



Bachelor of Science in Civil Engineering†  
Department of Civil Engineering and Engineering Mechanics

Mapping of Courses and Activities to Program Outcomes

Qualitative Quality Function Deployment (QFD) Matrix – Table 1 of 2

Desired Student Outcome	Qualitative Quality Function Deployment (QFD) Matrix – Table 1 of 2													
	Basic Math and Sciences	General Education Requirements	English Composition	ENGR 102 Introduction to Engineering	Engineering Science Electives	CE210 - ENGR Graphics	CE214 - Statics	CE215 - Mechanics of Solids	CE218 - Mechanics of Fluids	CE251 - Surveying	CE301 - Engineering Communications	CE303 - Num. Meth. & Prog.	CE310 - Probability and Statistics in CE	CE323 - Hydraulic Engineering
H = High M = Medium L = Low														
(a) An ability to apply knowledge of mathematics, science, and engineering	H			M	H	M	H	H	H	H	M	H	H	M
(b) An ability to design and conduct experiments, as well as to analyze and interpret data	H			H		M				H	L		H	
(c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	L			H		H				M	M		L	H
(d) An ability to function on multidisciplinary teams	M			H		M				M	H			L
(e) An ability to identify, formulate, and solve engineering problems				H	M	M	H	H	H		M	M	H	M
(f) An understanding of professional and ethical responsibility		L	L	M		L				M	M			
(g) An ability to communicate effectively	M	H	H	M		M	L	L	L	M	H	M		M
(h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context		H	M			L				L	L		L	
(i) A recognition of the need for, and an ability to engage in life-long learning				M		L					M	M		
(j) A knowledge of contemporary issues		H	M	M		L			L		L			
(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice						H				M	M	M	M	M

†Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.



Qualitative Quality Function Deployment (QFD) Matrix – Table 2 of 2

Desired Student Outcome	Legend														
	CE329 - Fluid Mechanics Lab	CE333 - Elem. Struct. Analysis	CE334 - Structural Design in Steel (CETE)	CE335 - Structural Design in Concrete (CETE)	CE343 - Geotechnical Engineering & Design	CE349 - Soils Laboratory	CE363 - Transp. Engineering	CE/CHEE 370R,L - WS & WW Treat Proc	CE389 - Materials Laboratory	CE408A - Issues in Civil Engineering	CE381 - Construction Engineering	CE427 - Computer Appl. in Hydrology (CETE)	CE440 - Foundation Engineering (CETE)	CE466 - Highway & Geometric Design (CETE)	CE408B - Senior Capstone
(a) An ability to apply knowledge of mathematics, science, and engineering	M	H	H	H	H	M	M	H	M	H	H	L	L	M	H
(b) An ability to design and conduct experiments, as well as to analyze and interpret data	M			L	L	H	M		H	H			L	M	H
(c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability			H	H	L		H	M	L	H		H	H	H	H
(d) An ability to function on multidisciplinary teams	M	M	M		L			L		H		M	L		H
(e) An ability to identify, formulate, and solve engineering problems		H	H	M	H		M	M	L	H	M	M	H	M	H
(f) An understanding of professional and ethical responsibility			L		L				M	H	M				H
(g) An ability to communicate effectively	M	L	M		L	L		L	H	H	M				H
(h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context		L			L		M		M	H					H
(i) A recognition of the need for, and an ability to engage in life-long learning			L	L	L				M	M			L		M
(j) A knowledge of contemporary issues			M		L					H			L		H
(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	H	M	H	M	M	L	M	L	M	H	H	H	M	H	H