Form 11/16

Geological Engineering
Course Checklist

Name: _____
Major Declared in (year): _____

FRESHMAN YEAR

Passed ( )	Credit	Grade	**First Semester**
_____	_____	_____	CHEM 112 General Chem. I
_____	_____	_____	MATH 123 Calculus I
_____	_____	_____	ENGL 101 Composition I
_____	_____	_____	GEOE 110 Intro. to Geol. Engineering
_____	_____	_____	#Gen. Ed. Goal 3 Elective _____
_____	_____	_____	#Gen. Ed. Goal 4 Elective _____

Second Semester

_____	_____	_____	CHEM 114 General Chem. II
_____	_____	_____	CHEM 112L Gen. Chem. I Lab
_____	_____	_____	MATH 125 Calculus II
_____	_____	_____	PHYS 211 University Physics I
_____	_____	_____	GEOE 221 Geology for Engineers
_____	_____	_____	CEE 117 Computer Aided Design

SOPHOMORE YEAR

Passed ( )	Credit	Grade	**First Semester**
_____	_____	_____	EM 214 Eng. Mechanics (Statics)
_____	_____	_____	MATH 225 Calculus III
_____	_____	_____	PHYS 213 University Physics II
_____	_____	_____	MEM 201L Surveying for Mineral Engineers
_____	_____	_____	#Gen. Ed. Goal 3 Elective _____

Second Semester

_____	_____	_____	ENGL 279 Tech. Comm. I
_____	_____	_____	EM 321 Mechanics of Materials I
_____	_____	_____	GEOL 212 Mineralogy and Crystallography
_____	_____	_____	MATH 321 Differential Equations
_____	_____	_____	#Gen. Ed. Goal 4 Elective _____

JUNIOR YEAR

Passed ( )	Credit	Grade	**First Semester**
_____	_____	_____	GEOL 331 Stratigraphy and Sedimentation
_____	_____	_____	GEOL 341 IgMet Petrology
_____	_____	_____	CEE 346 Geotechnical Engineering I
_____	_____	_____	MET 320 Met. Thermodynamics
_____	_____	_____	ENGL 289 Tech. Comm. II

Second Semester

_____	_____	_____	GEOL 322 Structural Geology
_____	_____	_____	*GEOE 324 Engineering Geophysics I
_____	_____	_____	EM 331 Fluid Mechanics
_____	_____	_____	GEOL 416 Intro. to GIS
_____	_____	_____	MEM 302 Mineral Economics and Finance

SENIOR YEAR

Passed ( )	Credit	Grade	**First Semester**
_____	_____	_____	*GEOE 466 Eng. and Environ. Geology
_____	_____	_____	*GEOE 475 Ground Water
_____	_____	_____	Approved Elective_____
_____	_____	_____	*GEOE 464 Geol. Eng. Design Project I
_____	_____	_____	Professional Elective _____

Second Semester

_____	_____	_____	MEM 304 Rock Mechanics I
_____	_____	_____	Professional Elective _____
_____	_____	_____	*GEOE 461 Petrol. Drilling & Prod. Eng.
_____	_____	_____	*GEOE 465 Geol. Eng. Design Project II
_____	_____	_____	#Upper-Level Hum./SS. Elective _____

SUMMER

_____	_____	_____	*GEOE 410 Engineering Field Geology

* A grade of "C" or better is required in these courses for graduation with a Geological Engineering B.S.

\# Humanities and Social Sciences have specific requirements, see catalog for details

GEOE Elective Guidelines
(Version 1: 9/30/2015)

Approved Electives (3 credits required):

The purpose of the approved elective is to allow a student to gain knowledge that will support their chosen area of expertise through a course that may or may not have significant engineering content. Commonly, students will enroll in a GEOE or GEOL course, co-op credits, or other advisor-approved courses to satisfy these three credits. All of the courses listed in the "Professional Elective" list below will also satisfy the approved elective requirement, but courses cannot be double-counted.

Professional Electives (6 credits required):

Professional elective courses must contain significant engineering content. The list below includes courses that satisfy the GEOE professional elective requirement. Students may take a course that is not on the list if it is approved by your advisor (including 600-level graduate courses). All 300 and 400 level engineering courses in the Petroleum Systems Minor are also eligible to use as Professional Electives.

Prefix	Number	Course Title	Credits
GEOE	412/512	Science and Engineering Field Applications: Petroleum Field Camp	(0-3) 3
GEOE	412/512	Science and Engineering Field Applications: Environmental Engineering Field Camp	(0-3) 3
GEOE	421/521	Aqueous Geochemistry	(3-0) 3
GEOE	425/525 (L)	Engineering Geophysics II/Lab	(2-1) 3
GEOE	467/567	Introduction to Geomechanics	(3-0) 3
GEOE	462/562 (L)	Well Log Analysis	(2-1) 3
GEOE	482/582 (L)	Applied Geomorphology/Lab	(2-1) 3
CEE	325	Introduction to Sustainable Design	(3-0) 3
CEE	326	Environmental Engineering I	(3-0) 3
CEE	327 (L)	Environmental Engineering II/Lab *****	(2-1) 3
CEE	337	Engineering Hydrology	(3-0) 3
CEE	347	Geotechnical Engineering II	(3-0) 3
CEE	425/525	Sustainable Engineering	(3-0) 3
CEE	426/526	Environmental Engineering Unit Operations and Processes	(3-0) 3
CEE	427/527	Environmental Engineering Biological Process Design	(3-0) 3
CEE	428	Oil and Gas Development and the Environment	(3-0) 3
CEE	437/537 (L)	Watershed and Floodplain Modeling/Lab *****	(2-1) 3
CEE	447/547	Foundation Engineering	(3-0) 3
CEE	448/548	Applied Geotechnical Engineering	(3-0) 3
MEM	305	Introduction to Explosives Engineering	(3-0) 3
MEM	307	Mineral Exploration and Geostatistics	(3-0) 3
MEM	405	Mine Permitting and Reclamation	(3-0) 3
MEM	415/515	Advanced Mining Geotechnical Engineering $^{\Psi}$	(3-0) 3
MEM	420/520	Advanced Tunneling and Underground Excavation $^{\Psi}$	(3-0) 3
MEM	425/525	Advanced Rock Mechanics $^{\Psi}$	(3-0) 3
MEM	430/530	Resource Industry Mergers and Acquisition	(3-0) 3
MEM	433/533 (L)	Computer Applications in Geoscience Modeling/ Lab	(3-1) 4
MEM	435/535	Resource Industry Finance and Accounting	(3-0) 3
MEM	445/545	Advanced Geostatistics and Grade Estimations *****	(3-0) 3
MEM	450/550	Rock Slope Engineering $^{\Psi}$	(3-0) 3
MEM	455/555	Rock Slope Engineering II *****$^{\Psi}$	(3-0) 3
MEM	480/580	Advanced Explosives and Blasting *****	(3-0) 3

***denotes courses whose prerequisite is also on this list and would be taken as a pair.**
$^{\Psi}$denotes courses that have MEM 304 – Rock Mechanics as a prerequisite (typically taken during the spring semester of senior year).