

435 Revit

COURSE POLICIES:

Grading:

Each numbered rubric criteria is worth 2 points. Ten total points possible per grade day.

Attendance:

Each student may have two total absences. However, more than two consecutive class meeting absences or three non-consecutive class meeting absences per course may result in the student being withdrawn from the course. Attendance is considered an important habit to acquire in becoming a mature, responsible member of the professional community.

Tutors:

A list of qualified tutors is available upon request. Please email the professor if you feel you need a tutor.

Technoliteracy:

Students are solely responsible for all computer related items including but not limited to; hardware, software, files, and file backups. The student is solely responsible for any issues, crashes, glitches, non-performance, and grade point loss related thereto. Each student is required to backup their own files.

Software:

Students are required to match the software versions currently installed in the IDI computer labs. If you are unsure, ask before you purchase and install.

GRADING

Project	100 points
Notebook	50 points
Take home Quiz	40 points
Total:	190 points

For detailed grading criteria and your assigned points see rubrics.

01-08 - CLASS 1:

Google meet, email, Canvas, software, weekly grading, turn in PDF files only, all homework submitted through Canvas, class load / schedule, cute pdf

BIM building information modeling
Technologically-based collaboration methods
groupware technology
collaborative software

Revit errors, use CTRL+Z, then do it correctly

Semantics (in the lecture notes below when you see the following, it means):

A standalone term or phrase = click on a black triangle to reveal more options at this location, click on or next to text to reveal more options (see properties), or click in a round circle to fill it and turn on that option, or click a button with this term or phrase on it, or click on a symbol marked button with this term or phrase as a tooltip (tooltips appear after hovering over an area for a few seconds), or click on a tab with this term or phrase on it, or go to a pallet titled with this name or phrase, or go to a section of the ribbon with this term or phrase along its bottom, or go to this empty or text filled box and type or choose.

Choose = after clicking on a black triangle find selection option, then click on selection (black triangles appear on buttons, in boxes, and sometimes only appear if you click in an already filled or empty box, see properties constraints), or use scroll bar to find item in list and click on it (also appears after clicking on a black triangle), or double click text, or after using + or – symbols to show listed items, double click on that item (see project browser), or double click to open folder with this name

Key in = strike keys on your keyboard as if you were typing, no enter key required

Note (applies to all syllabus content):

Lecture notes contained herein may require additional student notes for comprehension

1. Create a project – models, new, template file, choose, imperial-architectural template, ok
2. Basic navigation – Hold down middle mouse button to pan, scroll button to zoom
3. Temporary dimensions - Manage, additional settings, choose annotations, choose temporary dimensions, faces, openings, ok
4. Change wall height – Architecture, wall, choose architectural, properties, unconnected height, key 35' tall 8" thick generic for exterior walls, 11' tall 5" thick generic for interior walls (feet is base units)
5. Bail out – esc, esc
6. Add walls (WA at keyboard or Architecture, build, wall, choose architectural), click, hover click, use hidden line guide, use temporary dimensions (use modify, draw options)
7. Modify existing wall – Architecture modify, click wall object, double click blue dots to move dimension lines, hover over dimension numbers (look for box), click to modify location of wall
8. View elevation – Project browser, choose elevations, choose east (double click)

9. Modify elevation markers – Click on elevation line, drag small circle
10. Change level heights – Hover over dimension numbers (look for box), click to modify, make level 2 15'
11. Windows (to view work) – View, windows section, tile, click in view to activate, or key wt
12. Add interior walls – Project browser, floor plans, choose level (level 1 or 2), make walls 11' tall (basic wall generic 5", top constraint, choose unconnected, unconnected height 11'), add first and second floors from correct level (project browser level 1 or 2)
13. Tag rooms – Architecture, room & area, room, click room on plan (click on room names 2x to modify)
14. Tag rooms with difficult geometry – Architecture, room & area, room separator (create room separator lines), room & area, room, click room areas
15. Print a view – Key ctrl+p, preview

Assignment 01 - Rooms - due before class below:
N1 section 1 due next class

01-22 - CLASS 2:

1. Modify underlay – Level 2, properties, underlay range base level, level 1, choose none
2. Add a first and second floor plate – Architecture, floor, choose floor architectural, (a dialogue box will show if you are not currently in a needed view) go to a view of a level, properties, constraints, level, choose correct level, use boundary lines per class lecture
3. Default 3d View – Use house icon
4. Orbit – Use shift and middle mouse button
5. Add stairs – Architecture, circulation, stair, add stair per class lecture, (stair routine may look like it has stopped after 1st run, continue clicking for second stair run and landing will appear)
6. Modify floor – Hover over edge of floor, use tab (if required), click, edit boundary, split element, modify per class lecture
7. Add windows – Per class lecture
8. Copy windows – Click on window object, modify windows, modify, copy, use temporary dimensions per class lecture

