BS Chemical Engineering/MS Bioengineering (thesis/non-thesis options) [153 hrs]

The following plan contains all the general education, foundational engineering and core chemical engineering requirements for your BS Chemical Engineering degree (129 credit hours), and the additional requirements for the MS Bioengineering degree (30 hrs). Up to 6 hours of graduate classes (taken in the 4th year) will count to fulfill your CHE undergraduate elective requirements. See additional general education requirements (POLS, HIST) below the table, which have more flexibility in terms of which semester you can take them in. Always be sure to consult with the academic advisor about completion of all degree plan requirements.

ENGR-1110 Engineering Seminar ENGR-1320 or 1340 Biohspired Des. or Intro. Engineering Design ENGR-1330 Comp Thinking/Data Sci ENGR-1330 Comp Thinking/Data Sci MATH-1451 Calculus I CHEM-1307/1107 Principles of Chemistry I ENGL-1301 Essentials of College Rhetoric Second Year Fall Semester (15 hrs) Fall Semester (15 hrs) CHE-2310 Intro. Chemical Processes CHE-2321 Chemical Engineering Thermodynamics I CHEM-1308/1108 Principles of Chemistry II CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Engineering Thermodynamics II CHE-3326 Exposition of Technical Information CHE-3327 Chemical Engineering Thermodynamics II CHE-3328 Chemical Engineering Thermodynamics II CHE-3328 Chemical Engineering Thermodynamics II CHE-3326 Chemical Engineering Thermodynamics II CHE-3327 Engineering Experimentation CHE-3328 Chemical Engineering Experimentation CHE-3329 Engineering Experimentation CHE-3330 Computations/Simulations in Chem Eng. CHE-3328 Engineering Experimentation CHE-3330 Engineering Beconomic Analysis Fourth Year Fall Semester (13 hrs) Spring Semester (11 hrs) CHE-4353 Process Control CHE-4353 Process Safety CHE-420 Design II BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5300*) BIOE core/CHE elective (e.g., CHE-5300*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	First Year (Foundational Engineering Core)	
ENGR-1330 Comp Thinking/Data Sci MATH-1451 Calculus I CHEM-1307/1107 Principles of Chemistry I ENGL-1301 Essentials of College Rhetoric ENGL-1302 Advanced College Rhetoric ENGL-1301 Essentials of College Rhetoric Second Year Fall Semester (15 hrs) CHE-2321 Chemical Engineering Thermodynamics I CHE-315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHEM-3305/3105 Organic Chemistry I PHYS-2401 Principles of Physics II CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Engineering Thermodynamics II CHE-3326 Heat Transfer CHE-3326 Heat Transfer CHE-3327 Engineering Experimentation CHE-3328 Chemical Engineering Experimentation CHE-3329 Engineering Experimentation CHE-3329 Engineering Experimentation CHE-3329 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) Spring Semester (11 hrs) CHE-4353 Process Control CHE-4353 Process Safety CHE-4232 Unit Operations Lab CHE-4232 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5305*) BIOE core (5000-level) BIOE core (5000-level) BIOE core (5000-level) BIOE core (5000-level) BIOE elective (5000-level)	Fall Semester (15 hrs)	Spring Semester (17 hrs)
MATH-1451 Calculus I CHEM-1307/1107 Principles of Chemistry I PHYS-1408 Principles of Physics I ENGL-1301 Essentials of College Rhetoric ENGL-1301 Essentials of College Rhetoric Second Year Fall Semester (15 hrs) CHE-2310 Intro. Chemical Processes CHE-2321 Chemical Engineering Thermodynamics I MATH-2450 Calculus III CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHEM-1308/1108 Principles of Physics II MATH-3350 Advanced Math for Engineers I CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Engineering Thermodynamics II CHE-3323 Chemical Engineering CHE-3324 Hass Transfer OPerations CHE-3325 Fluid Mechanics CHE-3326 Heat Transfer CHE-3327 Transport Lab CHE-3328 Engineering Experimentation CHE-3328 Engineering Experimentation CHE-3329 Engineering Experimentation CHE-3329 Engineering Experimentation CHE-4372 Engineering Experimentation CHE-4353 Process Control CHE-4353 Process Control CHE-4252 Unit Operations Lab CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5300 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) Spring Semester (9 hrs) BIOE core (5000-level) BIOE core (5000-level) BIOE core (5000-level) BIOE elective (5000-level) BIOE elective (5000-level)	ENGR-1110 Engineering Seminar	ENGR-1320 or1340 Bio-inspired Des. or Intro. Engineering Design
