

## Four Year Road Map: Structural Systems Option

This Road Map is a tool to assist you and your advisor in planning your academic career. Use it along with the Curriculum Sheet for your major, your DARS report, the following checklist, and the Timetable. Your specific program of study could, and probably will, look different. You need to customize the Road Map to fit your situation, and consult with your advisor about the best path for you.

Year 1 – Fall Semester Course	Credits
Math 221 – Calculus and Analytic Geometry	5
Social Science (See I.E.4)	3
Chemistry 109 – Advanced General Chemistry*	5
EPD 155 - Basic Communication (see I.C.)	2
	15

Year 1 – Spring Semester Courses	Credits
Math 222 – Calculus and Analytic Geometry	5
Biological Science (See I.F.)	5
EMA 201 - Statics	3
Economics 101 - Principals of Microeconomics	4
	17

Year 2 – Fall Semester Courses	Credits
Math 234 – Calculus - - Functions of Several Variables	3
Computer Science 310 - Problem Solving Using Computers	3
BSE 249 - Engineering Principles for Biological Systems	3
Chemistry 341 – Introductory Organic Chemistry	3
EMA 202 – Dynamics	3
	15

Year 2 – Spring Semester Courses	Credits
ME 170 – Civil Engineering Graphics	2
BSE 356 - Sustainable Residential Construction	3
EMA 303 – Mechanics of Mat.	3
Physics 202 - General Physics	5
Statistics 224– Introductory Statistics for Engineers	3
	16

Year 3– Fall Semester Courses	Credits
BSE 364 – Engineering Properties of Food and Biological Materials	3
CEE 340 – Structural Analysis I	3
CEE 310 - Fluid Mechanics	3
ISYE 313 – Engineering Economic Analysis	3
BSE 351 - Structural Design for Agricultural Facilities	3
CEE 251 – Engineering Spatial Measurements	2
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Year 3 – Spring Semester Courses	Credits
EPD 397 - Technical Communications (see I.C.)	3
Technical Elective (See VI.D.)	3
BSE 365 – Measurements and Inst. for Biological Systems	3
Technical Elective (See VI.D.)	3
Ag& Life Sciences (See VI.D.)	3
ME 361-Thermodynamics	3
	18

Year 4– Fall Semester Courses	Credits
BSE 509 – Biological Systems Engineering Senior Design	3
Technical Elective (See VI.D.)	3
Breadth Requirement (See VI.D.)	3
Ethnic Studies/International. (See I.E.2 & I.H.)	3
BSE 409 Career Management for Engineers	1
Technical Elective (See VI.D.)	3
	16

Year 4 – Spring Semester Courses	Credits
Technical Elective (See VI.D.)	3
Humanities (See I.E.3)	3
Technical Elective (See VI.D.)	3
Technical Elective (See VI.D.)	2
Humanities (See I.E.3.)	3
	14

**Notes:** Need 128 credits to complete degree. If Chemistry 103 & 104 is taken in place of Chemistry 109, it is suggested to take Chemistry 103 in Fall semester and Chemistry 104 in Spring semester of year 1.



**2006-07 Course Requirements for BSE Degree – Courses Common to All Option Areas**

All courses in this table must be included in calculations used to check the 2.35 GPA program entrance requirement

Crds	Sem/Yr Taken	Grade	Requirement	Course Taken to Meet Requirement
			MATH 221 (5) Calculus and Analytic Geometry	
			MATH 222 (5) Calculus and Analytic Geometry	
			MATH 234 (3) Calculus—Functions of Several Variables	
			Intro Statistics for Engineers (STAT 224 (3) or 324 (3))	
			Chemistry (Chem 109 (5) or Chem 103 (5) and Chem 104 (4)	
			Chem 341 (3) Introductory Organic Chemistry	
			Comp Sci 310 (3) Problem Solving.	
			Agr. and Life Science Course (min. of 3 crds from required list)	
			Biological Sciences (min. 5 crds from required list)	
			E M A 201 (3 crds) Statics	
			Physics 202 (5) General Physics	
			Engineering Graphics Course ( M E 170 (2) or M E 231 (2))	
			Thermodynamics (ME 361 (3) or CBE 211(3))	
			Engineering Economics Course (ISYE 313 (3) or ME 314(3))	
			BSE 249 (3) Engr. Principles for Biological Systems or CBE 250 (3)	
			BSE 364 (3) Engr. Properties of Food and Biological Materials	
			BSE 365 (3) Measurements and Instrumentation for Biol Systems	
			BSE 409 (1) Career Management for Engineers	
			BSE 509 (3) BSE Senior Design	

