Civil Engineering

Freshman Year	Credits	
	Fall	Spring
ECIV 101 - Intro To Civil Engineering	1	
CHMY 141 - College Chemistry I & CHMY 142 - College Chemistry I Lab*	4	
M 171Q - Calculus I* or M 181Q - Honors Calculus I	4	
WRIT 101W - College Writing I*	3	
University Seminar - Choose one of the following:	3	
CLS 101US - Knowledge and Community		
COMX 111US - Introduction to Public Speaking (formerly COM 110US)		
HONR 201US - Texts and Critics: Knowledge & Imagination I		
US 101US - First Year Seminar		
BGEN 104US - Business & Entrepreneurship Fundamentals Seminar		
LS 101US - Interdisciplinary Ways of Knowing		
CLS 201US - Knowledge and Community		
Take CLS 201US if > 30 earned credits.		
CHMY 143 - College Chemistry II & CHMY 144 - College Chemistry II Lab		4
M 172 - Calculus II or M 182 - Honors Calculus II		4
PHSX 220 - Physics I with Calculus* or PHSX 240 - Honors Gen & Mod Phys I		4
Choose one of the following:		3
BMGT 205 - Prof Business Communication		
WRIT 201 - College Writing II		
WRIT 221 - Intermediate Tech Writing		
HONR 202IH - Texts and Critics: Knowledge & Imagination II		
ECIV 202 - Applied Analysis		1
Year Total:	15	16

Sophomore Year	Credits	
	Fall	Spring
SRVY 230 - Intro to Surveying for Engineers	3	
EGEN 201 - Engineering Mechanics-Statics*	3	
M 273 - Multivariable Calculus or M 283 - Honors Multivariable Calculus	4	
PHSX 222 - Physics II with Calculus or PHSX 242 - Honors Gen & Mod Phys II	4	
DDSN 131 - Introduction to Drafting and Design	3	
EGEN 202 - Engineering Mechanics -- Dynamics**		3
EGEN 205 - Mechanics of Materials**		3
EGEN 350 - Applied Engineering Data Analysis or STAT 332 - Statistics for Scientists and Engineers		2
M 274 - Introduction to Differential Equation or M 284 - Honors Introduction to Differential Equations		4
ECIV 337 - Civil Engineering Fluid Mechanics**		3
University Core (IS, IH, IA/RA or D)		3
Year Total:	17	18

Junior Year	Credits	
	Fall	Spring
ECIV 312 - Structures I**	3	
ECIV 333 - Water Resources Engineering**	4	
EGEN 310R - Multidisciplinary Engineering Design**	3	
Take one of the following:	3	
BIOB 160 - Principles of Living Systems		
BIOM 103IN - Unseen Universe: Microbes		
ENSC 245IN - Soils		
ERTH 101IN - Earth System Sciences		
GPHY 284 - Intro to GIS Science & Cartog		
University Core (IS, IH, IA/RA or D)	3	
ECIV 308 - Construction Practice**		3
ECIV 315 - Structures II**		3
ECIV 320 - Geotechnical Engineering**		3
ECIV 350 - Transportation Engineering**		3
EENV 340 - Principles of Environmental Engineering**		3
Choose one of the following Engineering Science Elec.:		3
EMAT 251 - Materials Structures and Prop		
EELE 250 - Circuits, Devices and Motors		
EGEN 324 - Applied Thermodynamics		
Year Total:	16	18

Senior Year	Credits	
	Fall	Spring
ECIV 489R - Civil Engineering Design I**	2	
EGEN 330 - Business Fundamentals for Technical Professionals	3	
Professional Electives**	6	
University Core (IS, IH, IA/RA or D)	3	
ECIV 499R - Capstone: Civil Eng Design II**		2
EGEN 488 - Fundamentals of Engineering Exam**		0
Professional Electives**		9
University Core (IS, IH, IA/RA or D)		3
Year Total:	14	14
Total Program Credits:		**128**

* Key courses

** Advanced courses

\+ Design Intensive Course (Minimum of 2 courses required)

Additional requirements: 15 credits of approved professional electives at the 300 level or above. A minimum of 2 courses in civil engineering (i.e., ECIV, EENV, SRVY, EGEN) and not more than 3 courses in any one civil engineering sub-area are required. A maximum of 4 credits total from Individual Problems, Internships and Undergraduate Research may be counted toward professional electives. The professional electives program must contain a minimum of 2 design intensive courses (+)(see the CE flow chart). Students must successfully complete all key courses (*) prior to taking any advanced courses (**) which includes professional electives. A maximum of 3 credit-hours may be included from a completed MSU minor, a prior or concurrent BS/BA degree in another major, or courses in a completed MSU Honors Program, or Internship (max. 3 credits). A student may petition to include other senior or graduate level courses consistent

with the degree program but not listed here (requires Academic Adviser and Department Head approval).

A minimum of 128 credits is required for graduation; 42 of these credits must be in courses numbered 300 and above.

Professional Elective Courses

DDSN 245	Civil Drafting	3
ECIV 307	Construction Estimating and Bidding	3
ECIV 309	Building Information Modeling in Construction	3
ECIV 311	Construction Project Documentation	2
ECIV 334	Heavy Civil Construction Planning & Estimating	3
ECIV 401	Civil Eng Practice and Ethics	1
ECIV 404	Heavy Const Equip and Methods	3
ECIV 405	Construction Project Planning and Scheduling	3
ECIV 406	Sustainability Issues in Construction	3
ECIV 414	Steel Design +	3
ECIV 415	Design of Masonry Structures +	3
ECIV 416	Design of Wood and Timber Structures +	3
ECIV 417	Heavy Civil Construction Practices +	3
ECIV 420	Earth and Foundation Engr +	3
ECIV 425	Geotechnical Structures +	3
ECIV 431	Open Channel Hydraulics +	3
ECIV 435	Closed-Conduit Hydraulics +	3
ECIV 451	Highway Pavements +	3
ECIV 452	Traffic Engineering and ITS +	3
ECIV 454	Transportation Planning +	3
ECIV 456	Highway Geometric Design +	3
ECIV 484	Reinforced Concrete Design +	3
ECIV 490R	Undergraduate Research	1-4
ECIV 492	Independent Study	1-3
ECIV 498	Internship	3
EENV 432	Advanced Engineering Hydrology +	3
EENV 434	Groundwater Supply/Remediation +	3
EENV 436	Stormwater Management & Engineering +	3
EENV 440	Water Chemistry for Envr Engr	3
EENV 443	Air Pollution Control +	3
EENV 445	Hazardous Waste Treatment +	3
EGEN 415	Advanced Mechanics of Solids	3
EGEN 420	Ice and Snow Mechanics	3
EGEN 435	Fluid Dynamics	3
SRVY 355	Surveying Calculations	3
SRVY 361	Intro Legal Princ in Surveying	3
SRVY 362	Public Land Survey System	3
SRVY 375	Analytic Photogrammetry and Remote Sensing	3
SRVY 474	Project Design in Surveying +	3