CHEM-1307/1107 Principles of Chemistry I ENGL-1301 Essentials of College Rhetoric Second Year Fall Semester (15 hrs) CHE-2310 Intro. Chemical Processes CHE-2321 Chemical Engineering Thermodynamics I CHEM-1308/1108 Principles of Chemistry II CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHE-3306 Exposition of Technical Information PHYS-2401 Principles of Physics II Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3332 Chemical Engineering Thermodynamics II CHE-3332 Chemical Engineering Thermodynamics II CHE-3332 Chemical Engineering Thermodynamics II CHE-3335 Computations/Simulations in Chem Eng. CHE-3336 Computations/Simulations in Chem Eng. CHE-3330 Engineering Experimentation CHE-3330 Engineering Experimentation CHE-3330 Engineering Experimentation CHEM-43xx/41xx Chemistry Elective Fall Semester (13 hrs) Spring Semester (11 hrs) CHE-4359 Process Control CHE-4359 Process Safety CHE-4322 Unit Operations Lab CHE-4322 Unit Operations Lab CHE-4322 Unit Operations Lab CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5305*) BIOE core/CHE elective (e.g., CHE-530	ENGR-1330 Comp Thinking/Data Sci	ENGR-2392 Engineering Ethics
ENGL-1301 Essentials of College Rhetoric Second Year Fall Semester (15 hrs) CHE-2310 Intro. Chemical Processes CHE-2321 Chemical Engineering Thermodynamics I CHEM-1308/1108 Principles of Chemistry II CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Physics II CHEM-3305 Advanced Math for Engineers I CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3325 Chemical Engineering Thermodynamics II CHE-3326 Heat Transfer CHE-3326 Transport Lab CHE-3327 Engineering Experimentation CHE-3327 Engineering Experimentation CHE-3328 Engineering Experimentation CHEM-43304/1xx Chemistry Elective Fall Semester (13 hrs) CHE-4353 Process Control CHE-4353 Process Control CHE-4232 Unit Operations Lab CHE-4232 Unit Operations Lab CHE-4230 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core (5000-level, e.g. CHE-5310*) BIOE core (5000-level) BIOE elective (5000-level)	MATH-1451 Calculus I	MATH-1452 Calculus II
Second Year	CHEM -1307/1107 Principles of Chemistry I	PHYS-1408 Principles of Physics I
Fall Semester (15 hrs) CHE-2310 Intro. Chemical Processes CHE-2321 Chemical Engineering Thermodynamics I MATH-2450 Calculus III CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHE-2306 Exposition of Technical Information PHYS-2401 Principles of Physics II MATH-3350 Advanced Math for Engineers I CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) Spring Semester (14 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3325 Computations/Simulations in Chem Eng. CHE-3326 Heat Transfer CHE-3327 Engineering Experimentation CHE-3327 Engineering Experimentation CHE-4372 Engineering Experimentation CHEM-4372 Engineering Experimentation CHEM-4372 Engineering Experimentation CHEM-4353 Process Control CHE-4356 Process Safety CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5300 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) Spring Semester (9 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level)	ENGL-1301 Essentials of College Rhetoric	ENGL-1302 Advanced College Rhetoric
CHE-2310 Intro. Chemical Processes CHE-2321 Chemical Engineering Thermodynamics I MATH-2450 Calculus III CHEM-1308/1108 Principles of Chemistry II CHEM-3305 Exposition of Technical Information PHYS-2401 Principles of Physics II MATH-3350 Advanced Math for Engineers I CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3326 Heat Transfer CHE-3321 Mass Transfer Operations CHE-3326 Transport Lab CHE-3327 Engineering Experimentation CHE-4372 Engineering Experimentation CHEM-4374 Engineering Experimentation CHEM-4374 Engineering Experimentation CHEM-4375 Process Control CHE-4356 Process Safety CHE-4356 Process Safety CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level)	Second Year	
MATH-2450 Calculus III CHE-3315 Fluid Mechanics CHEM-1308/1108 Principles of Chemistry II CHEM-3306 Exposition of Technical Information PHYS-2401 Principles of Physics II MATH-3350 Advanced Math for Engineers I CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3326 Heat Transfer CHE-3341 Mass Transfer Operations CHE-3305 Computations/Simulations in Chem Eng. CHE-3305 Computations/Simulations in Chem Eng. CHE-3330 Engineering Material Science CHEM-4372 Engineering Experimentation CHEM-4330 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) Spring Semester (11 hrs) CHE-4356 Process Safety CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5363*) BIOE core/CHE elective (e.g., CHE-5363*) BIOE core/CHE elective (e.g., CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) BIOE elective (5000-level)	Fall Semester (15 hrs)	Spring Semester (16 hrs)