**2006-07 Course Requirements for BSE Degree – Structural Systems Engineering Specialization**

All courses in this table must be included in calculations used to check the 2.35 GPA program entrance requirement

Crds	Sem/Yr Taken	Grade	Requirement	Course Taken to Meet Requirement
			BSE 351 (3) Structural Design for Agricultural Facilities	
			BSE 356 (3) Sustainable Residential Construction	
			Fluid Mechanics Course (CIV ENGR 310 (3) or M E 363 (3))	
			Surveying Course (BSE 201 (1) or CIV ENGR 251 (2))	
			CIV ENGR 340 (4) Structural Analysis I	
			EMA 202 (3) Dynamics	
			EMA 303 (3) Mechanics of Materials	
			BSE Breadth Course (367 (3), 372 (2), 441 (3), 472 (3), 473 (2), 475 (3), 476 (3), 542 (3) or 571 (3))	
			Technical Elective	
			Technical Elective	
			Technical Elective	
			Technical Elective	
			Technical Elective	
			Technical Elective	
			Technical Elective	
			Technical Elective	
			Technical Elective	
<b>TOTAL– Minimum 42 Credits Required</b>				

**2006-07 Course Requirements for BSE Degree – Structural Systems Technical Electives**

The following courses can be used to meet technical elective requirements for the Structural Systems Engineering specialization

Area	Course	Area	Course
Structural Engineering	CIV ENGR 320 (3) Environmental Engineering	General	INTEREGR 160 (3) Intro to Engr. Design (for Freshman only)
	CIV ENGR 330 (4) Soil Mechanics		BSE 299 (3 max) Independent Study (requires approval of BSE Undergraduate Instruction and Program Committee)
	CIV ENGR 440 (3) Structural Analysis II		BSE 399 (2 max per semester, 3 total) Coordinative Internship/Cooperative Education
	CIV ENGR 442 (3) Wood Structures I		Up to 6 credits of math, science, statistics or computer science courses that are designated "advanced", or engineering courses with a 300 or greater course number
	CIV ENGR 445 (3) Steel Structures I		
	CIV ENGR 447 (3) Concrete Structures I		
	CIV ENGR 530 (3) Seepage and Slopes.		
	CIV ENGR 531 (3) Retaining Structures		
	CIV ENGR 532 (3) Foundations		
	EMA 405 (3) Practicum in Finite Elements		
	EMA 506 (3) Advanced Mechanics of Materials I		
	Construction Management	CIV ENGR 492 (3) Integrated Project Estimating and Scheduling	Biological Systems Engineering
CIV ENGR 496 (3) Electrical Systems for Construction		BSE 372 (2) On-Site Waste Water Treatment	
CIV ENGR 497 (3) Mechanical Systems for Construction		BSE 441 (3) Rheology of Foods & Biomaterials	
CIV ENGR 498 (3) Construction Project Management		BSE 472 (3) Sediment & Bio-Nutrient Engr. & Mgmt.	
No more than one course from the School of Business		BSE 473 (2) Irrigation and Drainage System Design	
Facilities Management	I S Y E 315 (3) Production Planning and Control	BSE 475 (3) Engr Principles-of Ag Machinery	
	I S Y E 323 (3) Operations Research-Deterministic Modeling	BSE 476 (3) Engr Principles of Off-Road Vehicles	
	I S Y E 510 (3) Facilities Planning	BSE 542 (3) Food Engineering Operations	
		BSE 571 (3) Small Watershed Engineering	