2024-2025 and later catalogs TTU ID

Students: For courses taken at TTU, put the For transfer credit, use T and the For courses that you are current DO NOT EDIT THE TEXT ON THIS Advisors: Indicate the courses to be taken FIRST YEAR Fall ENGL 1301, Ess. Coll. Rhetoric MATH 1451, Calc. I CHEM 1307 &1107, Prin. of Cherner ENGR 1110, Engineering Semina ENGR 1330, Comp. Thinking/Data ENGR 1330, Comp. Thinking/Data ENGR 1308 & 1108, Prin. Of Chem. II CHEM 1308 & 1108, Prin. Of Chem. II CHE 2310, Intro. to Chem. Proceed Phys 2401, Prin. of Phys. II THIRD YEAR Fall CH E 2306, Expos. Tech. Info* (CO) CH E 3322, Chem. Eng. Thermoon IE 2324, Engr. Econ. Analysis (Socrete CH E 3330 Eng. Materials Sci. FOURTH YEAR Fall CH E 4232, Unit Oper. Lab.* CH E 4353, Process Control* Chemical Engineering Elective Additional Requirements - Indicate the Control of the Contro	TTU ID	[Date	
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CH E 4353, Process Control* Chemical Engineering Elective Additional Requirements - Indicate the Control American History (6 hrs) Political Science (6 hrs) Chemistry Electives (6 hrs lecture, 1 hr. lab. 18-hr rule 3 engr repeats 3 attempts Foreign language – 2 yrs HS or fresh		Spring		
Additional Requirements - Indicate the Common American History (6 hrs) Political Science (6 hrs) Chemistry Electives (6 hrs lecture, 1 hr. lab. 18-hr rule 3 engr repeats 3 attempts Foreign language – 2 yrs HS or fresh		CH E 4455, Chem. Pro	c. Des. & Sim.*	
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Chemistry Electives (6 hrs lecture, 1 hr. lab 18-hr rule 3 engr repeats 3 attempts Foreign language – 2 yrs HS or fresh		Creative Arts (3 hrs)		
18-hr rule 3 engr repeats 3 attempts Foreign language – 2 yrs HS or fresh				
Foreign language – 2 yrs HS or fresh				
Additional Comments:				
Advisor Signature				
Student Signature				

*Classes in bold print are only guaranteed to be offered in the semester in which they are listed and must be taken in sequence.

2024-2025 and later catalogs

Polymer and Materials Minor# Bioengineering Minor Minimum of seven courses required. Minimum of six courses. Three courses are required: Two courses are required: BIOL 1403 Biology I (Fall) _____ CH E 4344 Polym./Mat. Lab. CHEM 1308/1108 Prin. Chem II (Fall or Spr) CH E 3330 Materials Sci. Plus one of the following: Plus four courses chosen from the following list with _____ BIOL 1404 Biology II (Spring) two in another department: _____ CHEM 3306/3106 Organic Chem. II & Lab** CHEM 3306 Organic Chem. II ____ MBIO 3400 Microbiology _____ CHEM 4310 Polymer Chem. CH E 4340 Polymer Proc. Plus one of the following core bioengineering courses: ____ CH E 4341 Polymerization Eng. Biochemical Engineering** CH E 4363 ____ CH E 4342 Polymer Physics/Eng. ____ ECE 5356 Bioinstrumentation/Biosensors CH E 4345 Dyn. Polym. Nonlinear Fluids ____ CH E 4346 Polymer Viscoelasticity Plus two of the following (note must not include core course): CH E 4393 Colloid Science/Engr. _____ CH E 4363 Biochemical Engineering(if not used as core) CH E 4394 Soft Materials ____ CH E 4364 Ch E Appl. in Biological Systems** E E 4381 **VLSI Processing** ___ CH E 4365 Biotransport** M E 3228 Materials & Mechanics Lab. ____ CH E 4366 Biomicrofluidics** #Earning of the Polymer minor is contingent on ____ CH E 4385 Bioprocess Control** the offering of polymer electives. ____ CS 3368 Artificial Intelligence ____ CS 4379 Concurrent and Parallel Programming ___ CS 5393 **Bioinformatics Math Minor** ECE 4367 Image Processing Minimum of six courses. Biomedical Signal Processing ECE 5351 Genomic Signal Processing and Control ECE 5355 Three courses are required: ____ ECE 5356 Bioinstrumentation/Biosensors (if not used MATH 1451 Calc. I as core) MATH 1452 Calc. II ENV E 3309 Environmental Engineering MATH 2450 Calc. III ENV E 4385 Microbial Apps. in Envir. Engineering ENV E 4399 Bio. Municipal Wastewater Treatment One elective is required for the BS Ch E degree: _____ IE 4301 **Engineering Design for People** MATH 3350 or 3354 Diff. Eqns. I* Work and Product Safety Engineering IE 4306 MBIO 3401 Principles of Microbiology (Fall or Spring): Plus six hours of approved courses (the following are OR CHEM 3310 Molecular Biochemistry; recommended, others may be taken - see the Math OR BIOL 3320 Cell Biology Dept. for all options); for graduate school in Ch E, MATH 3351 or 4354 is recommended: ___ MATH 2360 Linear Algebra* MATH 3342 Math. Stat. for Eng. ** Denotes courses preferred for CH E Majors ____ MATH 3351 Higher Math for Eng. II MATH 4310 Intro. Num. Anal. I MATH 4354 Diff. Eqns. II

^{*}If Dif Eq is from community college, you must take upper-level courses for remaining 6 hours.