I	Introduced
D	Developed
A	Applied

Terms	Course Number	Course Name	1. Knowledge Base	1a. Demonstrate understanding of concepts in mathematics	1b. Demonstrate understanding of concepts in natural science	1c. Demonstrate understanding of engineering fundamentals	1d. Demonstrate understanding of specialized engineering knowledge	2. Problem Analysis	2a. Formulate a problem statement	2b. Develop models to solve engineering problems including identifying approximations, assumptions and constraints	2c. Critically evaluate solutions of engineering problems	3. Investigation	3a. Create investigative studies of complex engineering problems	3b. Gather information from relevant sources to address complex engineering problems	3c. Synthesize information from multiple sources to reach to reach valid conclusions	4. Design	4a. Define design requirements and specifications for complex, open-ended engineering problems	4b. Critically evaluate and compare design choices	4c. Generate and refine potential solutions to complex, open-ended design problems	5. Use of Engineering Tools	5a. Select appropriate engineering tools, considering their limitations	5b. Modify and/or create appropriate engineering tools, identifying their limitations	5c. Use engineering tools appropriately	6. Individual and Team Work	6a. Contribute as an active team member or leader to complete individual tasks	6b. Collaborate with others to complete tasks effectively as a team	7. Communication Skills	7a. Orally present information within the profession and to society at large	7b. Communicate in a written format within the profession and to society at large	7c. Interpret information, including instructions	8. Professionalism	8a. Articulate the roles and responsibilities of the professional engineer in society with reference to the protection of the public and its interest	8b. Describe the importance of codes, standards, best practices, laws, and regulations within engineering	9. Impact of Engineering	9a. Identify the relevance of and uncertainty associated with the different aspects (social, cultural, economic, health, safety, legal, environmental), of an engineering project	9b. Analyze the social, health, safety, and environmental aspects of an engineering project, incorporating sustainability considerations and environmental stewardship in making decisions	10. Ethics & Equity	10a. Identify ethical and unethical behavior in professional situations	10b. Identify how an engineer is accountable to multiple stakeholders in engineering practice	10c. Identify equitable and inequitable situations or behaviors	11. Economics & Project Management	11a. Apply project management techniques and other business practices in engineering projects, with attention to risk and change	11b. Perform economic analyses of engineering projects with attention to uncertainty and limitations	12. Life-long Learning	12a. Identify gaps in their knowledge, skills and abilities	12b. Obtain and evaluate information or training from appropriate sources	12c. Reflect on the use of information or training received
1A	AE 100	Concepts Studio												I			I	I	I						I	I		I		I			I	I		I				I						I			I	
	AE 101	History of the Built Environment				I	I																							I	I						I											I	I
	AE 104	Mechanics 1			I	I			I	I	I										I				I	I												I		I							I		
	AE 115	Linear Algebra		I					I						I						I																													
	CHE 102	Chemistry for Engineers			I	I									I							I																												
	MATH 116	Calculus 1 for Engineering		I					I						I						I																													
	PD 19	Professional Development																							I						I																I	I	I
1B	AE 105	Mechanics 2			I	D			I												I		I																											
	AE 121	Computational Methods		D		I								I								D																												
	AE 123	Electrical Circuits and Instrumentation		I		I	I		I	I	I		I								I		I																											
	AE 125	Structural Design Studio							I								I	I	I						I	I		I					I	I										I						
	MATH 118	Calculus 2 for Engineering		D					I						I																																			
	PD 20	Professional Development																													I										I	I					I	I	I
2A	AE 200	Enclosure Design Studio								D	D						D	I	D				I		D	D		D	D	D		D	D		I				D			I			D			D		
	AE 204	Solid Mechanics 1				D			D	D							D		D		D		D		D	D			D																		I		
	AE 221	Advanced Calculus		D		I	I		I	I																																								
	AE 224	Probability and Statistics		D		I			D		I		D		D		I						D																											I
	AE 280	Fluid Mechanics and Thermal Sciences			I	D	I		D	D	D		D	D	D		D					I	D		D	D			D																					
	ENGL 191	Communication in the Engineering Profession																										D	D	D																			
2B	AE 205	Solid Mechanics 2				D			D	D				I	D		D	D	D		I		I		D	D			D																			D		
	AE 223	Differential Equations and Balance Laws		D					I	I					D																																			
	AE 225	Environmental Building Systems Studio							D	D	D			D	D		D		D				D		D	D		D		D		D	D				I											D		
	AE 265	Structure and Properties of Materials			D									D	D								D		D	I			D	D						I													
	CSE 3 or TE1	Complementary Studies Elective or Technical Elective																																															
	WKRPT 200	Work-term Report				I																							I																					
3A	AE 279	Energy and the Environment			D	D				D													D		D	D		D	D	D		D			D	D				D										
	AE 300	Architectural Engineering Studio 1															D	D	D						D	D		D				D	D																D
	AE 303	Structural Analysis		A		A	D		D	D	D																																							
	AE 353	Soil Mechanics and Foundations			D	D				I	I																																							
