

**Construction & Civil Engineering Technology (CCET)**

**School of Computer Science, Engineering, Logistics, Applied Sciences**

**CRN 24989 & 27301** **SESSION: Spring 2025**

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**Course Syllabus** *for* **BCN 1303C Building Information Modeling (REVIT w/ Dynamo)**

**Course Description** *(From the Valencia Catalog):*

This course will prepare students with the Building Information Modeling (BIM) skills needed to develop digital designs using REVIT software with Dynamo. Students will learn to create and modify various building elements, envelope systems, and detail features to create a complex model and produce the drawings needed for construction. Emphasis will focus on navigation and analysis of 3D models with Dynamo visual programming tools to expedite the design process. Students will also utilize software tools to discover discrepancies and make changes to ensure a smoother construction process for those performing the work.

**Class Meetings:** **ONLINE**

**Text:** **None required.** This book is recommended as a **reference:**

***Mastering Autodesk Revit 202x for Architecture:*** by Kim/Kirby/Krygiel (latest edition), published by John Wiley & Sons, Inc, Indianapolis, Indiana.

**Materials:** Google account

**Install Revit 2025** w/Dynamo at home (refer to AutoDesk website for student accounts)

**Instructor Information:**

Name: **Andrew Ray**

Office: **Building 9, Room 140D**; Mailbox in 9-140; Mail Code 4-41

Phone: (407) 582-**1847**

Email: **ARay**@valenciacollege.edu

Office Hours: Posted by office door and on Faculty FrontDoor online.

Appointments may also be made at mutually convenient times.

**Student Performance Assessment:**

Lecture exams, quizzes, homework, class assignments, and the final project will determine your course grade. Your final average will be valued according to the following grading scale:

**Grading scale:** 90 - 100% = A **Grade Procedure:** Quizzes = 10%

80 - 89.9% = B In-class Participation = 05%

70 - 79.9% = C REVIT Assignments = 30%

60 - 69.9% = D Mid Term (REVIT) = 15%

0 - 59.9% = F Dynamo Assignments = 15%

Project = 15%

Final Exam (Dynamo) = 10%

*TOTAL = 100%*

**Classroom Policies** for this class are published on this Faculty Front Door site:

<http://frontdoor.valenciacollege.edu/syllabi.cfm?uid=aray>

***NOTE:*** Submission of your first assignment is considered proof that you have read, understand, and accept the classroom policies as published.

***Late Work:*** one week late -5%; 2 weeks -10%; more than 2 weeks: not accepted.

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| **BCN1303C Spring 2025 Schedule\***  *\*subject to revision by Instructor during semester* | | | |
| ***Date*** | ***TOPIC*** | ***Covered in Video*** | ***Homework:*** |
| Wk1 | Student introductions;  **Intro to REVIT;** ribbon, layout and file set-up | * REVIT ribbon, properties & browser * Wall layout exercise * Revising Family Types | Install Revit at home  **Watch video tutorials** |
| Wk2 | **Floor** and **slab edge** | * Floor tool: span direction & slab edge * Duplicate element, rename and edit assembly * Changing materials: defaults & asset browser | Complete/Print:  **A102 Foundation Plan** |
| Wk3 | **Walls, doors,** and **windows** | * Duplicate and edit wall types * Duplicate and edit doors and windows | Continue drawing |
| Wk4 | **Sections and interior elevations** | * Creating wall sections and building sections * Creating interior elevations and camera views * Tutorial review & setting up sheets | Continue drawing |
| Wk5 | **Appliances, cabinets, fixtures, ceilings, lighting** | * Placing appliances, cabinets, and fixtures * Ceiling configuration, aligning grid * Placing lighting fixtures | Complete/Print:  **A103 Floor Plan** |
| Wk6 | **Site features** and **sheet set-up** | * Property boundaries & topography * Topo sub-regions & parking * Site elements – trees, entourage, North arrow | Complete/Print:  **A101 Site Plan** |
| Wk7 | **Curtain-walls** and **storefront** | * Curtain walls and store fronts * Storefront details, curtain-wall doors | Complete/Print:  **A201 Elevations** |
| Wk8 | **Detail components, material libraries,** and **creating families** | * Add detail components to wall section * Use Keynote to identify materials * Modify materials from library * Create a unique family | Complete/Print:  **A301 Sections** |
| **Wk9** | **EXAM on REVIT**  Intro to **Dynamo**  **Creating REVIT geometry w/ Dynamo** | * REVIT EXAM * Dynamo Primer: Interface, terms * Download third-party packages * Construct script to create simple geometry | Watch video tutorials on Dynamo; download external packages |
| Wk10 | **Creating lists, lacing and transposing lists** | * Create list; transpose order * Understanding lacing | Exercises + Challenge |
| Wk11 | ***SPRING BREAK*** | * *ENJOY TIME OFF* |  |
| Wk12 | **Import/export to EXCEL files**  **Final Project** | * Export list to EXCEL * Import data from EXCEL * Assign Final Project | Exercises + Challenge |
| Wk13 | **Automate set-up of REVIT sheets**  **Import survey data**  **Example Projects** | * Create script to automate levels and sheets * Import site data from total station * Best practices from Video tutorials | Exercises + Challenge  Continue project &  Review Progress |
| Wk14 | **Complete final project** | * Trouble-shooting scripts | Complete Project |
| **Wk15** | **FINAL PROJECT** | ***Final Project Submittal and Presentation*** | **Final exam on Dynamo** |