9. Add doors – Per class lecture

Assignment 02 - Floors, stairs, doors & windows - due before class below:
N2 section 2 due next class

01-29 - CLASS 3:

1. Get a water closet component - use toto toilet shared file.rfa - or online
2. Insert water closet – Architecture, component, choose place a component, mode, load family, browse as shown in class, open, locate per class lecture
3. Get a grab bar component - use grab bar.rfa shared file or online www.bradleycorp.com, find bim-revit, washroom accessories, grab bars, choose 832 Grab Bar, click download selected, you may have to unzip, load per class lecture
4. Locate component per the building code – (18” from wall to centerline of toilet, and temporary dimensions as required, click blue dots to relocate temporary dimensions, only one side of temp dim may snap)
5. Insert a lavatory – Component, load family, browse as shown in class, imperial library (at left), plumbing, mep, fixtures, lavatories, lavatory wall mounted.rfa
6. Create an interior elevation - View, create, elevation, choose elevation, properties, elevation building elevation, choose interior elevation
7. Change the floor plan view scale (helps get the annotation to fit)- Properties, graphics, view scale $\frac{1}{4}'' = 1'-0''$
8. Create a section – View, section, insert per class lecture, access views by double click at section or elevation symbol
9. Insert millwork – Architecture, component, load family, browse as shown in class, casework, base cabinets, base cabinet double door sink unit, open, level 1, click to locate
10. Modify Casework – Click on casework, properties, base cabinet double door sink unit 30”, choose 48”, edit type, duplicate, name with for 34” counter, ok, dimensions, height, key in 2’ 8 1/2”, ok
11. Insert counter top - Component, load family, browse as shown in class, casework, counter tops, counter top w sink, open, edit type, duplicate, name, add for 34” high, ok, dimensions, height, 2’

10" (34" high), ok, level 1, click to locate, modify location per class lecture

Assignment 03 - Plumbing & cabinets - due before class below:
N3 section 3 due next class

02-05 - CLASS 4:

1. Dimension objects - Make temporary dimension permanent – click on entity, click dimension symbol
2. Create dimensions from scratch – Modify, measure, aligned dimension, choose aligned dimension (for elevations), click on horizontal surfaces for vertical dimensions
3. Create a dimension style – Select dimension, properties, edit type, duplicate, make changes
4. Modify dimension text – Select dimension, click dimension text, replace with text, key in 4" splash, ok, use blue dot to locate
5. Auto dimension for plan views - Modify, measure, aligned dimension, choose aligned dimension, modify place dimensions (along options bar), wall centerlines, choose wall faces, pick, choose entire walls, options, openings, choose widths, intersecting walls, ok, click wall, hover, click, modify as required
6. Create a sheet – Project browser, sheets, right click, new sheet, load, choose titleblocks, choose D 22x34 horizontal (see canvas downloads), right click, choose copy, right click again (in white space), paste, click copy, open, ok
7. Create plan views – Level 1, select and move elevation symbol as close as possible to walls, click on sheet to activate, project browser, level 1, drag and drop from project browser, to sheet, select and move as required
8. Suppress elevation markers – Level 1, ctrl + click multiple objects to hide, right click, choose hide in view, choose hide elements
9. View hidden items – Use view control bar (the little light bulb lower left), then click, right click to unhide
10. Set up a sheets as required – see above
11. Note symbol key referencing is automatic
12. Modify titleblock – Sheet, click on title block, edit family, click on Autodesk, delete, insert, import,

import image, browse for image, select image, open, click to place in block, modify, family editor, load into project, overwrite the existing version

13. Print house process – ctrl+p, name, choose pdf, file, combine multiple selected views/sheets into a single file, print range, selected views sheets, select, choose sheet to print, ok, settings, setup, size arch D, paper placement, center, zoom, zoom, 100%, check paper placement center again, ok, ok

Assignment 04 - Sheets, elevations & dimensions - due before class below:
N4 section 4 due next class

02-12 - CLASS 5:

