Course		Sem. Units	a: ability to apply knowledge of mathematics, science, and: a1: mathematics through differential equations	a2: calculus-based physics	a3: chemistry	a4: biology	a5: ≥ four technical areas appropriate to civil engineering	b: ability to design and conduct CE experiments; analyze and interpret	c: ability to design system, component or process in >one CE context &	d: ability to function on multi-disciplinary teams	e: ability to identify, formulate, and solve engineering problems	f: understanding of professional and ethical responsibility, including	g: ability to communicate effectively	h: broad education necessary to understand impact of engineering	i: recognition of the need for, and an ability to, engage in lifelong learning	j: knowledge of contemporary issues	k: ability to use techniques, skills, modern engineering tools for practice	l: understanding of basic concepts in management, business, public policy,
BACHELOR OF SCIENCE IN CIVIL ENGINEERING, 128 UNITS MINIMUM																		
GENERAL EDUCATION, 24 UNITS																		
General education	*eight courses*	24								*i*		*i*	*i*	*i*	*i*	*i*		*i*
MAJOR REQUIRED COURSES, 97-99 UNITS																		
MATH 120	Diff. Calculus	4	*p*								*i*		*i*					
MATH 121	Integ. Calculus	4	*p*								*i*		*i*					
MATH selection	*one course*	3 or 4	*p*								*i*		*i*					
MATH 260	Diff. Equations	4	*p & a*								*i*		*i*					
CHEM 111	Chemistry	4			*p & a*			*i*		*i*			*i*	*i*		*i*		
PHYS 204A	Mechanics	4	*p*	*p & a*				*i*		*i*	*i*		*i*					
PHYS 204B	Elec. & Magnet.	4	*p*	*p*				*i*		*i*	*i*		*i*					
Science selection	*one course*	3 or 4						*i*		*i*	*i*		*i*					
MECH 210	Materials Engr.	3	*p*	*p*	*p*			*p*			*p*							
MECH 320	Dynamics	3	*p*	*p*							*p*							
MECH 322	Thermodynamics	3	*p*	*p*							*p*						*i*	
CIVL 101	Intro. to Civil Engr.	1					*i*			*i*		*i*	*i*		*i*	*i*		*i*
CIVL 130	Surveying	3	*p*				*p*	*i*				*i*					*i*	
CIVL 140	Tran. Pl., Surv., Grap	3	*p*				*p*	*p*	*i*		*p*	*i*	*p*	*i*			*p*	*i*
CIVL 175	Bio. Proc. Envir. Eng	3				*p & a*		*i*		*i*			*i*	*i*		*i*		
CIVL 205	Computer Apps.	2	*p*	*p*									*i*		*i*	*i*	*i*	
CIVL 211	Statics	3	*p*	*p*							*i*	*i*					*i*	
CIVL 302	Engr. Risk & Econ.	3	*p*					*i*			*i*		*p*			*p*		*i*
CIVL 311	Strength of Mat.	4	*p*	*p*					*i*		*p*						*i*	
CIVL 313	Stru. Mech.	4	*p*	*p*			*p*				*p*	*p*					*i*	*i*
CIVL 321	Fluid Mech.	4	*p*	*p*			*p*	*i*	*i*		*p*						*i*	
CIVL 411	Soil & Foundations	4	*p*	*p*			*p*	*p*	*p*	*p*	*p*		*p*			*p*	*p*	
CIVL 415	Reinf. Concrete	4	*p*	*p*	*p*		*p & a*	*p & a*	*p*		*p*		*p*		*p*		*p*	*i*
CIVL 431	Envir. Engr.	4	*p*		*p*	*p*	*p & a*	*p*	*p*	*p*	*p*		*p*	*p & a*	*p*	*p*	*p*	
CIVL 441	Transp. Engr.	4	*p*				*p & a*	*p & a*	*p*		*p & a*		*p*	*p*	*p*	*p*	*p*	*p*
CIVL 461	Water Res. Engr.	3					*p & a*	*p*	*p & a*								*p & a*	
CIVL 495	Prof. Issues in Engr.	3								*p & a*		*p & a*	*p*	*p & a*	*p & a*	*p & a*		*p & a*
CIVL 595	Capstone Des. Projec	3								*p & a*		*p & a*	*p & a*		*p*	*p & a*		*p & a*
CIVL 5##C	Capstone Des. Select	3	*earning outcomes vary depending on selection*						*p & a*		*p & a*		*p & a*				*p & a*	
MAJOR SELECTED ELECTIVE COURSES, 6 UNITS																		
a) ENGINEERING SELECTED ELECTIVE COURSES, 3-6 UNITS Does not include Capstone Design Selection																		
CIVL 551	Foundations Engr.	3	*p*	*p*			*p*				*p*		*p*		*p*		*p*	
CIVL 554	Steel Design	3	*p*	*p*			*p*		*p*		*p*	*p*			*p*	*p*		
CIVL 556	Timber Design	3	*p*	*p*			*p*		*p*		*p*	*p*			*p*		*p*	*p*
CIVL 558 558C	Eq. & Wind Engr.	3	*p*	*p*			*p*		*p*	*p*	*p*	*p*	*p*		*p*	*p*	*p*	*p*
CIVL 561 561C	Hydro & Open Chan	3	*p*	*p*			*p*		*p*		*p*		*p*		*p*		*p*	
CIVL 562 562C	Groundwater Hydrol	3	*p*	*p*			*p*		*p*		*p*		*p*	*p*	*p*	*p*	*p*	
CIVL 567	Pipe. Hydraulics & D	3	*p*	*p*			*p*		*p*		*p*				*p*		*p*	
CIVL 571 571C	Nat. Sys. Wastewater	3	*p*		*p*	*p*	*p*		*p*		*p*		*p*	*p*	*p*			
CIVL 575 575C	Solid/Haz. Waste Ma	3	*p*		*p*	*p*	*p*		*p*		*p*		*p*	*p*	*p*			
CIVL 581	Transpo. Pavements	3					*p*	*p*			*p*	*p*		*p*	*p*		*p*	*p*
CIVL 582	Asphalt Paving Mat.	3			*p*		*p*				*p*			*p*	*p*		*p*	*p*
CIVL 585	Traffic Engr.	3					*p*	*p*			*p*		*p*		*p*		*p*	*p*
CIVL 586 586C	Adv. Transp. Engr, D	3							*p*		*p*		*p*	*p*			*p*	
CIVL 592	Constr. Management	3									*p*			*p*	*p*	*p*		*p*
MECH 308	Finite Element Analy	3	*p*	*p*			*p*				*p*		*p*				*p*	
MECH 338	Heat Transfer	3	*p*	*p*					*p*		*p*							
Any 400/500 MECH course		*various*	*Learning outcomes vary depending on course selected.*															
Any 400 EECE course		*various*	*Learning outcomes vary depending on course selected.*															
b) TECHNICAL SELECTED ELECTIVE COURSE, 0-3 UNITS																		
Select from department approved list		3 or 4	*Learning outcomes vary depending on course selected.*															

Key

introduced
practiced
practiced & assessed