

ENGINEERING CONTENT

REQUIRED ENGR COURSES FOR EACH CONCENTRATION

REQUIRED FOR ALL STUDENTS		ME	ECE	ENGINEERING (E)						
ENGR	DESIGN STREAM			E: BIO	E: C	E: D	E: ROBO	E: SELF		
ENGR1125 ISIM	ENGR1200 DESNAT	ENGR2320 MECH SOLIDS	*ENGR2410 SIGSYS	12 CREDITS OF COURSEWORK APPROPRIATE TO BIO-ENGINEERING	ENGR2510 SOFTDES	8 CREDITS APPROVED ADVANCED DESIGN COURSES; 4 CREDITS MAY BE DESIGN RS	4 CR COURSE-WORK IN SOFTWARE	5-6 COURSES THAT COMPRISE A COHERENT CONCENTRATION		
ENGR2110 POE	ENGR2250 UOCD	*ENGR2340 DYNAMICS	ENGR2420 CIRCUITS		ENGR3520 FOCs				12 CREDITS APPROVED COURSEWORK	4 CR COURSE-WORK IN MECH ENGR
		ENGR2350 THERMO	ENGR2510 SOFTDES		ENGR3525 SOFTSYS OR APPROV. SUB					
		ENGR3310 TRANSPORT PHENO-MENA	ENGR3410 COMPARCH		8 ADDTL CREDITS IN COMPUTING	ENGR3390 FUN ROBO OR ENGR3590 COMP ROBO	4 ADDL RELATED CREDITS			
		ENGR3330 MECH DESIGN	ENGR3415 DSP OR ENGR3420 ANA&DIG							
		ADDITIONAL ME Elective (4credits) (see catalog)	ADDITIONAL ECE Elective (4credits) (see catalog)							

TOTAL ENGR CREDITS ≥ 46

MTH3120 or MTH3150 or MTH3170 (PDEs or Num Meth & Sci Comp) or Nonlinear Dynamics & Chaos	MTH2110 Discrete Math	4 CR ADV MTH	4 CR ADV BIO (see catalog)	4 CR E: Bio Elective (see catalog)	MTH2110 Discrete Math	MTH2110 or MTH3120 or MTH3170 (Discrete Math or PDEs or Nonlinear Dynamics & Chaos)
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MATH/SCIENCE

REQUIRED FOR ALL STUDENTS

MTH1111 MODSIM	SCI1111 MODSIM
*VECTOR AND/OR MULTIVARIABLE CALCULUS; DIFFEQ; LIN ALG	BIOLOGY
PROBSTAT	*PHYSICS FOUNDATION

SEE NEXT PAGE FOR LIST OF COURSES THAT CAN SATISFY THE MATH & SCIENCE REQUIREMENTS

REQ'D MATH &/OR SCIENCE FOR EACH CONCENTRATION

TOTAL MTH/SCI CREDITS ≥ 30
AT LEAST 10 MUST BE MTH

AHS/E!

REQUIRED FOR ALL STUDENTS

AHS FOUNDATION	AHSE 1515 PRODS& MKTS
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AHS CONCENTRATION

12 credits of AHS coursework
-OR-
8 credits of AHS + AHSE3190 Prepstone + AHSE4190 Capstone
-- OR --

Entrepreneurship Concentration

12 credit sequence of E! courses—at least 4 must come from either or combination of Iterate &/or Launch (see catalog for detailed options)

TOTAL AHS CREDITS ≥ 12
TOTAL OF AHS +E! ≥ 28

INTEGRATED COURSES

QEA I & QEA II (16 TOTAL CREDITS)
(8 MTH, 4 SCI, 4 ENGR distributed totals)
Content Covered:
MTH2210 LIN I
MTH2220 LIN II
PHYSICS FOUNDATION
ENGR2410 SIG SYS
ENGR2340 DYNAMICS

Courses and requirements covered in QEA I&II are marked on the chart with an asterisk *.

TOTAL CREDITS NEEDED FOR GRADUATION: 120

FOUNDATION MATH CONTENT REQUIREMENTS	SATISFIES PROBSTAT REQUIREMENT	SATISFIES BIO REQUIREMENT	SATISFIES CHEM/MATSCI REQUIREMENT	SATISFIES PHYSICS REQUIREMENT	SATISFIES DESIGN DEPTH REQUIREMENT
2 CR VECTOR CALCULUS AND/OR MULTIVARIABLE CALCULUS: MTH2220 LIN II OR DES ALT	MTH2130 PROBSTAT	SCI1210 PRINCIPLES OF MODERN BIO W/ LAB	SCI1310 INTRO TO CHEMISTRY W/LAB	SCI1121 ELECTRICITY AND MAGNETISM	ENGR3240 QUANTITATIVE ENGINEERING DESIGN
2 CR DIFFERENTIAL EQUATIONS: MTH2210 LIN I OR DES ALT	MTH2131/ENGR3531 DATA SCIENCE	SCI 1220 HUMAN GENETICS AND GENOMICS W/LAB	SCI1399 SPECIAL TOPICS IN CHEMISTRY	SCI1130 MECHANICS	ENGR3250 INTEGRATED PRODUCT DESIGN
2 CR LINEAR ALGEBRA: MTH2210 LIN I OR MTH2220 LIN II OR DES ALT	MTH2132/SCI2032 BAYESIAN INFERENCE AND REASONING	SCI1230 THINK LIKE A BIOLOGIST W/LAB	SCI1410 OR SCI1410A MATERIALS SCIENCE & SOLID STATE CHEMISTRY W/LAB	SCI1199 FOUNDATION TOPIC IN PHYSICS	ENGR3252 TECHNOLOGY, ACCESSIBILITY, AND DESIGN
	MTH2133/ENGR3533 COMPUTATIONAL BAYESIAN STATISTICS	SCI1240 DESIGNING BETTER DRUGS W/LAB	SCI2310 ENVIRONMENTAL ANALYSIS AND SCIENCE	SCI3130 ADVANCED CLASSICAL MECHANICS (WITH INSTRUCTOR PERMISSION)	ENGR3260 DESIGN FOR MANUFACTURING
	MTH2134/ENGR2134 REGIONAL ANALYSIS IN DEVELOPMENT	SCI1250 SIX MICROBES THAT CHANGED THE WORLD W/LAB			ENGR3270 REAL PRODUCTS, REAL MARKETS
	MTH2135/ENGR3635 NEUROTECHNOLOGY, BRAINS AND MACHINES	SCI1260 THE INTERSECTION OF BIOLOGY, ARTS, AND TECHNOLOGY			ENGR3290 AFFORDABLE DESIGN AND EN- TREPRENEURSHIP
	DESIGNATED ALTERNATIVE	AN INTERMED OR ADV BIOLOGY COURSE IF STUDENT RECEIVED A SCORE OF 4 OR 5 ON AP BIO EXAM			APPROVED ENGR3299 SPECIAL TOPICS IN DESIGN ENGINEERING COURSE
		AN INTERMED OR ADV BIOLOGY COURSE IF STUDENT RECEIVED A SCORE OF 3 ON AP BIO EXAM AND PASSES ORAL ASSESSMENT			

Special Topics courses (numbered XX99) that meet specific degree and/or program requirements are so noted in the [Semester Course Offerings List](#). Questions about a particular course should be directed to the instructor on record or the Registrar's Office.