	AE 377	Structural Timber Design			A	A	A																D											D															
	WKRPT 300	Work-term Report				D																							D																					
3B	AE 310	Introduction to Structural Design				A	D		D	D	D											A	A											D																
	AE 325	Architectural Engineering Studio 2					A				A			A	A		A	A	A		A		A		A	A		A	A	A		D	D		D	D				D		D	D		A				
	AE 392	Economics and Life Cycle Analysis		I		D	A			I	A		D		I						D		A						I			D			I	D		D	D				A						
	CIVE 507	Building Science and Technology					A		A	A	A			A					A		A					A							A																
	CSE 3 or TE1	Complementary Studies Elective or Technical Elective																																															
	WKRPT 400	Work-term Report				A																							A																					
4A	AE 400	Project Studio 1				A	A		A	A	A		A	A	A		A	A	A		A		A		A	A		A	A	A		A	A		A	A			A			A	A		A	A		A	A
	AE 491	Engineering Law and Ethics																														A	A					A	A	A									
	TE 2	Technical Elective																																															
	TE 3	Technical Elective																																															
	TE 4	Technical Elective																																															
4B	AE 425	Project Studio 2															A		A		A	A	A		A	A		A	A	A		A	A			A		A	A	A		A	A						A
	CSE 6	Complementary Studies Elective																																															
	TE 5	Technical Elective																																															
	TE 6	Technical Elective																																															
	TE 7	Technical Elective																																															
	TE 8	Technical Elective																																															

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Technical Electives																																																
List A - Architectural Engineering Technical Electives																																																
W	AE 301	Building Enclosure Systems																																														
W	AE 315	Building Structural Systems					A							D	D				D						D	D		D				D	D					D	D	D						D	
S	AE 405	Building Performance Measurement Lab					A				A		A								A		A		A	A		A	A	A			A							A						A	
S	AE 450	Building Service Systems				A	A				A						A				A								A				A		A								A				
F,W,S	AE 495	Design Intensive Special Topics in Architectural Engineering																																														
F,S	AE 572	Building Energy Analysis					D			D	D							D	D				D						D								D										
W	AE 573	HVAC Systems, Equipment, and Energy Efficiency				D	D			D	D							D												D							D										
F,W,S	ARCH 570	Special Topics in Building Technology and Environmental					A												A						A	A		A		A		A	A														
W	ME 452	HVAC Load Analysis and Design Fundamentals					A			D	D			D	D		D	D	D		A		A					A				D	A		D	A		D	D	D						A	
List B - Engineering Design Intensive Technical Electives																																																
S	ARCH 463	Integrated Environmental Systems																																														
S	CIVE 413	Structural Steel Design		A	A		A			A	A						A	A	A		A		A							A			A														
S	CIVE 414	Structural Concrete Design				A	A			A	A			A			A	A	A								A			A			A												A	A	A
W	CIVE 415	Structural System Design				A	A						A				A	A			A						A			A			A												A		
W	CIVE 460	Engineering Biomechanics				D									A													A	A					A					D	D							
F,W,S	CIVE 495	Design Intensive Special Topics in Civil Engineering				A	A			A			A	A	A				A		A		A						A				A		A	A										A
W	CIVE 512	Rehabilitation of Structures					A						A				A	A			A						A			A			A												A		
S	CIVE 596	Construction Engineering								A									A											A			A		A								A	A				
List C - Engineering Technical Electives																																																
F,W,S	AE 497	Special Topics in Architectural Engineering																																														
W	CIVE 422	Finite Element Analysis		A	A	A	A		A	A												A	A				A			A	A																
S	CIVE 484	Physical Infrastructure Planning							A	A	A				A			A	A						A	A		A	A			A	A		A	A		A	A	A		A	A		A		
F,W,S	CIVE 497	Special Topics in Civil Engineering																																														
S	CIVE 505	Structural Dynamics		A			A			A			A						A			A								A					A											A		A
List D - Natural Science Technical Electives																																																
F,W	BIOL 130	Introductory Cell Biology																																														
F	BIOL 150	Organismal and Evolutionary Ecology																																														
F,W,S	BIOL 240	Fundamentals of Microbiology			D										D															D														D	D	D
F,W,S	BIOL 273	Principles of Human Physiology 1																																														
W,S	CHE 161	Engineering Biology				I																											I		I										I	I	
F	CHEM 209	Introductory Spectroscopy and Structure																																														
F,W	CHEM 262	Organic Chemistry for Engineering			D	D				D																																			D	D	
W,S	EARTH 221	Introductory Geochemistry			D																				D	D		D		D																
W	EARTH 270	Disasters and Natural Hazards																																														
W	EARTH 281	Geological Impacts on Human Health			D																				D	D		D	D	D																
F,W,S	ENVS 200	Field Ecology																																														
W	KIN 100	Regional Human Anatomy			I																							I	I	I																	I
W	KIN 100L	Regional Human Anatomy Laboratory																																														
W	SCI 207	Physics, the Universe, and Everything																																														
F,W,S	SCI 238	Introductory Astronomy																																														