quiz	10%
Exam	20%
Attendance & Timeliness	20%
TOTAL	100%

Grade Conversion

The final grades will be calculated from the percentages earned in the course, as follows:

Grade	Percentage	Credit
A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0

Attendance: Attendance is evaluated on a session-by-session basis. It is important that participants attend every session, lab, presentation, and field trips when provided.

Participants may be subject to being dropped or withdrawn for missing three (3) consecutive sessions or a total of six sessions. (See RW2 Catalog for more details.) Coming to sessions late or leaving early is counted as half (½) of a missed session. Participants must notify the instructor of any absence or attendance matters.

Any participant deciding to drop or withdraw from the program is responsible to email or fill out a hard copy of the appropriate paperwork with an RW2 staff member.

Tutoring: Tutoring sessions are available to assist participants in understanding the concepts and techniques in AutoCAD in addition to those provided by text tutorials. All participants may take advantage of the tutoring; while those who are struggling to completing assignments, may be required to attend. Tutoring sessions are held two (2) times per month on Saturdays. (The instructor and participants decide on which to Saturdays each more or the instructor may decide.)

Incomplete Work: The Incomplete grade, or “I” grade, is a temporary grade designed for participants who, because of documented illness or other documented circumstance beyond their control, are unable to complete their program within the start and end date of the program. A participant must have completed at least 75 percent of the program with a grade average of “C” or better and have good attendance, before the end of the program.

The participant must meet with the instructor to prepare an Incomplete Grade Contract and make arrangements to complete the course on or before the time agreed upon or, if granted, in the appropriate subsequent program session. If the participant does not complete the program work by the established deadline, the instructor will change the “I” to the letter grade stipulated in the contract. Incomplete grades not converted to a letter grade by the instructor as stipulated in the contract will automatically become an “F”.

Educational Integrity/Honest: Every participant is expected to follow the Program’s regulations and guidelines relating to academic honesty. Please refer to the Participant Handbook.

Educational Dishonesty includes any or all of the following as applicable:

1. Plagiarism - the intentional use of the ideas or words of someone else as the participant’s own work, e.g. assignment.
2. Cheating during examinations and assessments, whether by copying from another participant or by using information in the form of unauthorized aids brought to the examination or assessment is prohibited.
3. Submitting the work for any assignment that was done by another participant or other person is prohibited.
4. Submitting the same work in more than one program or session to fulfill the requirements in another program or session, without prior approval of both instructors is prohibited.
5. Using a false name or signing the name of another individual without proper authorization in connection with any course work and for attendance is prohibited.

Disciplinary measures will be taken for any participant suspected of educational dishonesty. At no point in this program is it acceptable for a participant to submit someone else's work as their own, or use the ideas of someone else as their own. It is also unacceptable for a participant to share his/her own work with another participant. Any incidence of cheating will result in a grade or score equivalent to an "F" for the work.

American with Disabilities Act: In compliance with the American with Disabilities Act, RW2 makes every attempt to provide equal access for persons with disabilities. If you need an accommodation due to a disability, please contact an RW2 staff member at 816-875-0111. (See the RW2 catalog for more details.)

Code of Conduct: Participants are expected to conduct themselves in a manner consistent with the purpose of the program. Conduct deemed unacceptable toward maintaining a proper education and training environment will subject the participant to the Program's disciplinary action. The Code of Conduct is outlined in the Participant Handbook.

Sexual Harassment: Sexual harassment is prohibited by Federal and State law, as well as RW2's policy. If you feel that you have been subjected to sexual harassment, please discuss this with the Program Administrator. (See the RW2 catalog for more details.)

Grievance Procedure: When a participant feels his/her rights or freedoms have been violated, he/she has the right to use the grievance procedure to seek recourse. The Resiliency at Work 2.0 grievance procedure is outlined in the catalog.

Program Closures Due to Inclement Weather: In the event of inclement weather, notices of closing, late starts, etc. will be communicated through email and/or through recorded messages on the Program phone line: 816-875-0111. **Please note that evening and Saturday sessions may still be open even if day sessions are cancelled.**

Computer and Computer Technology Usage: All computers used in the RW2 program must be strictly in support of and for acceptable education and training purposes. It is not acceptable to use any computer at any of the RW2 program sites for purposes, which violate any federal law or state law. It is not acceptable to use any computer at RW2 program sites in a manner that is harmful or harassing, including accessing sexual materials on the Internet. It is not acceptable to use any computers at RW2 program sites in a manner that disrupts network use and service. It is not acceptable to use any computers in the RW2 program for commercial activities, such as, but not limited to, commercial solicitation of business.

It is the responsibility of the computer user to comply with the above and other regulations. Reported violations of these policies may result in disciplinary action and the participant may be subject to forfeiture of their computer use privileges. (See the RW2 catalog for more details.)

Cell Phones: During program sessions, pagers and cell phones should be on silent mode and put away. Participants are not allowed to take or return calls or pages during sessions.

Smoking Policy: RW2 abides by the policies of the facilities where the programming is offered. The facilities where RW2 holds programs are "SMOKE- FREE" facilities. **If smoking is permitted at a program site,** participants will be informed by an RW2 staff member about any designated areas.

The instructor and RW2 administration reserve the right to update the syllabus to meet programmatic and session objectives.