

Course Name: RWB 1500 BIM
Building Information Modeling
Syllabus – 2020/2021



RESILIENCY AT WORK 2.0®

rw2.moodlecloud.com – Online Course Link

www.rw2.education

team@rw2.education

Instructor/Facilitator:

Phone:

Email:

Session Schedule (Day): Monday - Thursday, 9:00 AM - 12:45 PM

Session Schedule (Evening): Monday - Thursday, 5:30 PM – 9:15 PM

RW2 Catalog, Handbook, Syllabus: <https://www.clec-education.com/RW2-resources/>

Prerequisite: Students must have completed a certificate or degree in CAD. Students should be familiar with the Microsoft operating system and word processing, be able to access, search and download information from the Internet, and have the ability to use a keyboard and a mouse

Other Required Resources:

- Computer running Windows 7 or above with Internet connection, camera and audio capabilities.
- Two computer monitors are recommended to facilitate viewing and working with multiple resources, e.g. online text, assignments and the software program.
- Revit Software, (Student not required to purchase.)
- USB Memory Flash Drive/Thumb Drive
- 64 GB or more (Student purchases.)
- Three-ring binder to organize notes, hand-outs, assignments, etc., paper, pencil, pen

Drop Period: The first week of the Program is the drop period. See refund policy in the catalog.

Withdraw Period: Any decision to discontinue the Program weeks two to seven. See refund policy in the catalog.

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.

Text Book: Eric Wing (2020). Autodesk Revit 2017 for Architecture: John Wiley & Sons, Inc., Indianapolis, Indiana. ISBN-13: 978-1119560081

Software: Revit Architecture 2019, 2020, 2021

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 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 an emphasis on the content of the drawings and the production skills. Topics include the development of floor plans, elevations and sections of building projects.

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.

Evaluation and Grading

Evaluation Criteria

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

| Category | Weight |
|--------------|-------------|
| Assignment | 15% |
| Lab | 20% |
| Project | 20% |
| Quiz | 15% |
| Exam | 20% |
| Attendance | 10% |
| 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 |

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

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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

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Chapter 12:

Creating Specific Views and Match Lines:

Duplicating Views, Dependent Views. Adding Match Lines,

Unit 13

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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!

Attendance: Regular attendance and punctuality are essential life and workplace skills; therefore, students are expected to attend all sessions as scheduled whether technical or transferable/soft skills, in person and/or online. Instructors maintain daily records of attendance -- absences, tardiness, and leaving early. Students who miss excessive session time are subject to be removed from the Program.

Attendance is evaluated on a session-by-session basis. Session attendance, preparation, and participation are integral components to a student's progress and completion. Students are strongly encouraged to attend every session and to spend an appropriate amount of time outside of class to prepare. Failure to attend sessions may result in reduced comprehension, engagement, and progress, which may have an impact on a student's overall performance and progress toward completion.

Attendance Warning: In the instance that a student is absent from all sessions for one week (all days, consecutively) within a program, the instructor or Program administration

will place the student on attendance warning. The student may also be subject to being administratively dropped or withdrawn. (See RW2 catalog for more information.)

Tutoring: Tutoring sessions are available to assist students in understanding the concepts. All students may take advantage of the tutoring; while those who are struggling to complete assignments, may be required to attend. The instructor and students decide on the tutoring session dates.

Incomplete: An incomplete grade, or “I” grade, is a temporary grade designed for students who, because of a documented illness, necessary absence (e.g. military) or other documented circumstance beyond their control, are unable to complete their program within the start and end date of a program.

The student must meet with an instructor to prepare an Incomplete Program Contract (IPC) and make arrangements to complete the course on or before the time agreed upon or, if granted, in the appropriate subsequent Program session. The IPC is also reviewed by the Program administration. If the student does not complete the program work by the established deadline or a maximum of one year and meet the letter grade stipulated, the instructor will change the “I” to an “F”. (See RW2 catalog for more information.)

Educational Integrity/Honest: Every student is expected to follow the Program’s regulations and guidelines relating to academic honesty. (See RW2 Handbook and Code of Conduct.)

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 student’s own work, e.g. assignment.
2. Cheating during examinations and assessments, whether by copying from another student 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 student 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 student suspected of educational dishonesty. At no point in this program is it acceptable for a student 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 student to share his/her own work with another student. 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 RW2 catalog for more information.)

Code of Conduct: Students 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 student to the Program's disciplinary action. The Code of Conduct is outlined in the RW2 Handbook and Code of Conduct.

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 RW2 Handbook and Code of Conduct.)

Grievance Procedure: When a student 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, text, RW2 online platform announcement, and/or through recorded messages on the Program phone line: 816-875-0111. Please note that in person and hybrid evening sessions may still be open even if day sessions are cancelled or vice versa.

Computer and Computer Technology Usage: Any computers owned by and 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 these and other regulations. Reported violations of these policies may result in disciplinary action and the student may be subject to forfeiture of their computer use privileges.

Cell Phones: During program sessions, pagers and cell phones should be on silent mode and put away. Students should excuse themselves from the session to make or take necessary calls.

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**, students 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 at any time.

