

SEM	CR	EVEN B.S. Degree: Energy Block Diagram 2015-16					
Spr	16	Option Course III -3- or Technical Elective II -3- *	MCEN 4131 -3- Air Pollution Control (fluid mechanics) #	CVEN 4333 -3- Engineering Hydrology (prob&stat, fluids) #	EVEN 4434 -4- Environmental Engineering Design (CVEN 3414) #	Technical Elective III -3- or Senior thesis *	
Fall	17	Option Course II MCEN 3017 (F) or ECEN 3010(F,S) -3- Circuits & Elec (APPM 2360, PHYS 1140)	Air or Earth Science Lab or Field course -3-	Free Elective -2-	EVEN 4464 -3- Env Engrg Processes (Pre-req or Co-req CVEN3414 & fluids) #	Technical Elective II -3- or Option Course III -3- or Senior thesis	H&SS Elective V -3- upper division
Spr	15	Option Course I MCEN 3032- 3- Thermo 2 (MCEN 3012 or GEEN 3852 & MCEN 3021)	EVEN 4424 -3- Env Organic Chemistry (CHEN1211, 1221) #	Probability & Statistics -3- (calc 2 or dif eq or CHEN1310+dif eq)	EVEN 4484 -3- Intro to Environ Microbiology (CHEN1211, calc 3) #	Heat Transfer -3- (Fluids; Thermo for MCEN; CHEN2120+GEEN 1300 for CHEN)	
Fall	16	Engineering Economics -3-	EVEN 4404 -3- Water Chemistry EVEN 4414 -1- Water Chem Lab (CVEN3414) #	Fluid Mechanics MCEN 3021 -3- (solid mech course and dif. Eq.as a pre or co req)		Thermodynamics MCEN 3012 or GEEN 3852 -3- (calc 3)	Communications Course -3- (Jr. standing)
Spr	16	APPM 2360 -4- Introduction to Differential Equations & Linear Algebra (APPM 1360 or MATH 2300)	CVEN 4834 -3- Sustainability Principles for Engineers #		CVEN 3414-3- Fundamentals of Env. Engineering (CHEN 1211, CHEM 1221, & APPM 1360)	CHEN 2120 -3- Material and Energy Balances (CHEN1211, CHEN 1310) **	H&SS Elective IV -3- upper division
Fall	15	APPM 2350 -4- Calculus III for Engineers (APPM 1360 or MATH 2300)	PHYS 1120 -4- PHYS 1140 -1- Gen.Phys/Lab (PHYS 1110 & co-req MATH 2300 or APPM 1360)	Solid Mechanics course -3- (CVEN:PHYS 1110 & co-req calc III; MCEN: pre-req of calc II)			H&SS Elective III -3- lower division
Spr	17	APPM 1360 -4- Calculus II for Engineers (APPM 1350 or MATH 1300)	PHYS 1110 -4- Gen. Physics I (prereq or co-req APPM 1350 or MATH 1300)		CHEN 1310 -3- Introduction to Computing (prereq or co-req calculus 1)	Technical Elective I -3- *	H&SS Elective II -3- lower division
Fall	16	APPM 1350 -4- Calculus I for Engineers	CHEN 1211 -3- Gen Chem for Engineers (coreq CHEN 1221) \$	CHEM 1221 -2- General Chem Lab (coreq CHEN 1211) \$	GEEN 1400 -3- Engineering Projects	EVEN 1000 -1- Introduction to Environmental Engineering #	H&SS Elective I -3- lower division

- Courses marked thus are offered only in SEMESTER shown.

\$ - CHEN 1211 & CHEM 1221 must be taken concurrently.

() - Prerequisite or Co-requisite required before taking course listed.

**CHEN 2120-A grade of C or higher is needed to continue into CHEN courses.

Solid Mechanics options: CVEN 2121 Analytic Mechanics I (F,S; Phys1110, co-req APPM 2350); GEEN 2851 Statics for Engr (PHYS 1110, APPM 2350), MCEN 2023 Statics & Structures (F; APPM 1360);

Fluid Mechanics options: MCEN 3021 Fluid Mechanics (F; APPM 2360, Solid Mech),

Thermodynamics options: GEEN 3852 Thermo for Engrs (APPM2350), MCEN 3012 Thermodynamics (F; reqd air quality option; APPM 2350)

Heat Transfer options: CHEN3210 Chem Eng Heat Transfer (F; CHEN2120, Fluids, COEN 1300), MCEN 3022 Heat Transfer (S; Thermo, Fluids)

*Tech electives: 3 cr can be lower division, others must be 3000 or 4000 level; one tech elective (3cr) must relate to earth science such as geology courses, engineering geology, CVEN Geotech I, etc.

Air/Earth Lab Field course such as: ATOC 1070 Weather & Atmos Lab, CVEN 3708 Geotech Eng, EVEN 4100 Env Sampling, GEOG 4411 Methods of Soil Analysis, GEOL 2700-2 Intro to Field Geol, GEOL 3010 Intro to Mineralogy, GEOL4716 Env Field Geol. If course is less than 3 credits, remaining credits must be upper division tech electives.

Probability and Statistics options: APPM 4570 Statistical Methods (F,S; APPM 1360), CHEN 3010 Appl Data Analysis (F, CHEN1310, APPM 2360), CVEN 3227 Probability, Statistics, & Decision (S, APPM 2360)

Engineering Economics: CVEN 4147 Civil Engineering Systems (F), EMEN 4100 Business Methods & Economics for Engineers

Communications Course: GEEN 3000 Prof Comm Engrs, HUEN 3100 Humanities for Engrs, WRTG 3030 Writing Sci & Society, WRTG 3035 Tech Comm & Design; PHYS 3050 Wrtg for Phys