

**2021 - 2022 Curriculum Requirements for MS-SDC Degree**

# - denotes limited class enrollment    \$ - CEE 222A and CEE 222B must be taken as a pair    % - either 246B or 246S can be counted, but not both

AREA	Autumn		Winter		Spring		CONCENTRATION REQUIREMENTS			
	Class	Units	Class	Units	Class	Units	Management	Structures	Energy	SUS
<b>Building, Infrastructure, and Urban System Development</b>	218X Shaping the Future of the Bay Area	3,4,5	218Y Shaping the Future of the Bay Area	3,4,5	218Z Shaping the Future of the Bay Area	3,4,5	3	3	6	12
	241A Infrastructure Project Development	3	222A Computer Integrated A/E/C \$	3	220C Parametric Design and Optimization	2,3,4				
	243 Intro to Urban Systems Engineering	3	224A Design & Operation of Integrated Infra Systems	3	222B Computer Integrated A/E/C \$	2				
	322 Data Analytics for Urban Systems	3			241C Global Projects Seminar	1,2				
					246B Real Estate Finance	3				
				248 Real Estate Development	2					
<b>Structures</b>	101C Geotechnical Engineering	3,4	182 Structural Design	3,4	223 Materials for Sustainable Built Environments	3		12		
	203 Probabilistic Models in Civil Engineering	3,4	282 Nonlinear Struct Analysis	3,4	287 Earthquake Resistant Design	3,4				
	280 Advanced Structural Analysis	3,4	283 Structural Dynamics	3,4	290 Structural Performance Failure	2				
	285A Advanced Struct Concr Design	3,4	285B Advanced Struct SteelDesign	3,4						
			288 Intro to Performance-based Earthquake Engin	3,4						
		293 Foundation Engineering	2,3							
<b>Energy &amp; Atmosphere</b>	226 Life Cycle Assessment	3,4	176A Energy Efficient Buildings	3	176B Electric Power: Renewable	3,4	3	3	9	6
	330 Racial Equity in Energy	2,3	256 Building Systems Design & Analysis	3,4	226E Decarbonized and Energy Efficient Building Desigr	2,3				
	EN301 Energy Seminar	1	EN101 Energy & Environment	3	272R Power Systems	3				
			EN301 Energy Seminar	1	EN102 Fundamentals Renewable Power	3				
				EN301 Energy Seminar	1					
<b>Construction</b>	240 Project Assessment and Budgeting	3	102A Legal Principles in Design, Constr & Delivery	3	246 Venture Creation for the Real Economy	3,4	12	5	6	5
	241 Managing Fabrication & Construction	4	202 Legal Aspects of Construction	3,4	324 Industrialized Construction	2				
	241A Infrastructure Project Development	3	241B Infrastructure Project Delivery	3						
	244 Engineering Accounting & Finance (Summer Qtr)	3	242 Organization Design	3,4						
			327 Construction Robotics	3						
			341 Virtual Design and Construction	3						
<b>Industry Context</b>	241A Infrastructure Project Development	3	214 Frontier Technology	2	241C Global Infra Projects Seminar	1,2	8	3	5	3
	257 Sustainable Finance and Investment	1	227 Project Finance #	3,4,5	246 Venture Creation for the Real Economy	3,4				
	258 Watson Seminar	1	272T SmartGrids & Advanced Power Systems Seminar	1,2	246B Real Estate Finance %	3				
	272T SmartGrids & Advanced Power Systems Seminar	1,2	298 Structural Engineering Seminar	1	246S Real Estate Finance %	1				
	323A Infrastructure Finance and Governance	1			248 Intro Real Estate Development	2				
					272T SmartGrids & Advanced Power Systems Seminar	1,2				
					297M Managing Critical Infrastructure	2				
				323C Infrastructure Finance and Governance	1					
<b>Skills</b>	146S Engineering Economics and Sustainability	3	220B Advanced BIM Workshop	2,3,4	146S Engineering Economics and Sustainability	3	4	4	4	4
	322 Data Analytics for Urban Systems	3	242R Project Risk Analysis	3	220C Parametric Design and Optimization	2,3,4				
					251 Negotiation #	3				
				329 AI Applications in AEC	3					
<b>Total</b>							<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>

**General Requirements applicable to degree:**

<b>Other Degree Requirements</b>	1) Required classes and approved electives must total at least 45 units (PE and Language courses don't count)	4) All courses at or above 100 level, at least 30 units at or above 200 level
	2) Program proposal must be approved by advisor	5) Maximum of 5 total units of seminars
	3) Comply with the CEE Graduate Degrees Handbook ( <a href="https://cee.stanford.edu/student-resources">https://cee.stanford.edu/student-resources</a> )	6) Average Letter Grade Indicator (GPA) of at least 2.75 for courses in program
		7) Required courses taken at other institutions must have a letter grade indicator of 2.67 (B-) or above
		8) Credit for classes listed in multiple areas may be split between those areas (no double counting)

**Additional Concentration Requirements - A concentration is required of all students. Italicized prerequisite courses are required unless a waiver is granted by your advisor. Bold courses are required to be taken at Stanford.**

Management	Structures	Energy	Sustainable Urban Systems
CS106A	CS106A	CS106A	CS106A
CEE101C	CEE101C	CEE146S	CEE146S
CEE146S	CEE146S	CEE244	<b>E202W or E203</b>
CEE182	CEE180	<b>E202W or E203</b>	CEE226
CEE244 (Summer)	CE182	CEE226	CEE241
<b>E202W or E203</b>	<b>E202W or E203</b>	CEE241	CEE258
CEE226	CEE226	CEE241C	<b>2 or more of the following (a maximum of 9 units from the 218 series can count towards the 12 units required in Building, Infrastructure, and Urban System Development)</b>
CEE241	CEE241	CEE258	CEE218X
CEE241C	CEE258	<b>At least 2 or the following</b>	CEE218Y
CEE258	CEE285A	CEE176A	CEE218Z
	CEE285B	CEE226	
	CEE298	CEE256	