CHEM-1308/1108 Principles of Chemistry II PHYS-2401 Principles of Physics II MATH-3350 Advanced Math for Engineers I CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3326 Heat Transfer CHE-3326 Heat Transfer CHE-3341 Mass Transfer Operations CHE-3305 Computations/Simulations in Chem Eng. CHE-3305 Computations/Simulations in Chem Eng. CHE-3305 Engineering Experimentation CHE-3306 Exposition of Technical Information CHE-3323 Chemical Reaction Engineering CHE-3323 Transfer Operations CHE-3326 Heat Transfer Operations CHE-3305 Computations/Simulations in Chem Eng. CHE-3305 Engineering Material Science CHEM-43xx/41xx Chemistry Elective IE-2324 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) Spring Semester (11 hrs) CHE-4356 Process Safety CHE-4356 Process Safety CHE-4202 Design II BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) Spring Semester (9 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level)	CHE-2310 Intro. Chemical Processes	CHE-2321 Chemical Engineering Thermodynamics I
PHYS-2401 Principles of Physics II CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) Spring Semester (14 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3326 Heat Transfer CHE-3341 Mass Transfer Operations CHE-3305 Computations/Simulations in Chem Eng. CHE-3330 Engineering Material Science CHEM-4372 Engineering Experimentation CHEM-4372 Engineering Experimentation CHEM-4372 Engineering Experimentation CHEM-4374 Fall Semester (13 hrs) Fourth Year Fall Semester (13 hrs) CHE-4353 Process Control CHE-4356 Process Safety CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) BIOE elective (5000-level)	MATH-2450 Calculus III	CHE-3315 Fluid Mechanics
CHEM-3305/3105 Organic Chemistry I Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3326 Heat Transfer CHE-33305 Computations/Simulations in Chem Eng. CHE-3305 Computations/Simulations in Chem Eng. CHE-3305 Engineering Experimentation CHE-3308 Engineering Material Science CHEM-4372 Engineering Experimentation CHEM-4372 Engineering Experimentation CHEM-4330 Engineering Material Science CHEM-4334 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) CHE-4356 Process Safety CHE-4356 Process Safety CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5363*) CHEM-433x Chemistry Elective Fifth year Fall Semester (12 hrs) Spring Semester (9 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level)	CHEM-1308/1108 Principles of Chemistry II	CHE-2306 Exposition of Technical Information
Third Year Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3326 Heat Transfer CHE-3326 Computations/Simulations in Chem Eng. CHE-3325 Computations/Simulations in Chem Eng. CHE-3326 Engineering Experimentation CHE-3330 Engineering Material Science CHEM-43xx/41xx Chemistry Elective Fall Semester (13 hrs) CHE-4353 Process Control CHE-4353 Process Control CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5363*) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE core (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	PHYS-2401 Principles of Physics II	MATH-3350 Advanced Math for Engineers I
Fall Semester (16 hrs) CHE-3322 Chemical Engineering Thermodynamics II CHE-3323 Chemical Reaction Engineering CHE-3326 Heat Transfer CHE-3341 Mass Transfer Operations CHE-3305 Computations/Simulations in Chem Eng. CHE-3322 Transport Lab CHE-4372 Engineering Experimentation CHE-4372 Engineering Experimentation CHE-4330 Engineering Material Science CHEM-43xx/41xx Chemistry Elective IE-2324 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) CHE-4353 Process Control CHE-4356 Process Safety CHE-4220 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5363*) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) Spring Semester (9 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level)		
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CHE-3326 Heat Transfer CHE-3305 Computations/Simulations in Chem Eng. CHE-3305 Computations/Simulations in Chem Eng. CHE-4372 Engineering Experimentation CHE-4372 Engineering Experimentation CHE-4330 Engineering Material Science CHEM-43xx/41xx Chemistry Elective IE-2324 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) CHE-4353 Process Control CHE-4356 Process Safety CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5363*) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	Fall Semester (16 hrs)	Spring Semester (14 hrs)
CHE-3305 Computations/Simulations in Chem Eng. CHE-4372 Engineering Experimentation CHEM-4372 Engineering Experimentation CHEM-43xx/41xx Chemistry Elective IE-2324 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) CHE-4356 Process Safety CHE-4353 Process Control CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level)	CHE-3322 Chemical Engineering Thermodynamics II	CHE-3323 Chemical Reaction Engineering
