

SYLLABUS Part II: Lectures, Labs, and Assignments

CEE262B: Structures in the Urban Environment				
Lecture Syllabus, Spring 2025				
	DAY	WEEK	LECTURE TITLE	RELATED READING (*)
1	27-Jan	1	Introduction to Structural Art	T&B Ch. 1
2	29-Jan	1	The Origins of Structural Art: Telford, Brunel, and British Metal Forms	T&B Ch. 2, 3
3	3-Feb	2	John Augustus Roebling & the Brooklyn Bridge	T&B Ch. 5
4	5-Feb	2	The Eads Bridge, Eiffel's Bridges, and Baker's Firth of Forth Bridge	T&B Ch. 8(112-122), Ch.4 (66-71)
5	10-Feb	3	Othmar Ammann and the Bayonne and G. Washington Bridge	T&B Ch. 8 (122-134)
6	12-Feb	3	Wind, Suspension Bridges, and the Verazzano Narrows Bridge	T&B Ch. 8 (135-146)
7	17-Feb	4	The Golden Gate Bridge	
8	19-Feb	4	The Origins of Structural Art in Reinforced Concrete: Robert Maillart	T&B Ch 9
9	24-Feb	5	Origins of Prestressing: Freyssinet, Magnel and Finsterwalder	T&B Ch 11
10	26-Feb	5	New Bridge Forms: Christian Menn	T&B Ch 13 (249-260)
11	3-Mar	6	MIDTERM EXAM REVIEW	
12	5-Mar	6	MIDTERM	
13	17-Mar	7	The Eiffel Tower and the Washington Monument	T&B Ch. 4 (60-64)
14	19-Mar	7	The Gothic Cathedral and the Skyscraper	T&B Ch 7
15	24-Mar	8	Fazlur Khan and Tall Buildings	T&B Ch. 13 (233-248)
16	26-Mar	8	Response & Design of Structures for Wind and Earthquakes	
17	31-Mar	9	Floating Structures and Coastal Resilience	
18	2-Apr	9	The German vs. the Spanish Tradition of Vaulted Roof Forms	T&B Ch. 10 (171-175) T&B Ch. 10 (183-188)
19	7-Apr	10	Felix Candela and Hyperbolic Paraboloid Thin Shell Concrete Vaults	T&B Ch. 10 (189-193)
20	9-Apr	10	Heinz Isler and "Natural" Forms for Concrete Vaults	T&B Ch. 12 (222-232)
21	14-Apr	11	Pier Luigi Nervi and the Italian Tradition of Ribbed Concrete Vaults	T&B Ch. 10 (176-183)
22	16-Apr	11	Modern Structural Design: Panel of Designers	
23	21-Apr	12	Structural Elegance at Any Cost? Is it Ethical?	
24	23-Apr	12	Contemporary Design: New Tools, New Forms	

* These readings (from *The Tower and the Bridge* book) are not required, but they enhance your understanding of the lectures.

CEE262B: Structures in the Urban Environment
Lab Syllabus and Assignments, Spring 2025

WEEK	LAB #	LOCATION	ACTIVITY	Lab Due Friday	Prob. Set Due Friday
Week 1 27-29 Jan			LABS CANCELLED WEEK 1		
Week 2 3-5 Feb	odd	E110	LP1. Stress and Cables (PS1, PS2)		
	even	E311	LP1. Stress and Cables (PS1, PS2)		
Week 3 10-12 Feb	odd	E110	Lab 1a. Wash. Mon. & Breaking Wires		PS1 (Feb 14)
	even	E311	Lab 1b. Cable Shape & Graphic Statics		
Week 4 17-19 Feb	odd	E311	Lab 1b. Cable Shape & Graphic Statics		PS2 (Feb 21)
	even	E110	Lab 1a. Wash. Mon. & Breaking Wires		
Week 5 24-26 Feb	odd	E110	Lab 2. Quebec & Menai Bridges	Lab 1 (Feb 28)	
	even	E311	LP2. Wind and Moment (PS3)		
Week 6 3-5 Mar	odd	E311	LP2. Wind and Moment (PS3)	---	MIDTERM
	even	E110	Lab 2. Quebec & Menai Bridges	---	
Week 7 17-19 Mar	odd	E110	Lab 3. Eiffel Tower & Wash. Mon.		PS3 (Mar 21)
	even	E311	LP3. Tall Bldgs: Wind and Gravity (PS4)		
Week 8 24-26 Mar	odd	E311	LP3. Tall Bldgs: Wind and Gravity (PS4)	Lab 2 (Mar 28)	
	even	E110	Lab 3. Eiffel Tower & Wash. Mon.		
Week 9 31-2 Apr	odd	E417	Lab 4. Floating Structures		PS4 (Apr 4)
	even	E311	LP4. Domes		
Week 10 7-9 Apr	odd	E311	LP4. Domes	Lab 3 (Apr 11)	
	even	E417	Lab 4. Floating Structures		
Week 11 14-16 Apr	odd	E110	Lab 5a. Form-found shells: build		PS5 (Apr 18)
	even	E417	Lab 5a. Form-finding shells: build		
Week 12 21-23 Apr	odd (1:30 - 3)	E110	Lab 5b. Form-found shells: test	Lab 4 (Apr 25)	
	even (3-4:20)	E110	Lab 5b. Form-found shells: test		
Lab 5 (Deans Date, May 6)					

LABS

1. Stress in Tensile and Compressive Structures
 - a. Washington Monument and Breaking Wires
 - b. Cable Shape and Graphic Statics
2. Bridges - Suspension and Horizontal Cantilevers
3. Tall Buildings: Columns and Cantilevers
4. Floating Structures
5. Form-found shells
 - a. design and build
 - b. load test for strength

LAB PRECEPT (LP)

- LP1. Stress, Efficiency, Safety Factors and Cables (PS1,PS2)
- LP2. Wind and Moment (PS3)
- LP3. Tall Bldgs: Wind and Gravity (PS4)
- LP4. Domes: Shapes, Loads, Supports (PS5)

PROBLEM SETS (PS)

- PS1: Columns and Stress
- PS2: Cables and Suspension Bridges
- PS3: Wind, Moment, Eiffel Tower
- PS4: Wind, Gravity, Hancock Tower
- PS5: Domes: Shapes, Loads, Supports