

2023-2024 Civil Engineering Professional Electives (Total of 15 cr-hrs required)

Updated 5/23/22

	Rubric	Number	Cr Hrs	Title	Offered	Prerequisite	
Design Courses		ECIV 414	3	Steel Design	F odd	ECIV 315 Structures II	
		ECIV 415	3	Design of Masonry Structures	S even	ECIV 315 Structures II	
		ECIV 416	3	Design of Wood and Timber Structures	S odd	ECIV 315 Structures II	
		ECIV 417	3	Heavy Civil Construction Practices	F	ECIV 308	
		ECIV 484	3	Reinforced Concrete Design	F even	ECIV 315 Structures II	
		ECIV 420	3	Earth and Foundation Engineering	S	ECIV 320 Geotechnical Engineering	
		ECIV 425	3	Geotechnical Structures	F	ECIV 320 Geotechnical Engineering	
		ECIV 431	3	Open Channel Hydraulics	F	ECIV 333 Water Resources Engineering	
		ECIV 435	3	Closed Conduit Hydraulics	S	ECIV 333 Water Resources Engineering	
		ECIV 451	3	Highway Pavements	S even	ECIV 350, ECIV 320	
		ECIV 452	3	Traffic Engineering and ITS	F odd	ECIV 350, EGEN 350	
		ECIV 454	3	Transportation Planning	S odd	ECIV 350, EGEN 350	
		ECIV 456	3	Highway Geometric Design	F	ECIV 350, SRVY 230	
		EENV 432	3	Advanced Engineering Hydrology	F	ECIV 333 Water Resources Engineering	
		EENV 434	3	Groundwater Supply and Remediation	S	EGEN 335 Fluid Mechanics or ECIV 337 CE Fluid Mechanics	
		EENV 436	3	Storm Water Management & Engrg.	S	EENV 340 Intro to Envr Engr or EENV 341	
		EENV 443	3	Air Pollution Control	F even	EGEN 335 or ECIV 337 and CHMY 141	
		EENV 445	3	Hazardous Waste Treatment	F odd	EENV 340 Introduction to Environmental Engineering	
		SRVY 474	3	Project Design in Surveying	S odd	SRVY 230 Surveying	
At least two of these.		ECIV 307	3	Constr Estimating and Bidding	F,S	ECIV 202, ECIV 308	
		ECIV 309	3	Building Information Modeling in Construction	F,S	DDSN 131	
		ECIV 311	2	Construction Project Documentation		ECIV 308	
		ECIV 334	3	Heavy Civil Construction Planning & Estimating	F	ECIV 307 or Consent of Instructor	
		ECIV 401	1	Civil Engineering Practice and Ethics	F,S	Junior Standing	
		ECIV 404	3	Heavy Const Equip and Methods	F,S	ETCC 302 or ECIV 320	
		ECIV 405	3	Const Proj Planning Scheduling	F,S	ECIV 308	
		ECIV 406	3	Sustainability in Construction	S	ECIV 308	
		EENV 440	3	Water Chemistry for Environmental Engineers	F	EENV 340 Introduction to Environmental Engineering	
		EGEN 435	3	Fluid Dynamics	S	EGEN 335 Fluid Mechanics or ECIV 337 CE Fluid Mechanics	
		EGEN 415	3	Advanced Mechanics of Solids	F	EGEN 205 Mechanics of Materials	
		EGEN 420	3	Ice & Snow Mechanics	F	EGEN 335 Fluid Mechanics or ECIV 337 CE Fluid Mechanics	
		SRVY 355	3	Surveying Calculations	S even	SRVY 230 Surveying	
		SRVY 361	3	Intro to Legal Principles in Surveying	F even	SRVY 230 Surveying	
		SRVY 362	3	Public Land Survey Systems	F odd	SRVY 230 Surveying	
		SRVY 375	3	Analyt Photo/Remote Sensing	F odd	M 171 Calculus	
		DDSN 245	3	Civil Drafting	F,S	DDSN 131	
		ECIV 490	1-4	Undergraduate Research	F,S,Su		
		ECIV 492	1-4	Independent Study	F,S,Su		
	Max 3 cr		ECIV 498	3	Career Internship (3 cr max)	Su	
					A petitioned course.		
					A course from a completed minor.		
					A course from a prior/concurrent BS/BA degree.		
				A course from a completed Honors program.			