1. Setup keynote text – annotate, tag, keynote, choose keynote settings, relative, browse, locate and create keynote text file per lecture (locate your own unique file), right click (in white space), new, text document, rename, projectname-keynotes.txt, enter, right click txt file, edit, key in three lines, (format for text file = keynote value, tab, keynote text, must add at least two lines) ei-1 telephone backboard per electrical drawings, ei-2 refrigerator by tenant, ei-3 dishwasher by tenant, file, save, close, (sometimes must load 2x), select txt file, open, ok, ok
2. Set up keynote – annotate, Tag, keynote, choose user keynote, place keynote, tag, (if ? must load 2x) keynote, keynote settings, browse, select file, open, ok, ok, delete out keynote on plan and replace, choose keynote value in list, ok
3. Setup keynote legend – project browser, legends, right click choose new keynote legend, key in; elevation keynotes (or name of legend), ok, filter (tab next to fields), filter by (none), choose key value, equals, choose begins with, key in ei
4. Place keynote legends on sheets in the same manner you place plans

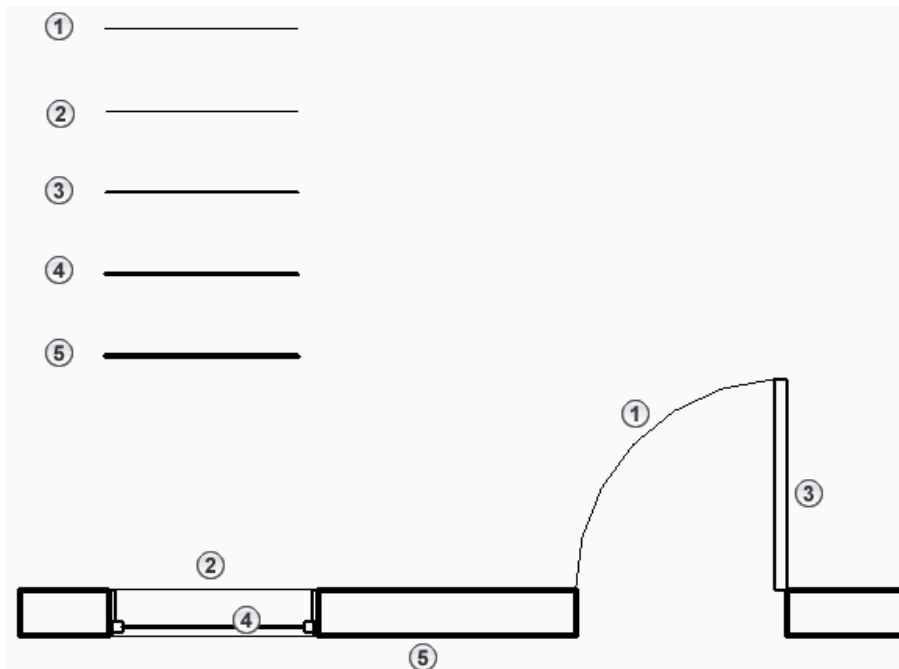
Assignment 05 - Elevations, keynotes & dimensions - due before class below:
N5 section 5 due next class

02-26 - CLASS 6:

1. Setup detail callout and detail – Project browser, open elevation window, view, section, (in new ribbon) modify/section, reference, reference other view, go to elevation window, click, hover click (to place callout - first click located bubble), click on callout stem, properties, edit type, section

tag, section tail, section tail filled 3/32" x 3/8", ok, apply, ok, esc, double click callout, opens drafting view, insert, import cad, use shared file casework detail.dwg, open, drafting view, right click, choose zoom to fit, click on detail, import instance, explode, choose full explode (prepares detail for modification)

2. Line styles – Manage, settings, additional settings, line styles, click on + to reveal line styles, modify subcategories, new, key in line A, ok, modify line as required, apply, ok



3. Apply line style to detail – Drafting view, select any line, modify/lines, lines style, choose line A, esc (this is only an example of how to modify imported line styles)
4. Update line styles - Select existing line, properties, verify line style name, manage, settings, additional settings, line styles, click on + to reveal line styles, find verified line style, modify line style as required
5. Update text - Select text to update, properties, edit type, edit properties as required
6. Create detail sheet - project browser, right click sheets, choose new sheet, choose your custom sheet, modify as required
7. Place detail on sheet - project browser, drafting views, elevation - section 1, drag and drop to sheet