CHE-4372 Engineering Experimentation CHE-3330 Engineering Material Science CHEM-43xx/41xx Chemistry Elective IE-2324 Engineering Economic Analysis Fourth Year Fall Semester (13 hrs) CHE-4353 Process Control CHE-4356 Process Safety CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHE-3326 Heat Transfer	CHE-3341 Mass Transfer Operations
CHEM-43xx/41xx Chemistry Elective Fourth Year Fall Semester (13 hrs) CHE-4353 Process Control CHE-4232 Unit Operations Lab CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5363*) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE core (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHE-3305 Computations/Simulations in Chem Eng.	CHE-3232 Transport Lab
Fourth Year Fall Semester (13 hrs) CHE-4353 Process Control CHE-4232 Unit Operations Lab CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***		
Fall Semester (13 hrs) CHE-4353 Process Control CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5365*) BIOE core/CHE elective (e.g., CHE-5363*) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHEM-43xx/41xx Chemistry Elective	IE-2324 Engineering Economic Analysis
CHE-4353 Process Control CHE-4232 Unit Operations Lab CHE-4202 Design II CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5385*, CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	Fourth Year	
CHE-4232 Unit Operations Lab CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5385*, CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	Fall Semester (13 hrs)	Spring Semester (11 hrs)
CHE-4201 Design I BIOE core/CHE elective (e.g., CHE-5385*, CHE-5365*) BIOE core/CHE elective (e.g., CHE-5365*) BIOE elective (5000-level, e.g. CHE-5000 Research**) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHE-4353 Process Control	CHE-4356 Process Safety
BIOE core/CHE elective (e.g., CHE-5363*) CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHE-4232 Unit Operations Lab	CHE-4202 Design II
CHEM-43xx Chemistry Elective Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE core (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHE-4201 Design I	BIOE core/CHE elective (e.g., CHE-5385*, CHE-5365*)
Fifth year Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE core (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	BIOE core/CHE elective (e.g., CHE-5363*)	BIOE elective (5000-level, e.g. CHE-5000 Research**)
Fall Semester (12 hrs) MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE core (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	CHEM-43xx Chemistry Elective	
MATH core (e.g. CHE-5310*) BIOE elective (5000-level) BIOE elective (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	Fifth year	
BIOE core (5000-level) BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	Fall Semester (12 hrs)	Spring Semester (9 hrs)
BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	MATH core (e.g. CHE-5310*)	BIOE elective (5000-level)
BIOE elective (5000-level) CHE-6000 Master's Thesis (3hrs)***	BIOE core (5000-level)	BIOE elective (5000-level)
· · · · ·	BIOE elective (5000-level)	CHE-6000 Master's Thesis (3hrs)***
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NOTES

- General education requirements (15hrs) include: POLS-1301, POLS 2306, HIST-2300, HIST-3xxx, Creative Arts Elective (3hrs)
- The courses in bold are all the core Chemical Engineering courses that are only guaranteed to be offered in the semesters shown.
- The description for each course can be found by typing the course code into the search box on the main TTU catalog here: https://catalog.ttu.edu/
- Graduate-level requirements for MS Bioengineering (with thesis): 3 hrs Math, 9 hrs BIOE, 12 hrs Elective, 6 hrs Thesis***
- Graduate-level requirements for MS Bioengineering (non-thesis): 3 hrs Math, 9 hrs BIOE, 15 hrs Elective, 3 hrs Research
- *Courses indicated here are recommended options for Chemical Engineering students, to ensure those courses count toward both the BS and MS degree plans. However, students are free to select other courses to fulfill the BIOE core requirements. There are lots of options to complete both the core and elective requirements for the MS Bioengineering degree, including several non-engineering courses. Some of these options are listed here: https://www.depts.ttu.edu/coe/bioengineering/program.php, and several courses are offered during the summer terms. You must seek approval from the academic advisor for the MS Bioengineering program before registering for classes.
- ** Students taking the <u>thesis option</u> have the option to take CHE-5000 (research) in lieu of a lecture-based elective. It is recommended to take that course in the spring semester of the fourth year.
- *** Students taking the non-thesis option will take an additional elective instead of CHE-6000 in fall, and a report course in spring.