

University of Cincinnati
Civil & Environmental Engineering 686
Introduction to Digital Prototyping for AEC Projects

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Course Scope: *Familiarize students with the use of object-oriented, 3-D parametric modeling to assist with project management tasks such as clash detection, quantity estimating, and installation sequencing.*

Course Material: CATIA V5 Workbook (Releases 14/15), 2005 edition, by Richard Cozzens, Schroff Development Corp., ISBN: 1585032573, 528 pp.

Course Software: Digital Project (DP) by Gehry Technologies

ASSIGNMENTS

Cozzens Assignments	Chapters 1 and 2 – Complete 10 review questions for each chapter. Students with first name beginning with A and B: answer odd questions. All others: answer even questions. Then, complete the reading exercises within all other chapters. 9 chapters @ 2% each = 18% subtotal for Cozzens assignments
Parts	6 difficulty points @ 5% each = 30% subtotal for parts
Assemblies	On Thursdays in the month of May (4 total), we will work as a group to assemble 3 to 4 parts onto our project. Your assemblies grade will be based on (1) your contributions to the group effort, (2) the group's ability to complete the assembly by the following Wednesday, and (3) the degree to which the assemblies reflect reality in terms of AEC practice. 4 assemblies @ 5% each = 20% subtotal for assemblies
Quantity Take-offs	During the week of May 30 th (if not earlier), the class will develop a quantity take-off for the materials included in the final project. Your quantity take-off grade will be based on (1) your contributions to figuring out how to conduct the quantity take-off, (2) the group's ability to complete the quantity take-off, and (3) a group report on the batch sizes used for ordering the materials as well as typical costs and bulk discounts associated with the materials being considered. 1 quantity take-off @ 5% each = 5% subtotal
Sequencing	During the week of May 30 th (if not earlier), the class will sequence the final project's parts. Your sequencing grade will be based on (1) your contributions to figuring out how to link the schedule in MS Project to DP, (2) the group's ability to link the schedule in MS Project to DP, and (3) the degree to which the final sequence reflects reality in terms of AEC practice. 1 sequence @ 5% each = 5% subtotal

Take-home Final	<p>The take-home final will consist of 3 parts:</p> <ol style="list-style-type: none"> 1. A discussion of your learning experience in this course. 2. How you envision Building Information Modeling (BIM) programs like Digital Project can transform AEC practice, and more specifically, how you envision your role in that change. 3. A concise explanation (e.g., bullets, figures, tables) of the assembly logic and parametric relationships embedded within the final project. <p>3 parts @ 5% each = 15% subtotal</p>
Final Discussion (due TBD)	<p>On Thursday, June 8, 2006, we are scheduled to meet at 7:30 to 9:30 am in 701 Rhodes Hall to have a final 3-D viewing of our project and discuss the degree to which the final model reflects reality in terms of AEC practice. Attendance and participation in this discussion will be worth 7% of your overall course grade.</p>

Bring your books to all lectures indicated by “Cozzens.”

All assignments are due via e-mail to Professor Tsao by **9:00 p.m.** on the specified dates.

Make sure you **include your initials** at the beginning of your filenames.

NOTE: Late submissions incur a 1% penalty on the specific assignment or presentation grade for every 5 minutes late.

COURSE SCHEDULE (Subject to change based on student progress)

Week	Tuesday	Wednesday	Thursday	Friday
1	Gehry video, Cozzens 1		Brief DP intro, Cozzens 2	Cozzens 1 due
2	Cozzens 3	Cozzens 2 due	Cozzens 4	Cozzens 3 due
3	Cozzens 7	Cozzens 4 due	Cozzens 8	Cozzens 7 due
4	Cozzens 9	Cozzens 8 due	Cozzens 10	Cozzens 9 due
5	Cozzens 13	Cozzens 10 due	Course revision Work on parts	Cozzens 13 due
6	Work on parts	Group 1 parts due	Assembly 1	
7	Work on parts and assemblies	Group 2 parts due Assembly 1 due	Assembly 2	

Week	Tuesday	Wednesday	Thursday	Friday
8	Work on parts and assemblies	Group 3 parts due Assembly 2 due	Assembly 3	
9	Work on parts and assemblies	Group 4 parts due Assembly 3 due	Assembly 4	
10	Quantity take-offs and sequencing	Assembly 4 due	Quantity take-offs and sequencing	Quantity take-offs due
11	Finals week	Sequencing due	7:30-9:30 am Final discussion	