8. Set up reflected ceiling plan – Project browser, ceiling plans, choose level 1, hide elevation symbol keys (see notes class 3)
9. Place ceiling – Architecture, build, ceiling, modify/place ceiling, ceiling, sketch ceiling, draw, use rectangle or lines, mode, finish edit mode, properties, note ceiling type and options
10. Modify grid location – Click grid line, modify, move, click, hover, distance
11. Insert ceiling fixtures – Architecture, build, component, choose place component, mode, load family, browse as shown in class, choose lighting, architectural, internal, troffer light 2x4 parabolic, open, place fixture, esc esc, modify, modify (tool), select troffer, modify, rotate or move as required, use snaps
12. Make a ceiling legend symbol – Project browser, legends, right click legends, choose new legend, name legend, annotate, detail, region, choose filled region, draw, rectangle, (click hover to draw rectangle), mode, finish edit mode, esc, select region (use boundary), properties, edit type, duplicate, key in 2x4 scs, ok, foreground fill pattern, value, fill patterns, pattern type, model, choose ceiling 24x48, ok, ok, modify as required
13. Make ceiling legend text – Annotate, text, text, properties, text 3/32" arial, click top left of text start point, key in text, modify/place text, edit text, close, click hold and drag for multiline text, copy for more text, double click on text, ctrl + A, key in new text, close
14. Make a fixture legend symbol – Annotate, detail, component, choose legend component, family (small bar below ribbon), choose lighting fixtures troffer light 2x4 parabolic 2 lamp 120v, place temporarily, re-select, modify, move (MV), use snaps (same steps for other symbols, look for options next to family, host length, view, etc.)
15. Legend scale - Ceiling legend, scale box, choose 1/4" = 1'-0"

Assignment 06 - Details & ceiling plan - due before class below:
N6 section 6 due next class

03-04 - CLASS 7:

1. Tag ceiling plan rooms – Project browser, ceiling plans, level 1, architecture, room & area, tag room, choose tag room, click on room or area
2. Tag doors - Project browser, floor plans, level 1, annotate, tag by category, click door (tag is

- placed automatically), esc, esc, click on door tag, properties, leader line, locate as required
3. Door schedule – Project browser, schedules/quantities, right click, new schedule/quantities, category, choose doors, ok, available fields: choose mark, add parameter (green arrow) add also (can click multiple with ctrl) width, height, thickness, frame material, add parameter (green arrow) (hardware to be added later), select individual field, move parameter up or down as required, ok, schedule is created
 4. Modify door schedule group column headings– Door schedule, drag across two column headings, right click, choose group headers, key in label
 5. Modify door schedule column headings – Click in heading cell, key in new name, to see data source; properties, fields, edit, scheduled fields (in order)
 6. Add hardware to door schedule – Project browser, schedules/quantities, right click choose new schedules/quantities, category, choose doors, name, key in hardware schedule, schedule keys, key name, key in hardware schedule again, ok, new parameter, name, key in hardware type, type of parameter, choose text, group parameter under, choose other, ok, scheduled fields, verify hardware type is there, select key name, remove parameters, available fields, choose comments, add parameters, ok, rows, insert data row, hardware type column, key in A, rows, insert data row, hardware type column, key in B, comments column, key in schlage I series I9050 17a 626, key in remaining schedule information, door schedule, properties, fields, edit, available fields, choose hardware type, add parameter, ok, hardware type column, row 1, choose A, row 2 choose B, continue with remaining rows as required
 7. Room Finish schedule – Project browser, schedules/quantities, right click choose new schedules/quantities, category, choose rooms, name, key in room finish schedule, ok, available fields, choose name, add parameter, available fields, choose number, add parameter, ok
 8. Create finish schedule - Project browser, schedules/quantities, right click choose new schedules/quantities, category, rooms, name, key in finish schedule materials, schedule keys, key in finish schedule materials again, ok, new parameter, key in finish code, type of parameter, choose text, group parameter under other, ok, new parameter, key in finish description, type of parameter, choose text, group parameter under other, ok, scheduled fields, verify finish code and

finish description, remove key name parameter, ok, finish schedule materials, rows, insert data row, finish code column, key in p-1, description column, key in frazee clw 1044w icefield eggshell, room finish schedule, properties, fields, edit, available fields, choose finish code, add parameter, ok, room finish schedule, finish code column, click to assign finish codes to rooms

9. Modify finish schedule – Room finish schedule, properties, fields, edit, new parameter, name, key in north wall, type of parameter, choose text, group parameter under, choose other, ok, repeat as required (East, North, South, West), room finish schedule, properties, other, fields, edit, scheduled fields, choose finish code, remove parameter, type code rather than choosing

Assignment 07 - Room finish & door schedule - due before class below:
N7 section 7 due next class

03-11 - CLASS 8:

1. Create furniture plan – Project browser, floor plans, level one, right click, choose duplicate view, choose duplicate, project browser, floor plans, right click level 1 copy 1, rename to furniture plan
2. Add furniture to plan – Insert, load family, browse as shown in class, choose furniture, choose seating, choose chair breuer, open, architecture, component, place a component
3. Tag furniture – Annotate, tag, tag by category, click on furniture component, yes, browse as shown in class, choose annotations, choose architectural, choose furniture tag, open, click on furniture component, esc, esc, click on furniture component, properties, edit type, type mark, key in F-1, ok
4. Create furniture schedule – Project browser, schedules/quantities, right click, choose new schedule/quantities, category, choose furniture, ok, available fields, choose type mark, add parameters, repeat for count, description, and comments, ok, properties, sorting/grouping, edit, sort by, choose type mark, ascending, uncheck itemize every instance, ok

Assignment 08 - Furniture plan - due before class below:
N8 section 8 due next class

03-18 - CLASS 9:

1. Demolition plan – Project browser, floor plans, level one, right click, choose duplicate view, choose duplicate, project browser, floor plans, right click level 1 copy 1, rename to future demo,

repeat steps above, rename to future construction, select furniture, right click, hide in view, category, repeat for future demo, manage, phasing, phases, select new construction row, insert, after, name (replace phase 1), key in future demo, insert, after, key in future construction, ok, project browser, floor plans, level 1, properties, phasing, phase filter, show all, phase, new construction (verify already set), project browser, floor plans, future demo, properties, phasing, phase filter, show all, phase, future demo, apply (walls grey out), project browser, floor plans, future construction, properties, phasing, phase filter, show all, phase, future construction, apply, project browser, floor plans, future demo (activate this plan), select wall to demo, properties, phasing, phase demolished, choose future demo, apply, repeat for all entities that require demolition

2. Future Construction plan – Activate future construction floor plan, architecture, wall, wall architectural, locate wall in future construction floor plan, click on wall, properties, phasing note that phase created is future construction
3. Wall legend – Project browser, legends, right click on legends, choose new legend, name, key in wall legend, ok, project browser, families, walls, basic wall, choose generic 5", drag into wall legend, and click to locate, manage, settings, additional settings, line styles, lines ("+" to show existing line styles), modify subcategories, new, key in existing wall, ok, line weight, choose 3, at red: green: blue:, key in 128-128-128, ok, modify subcategories, new, key in demolished wall, ok, line weight, choose 3, line pattern, choose hidden 1/8", ok, wall legend, annotate, detail line, properties, line style, choose demolished wall, modify place detail lines, rectangle, draw wall to match existing (5" x 3'), repeat for existing wall, annotate, text, properties, choose 3/32" arial, click top left of text start point, key in legend text , repeat as required
4. Wall edges clean up- (only if required for complicated walls) click wall, click again on small blue dot, right click on small blue dot, choose disallow join, move wall as required
5. Make a plan sheet – as discussed in class, include wall legend
6. Make second legend - duplicate with detailing (only if your plans do not fit on one sheet)

Assignment 09 - Demolition plan - due before class below:
N9 section 9 due next class

03-25 - CLASS 10:

1. Perspective views – Level 1, view, 3d view, choose camera, click 2x to place camera in plan, 3d view, use blue dots to modify view, modify camera in plan by selecting frame of perspective (in perspective view), use blue dot
2. Apply materials – Visual style (box at lower left of view), choose realistic, modify, geometry, paint, material browser, choose material, click on face in model, done
3. Load materials - Manage, materials, creates and duplicates materials (button at lower left), choose create new material, appearance, replaces this asset (button upper right), asset browser, appearance library, choose wall covering, choose victorian (any material is ok), double click material preview, replaces the current asset in the editor with this asset, close asset browser, identity, name, key in victorian wall paper (or whatever your material is), ok, assign as above (some known crashing with non-default materials)
4. Custom materials – Manage, materials, creates and duplicates materials, choose create new material, appearance, generic, image, click in white box, shared file wood.bocote.texture.jpg, open, bump, choose bump, shared file wood.bocote.bump.jpg, identity, name, key in bocote wood, ok
5. Apply material to component – Click component, base cabinet double door sink unit, edit type, door drawer material, by category, choose bacote wood, ok, ok
6. Change material scale – Assign tile gray mosaic to floor, manage, materials, searches for materials, key in tile, choose tile mosaic gray, appearance, generic, image, click on image, texture editor, scale, sample size, key in 5', done, ok.

Take home Quiz due at the end of next class.

Assignment 10 - Perspectives - due before class below:
N10 section 10 due next class

04-01- CLASS 11:

1. Pdf export plan set – pdf (pdf export - icon at top of screen), selected views/sheets, pencil, check

sheets A101-109, select, export

2. Open pdf, check print output file for correct alignment, centering, paper size, and that all sheets are in one single file

Assignment 11 - Pdf File of full plan set due by the end of the class.

Take home Quiz due.