Bachelor of Science – Chemical Engineering

Degree: BSChE Major: Chemical Engineering

The major map illustrates one path to completing your major, based on faculty members' advice on course sequence and a department's tentative plans for scheduling courses. This document provides general direction.

Roane State Community College

Freshman Year – Fall Semester

Course Title	Cr	✓
Humanities/Fine Arts Elective	3	
MATH 1910 – Calculus I	4	
CHEM 1110 – General Chemistry I	4	
HIST I	3	
ENGL 1010 – Composition I	3	
Total	**17**	

Freshman Year – Spring Semester

Course Title	Cr	✓
Humanities/Fine Arts Elective	3	
MATH 1920 – Calculus II	4	
CHEM 1120 – General Chemistry II	4	
HIST II	3	
ENGL 1020 – Composition II	3	
Total	**17**	

Sophomore Year – Fall Semester

Course Title	Cr	✓
CHEM 2010 – Organic Chemistry I	4	
MATH 2110 – Calculus III	4	
PHYS 2110 – Cal Based Physics I	4	
ENGL 2120 – Modern American Lit or ENG 2210 – Early British Lit or ENGL – 2310 – Early World Lit	3	
Social/Behavioral Science	3	
Total	**18**	

Sophomore Year – Spring Semester

Course Title	Cr	✓
CHEM 2020 – Organic Chemistry II	4	
MATH 2120 – Differential Equations	3	
PHYS 2120 – Cal Based Physics II	4	
Social/Behavioral Science	3	
COMM 2025 – Fundamentals of Communication	3	
Total	**17**	

Tennessee Technological University

Junior Year – Fall Semester

Course Title	Cr	✓
CHE 1010 – Intro to Chemical Engineering	1	
ENGR 1120 – Programming[1]	2	
CHE 2015 – Intro Chem/Bio An-Scl I	3	
CHE 3010 – Thermo of ChE Processes	3	
CHE 3050 – TS1: Cond, Radiation, Diff	3	
CHE 3051 – TS1: Cond, Radiation, Diff Lab	1	
Tech Elective[2]	3	
Total	**16**	

Junior Year – Spring Semester

Course Title	Cr	✓
CHE 1020 – CHE Process, Products, Ethics	1	
CHE 2020 – Intro to Chem/Bio An-Scl II	3	
CHE 3510 – Sep and Sol Thermo	3	
CHE 3511 – Sep and Sol Thermo Lab	1	
CHE 3550 – TS2: Fluid Mechanics	3	
CHE 3551 – TS2: Fluid Mechanics Lab	1	
CHE 3735 – ChE Operations	2	
Tech Elective[2]	3	
Total	**17**	

Senior Year – Fall Semester

Course Title	Cr	✓
CHE 4050 – TS3: Diff and Mass Transfer	3	
CHE 4051 – TS3: Diff and Mass Transfer Lab	1	
CHE 4060 – ChE Reaction Engineering	3	
CHE 4061 – ChE Reaction Engineering Lab	1	
CHE 4410 – Process Design I	3	
CHEM 3510 – Physical Chemistry I	4	
Total	**15**	

Senior Year – Spring Semester

Course Title	Cr	✓
CHE 4250 – ChE Capstone Lab	2	
CHE 4540 – Process Dynamics and Control	3	
CHE Tech Elective[3]	3	
CHE Tech Elective[3]	3	
CHE 4420 – Process Design II	3	
CHEM 3520 – Physical Chemistry II	4	
Total	**18**	

Red color listed courses are taken at Roane State

Purple color listed courses are taken at TTU

Notes:

Chemical Engineering (CHE) courses generally only offered in the semester listed above

[1] ENGR 1120 must be MATLAB

[2] Tech Electives can be from any of the following courses:

- Any College of Engineering course at 3000 or 4000 level
- Any BIOL/CHEM/MATH/PHYS/ESS course at 3000 or 4000 level
- Any course with the prior approval of the CHE Undergraduate Program Coordinator

[3] Six hours of CHE Tech Elective must be from the following courses: CHE 4245 – Clinical Immersion (3) | CHE 4330 – Polymer Engineering (3) | CHE 4335 – Fuel Cells (3) | CHE 4340 – Introduction to Rheology (3) | CHE 4440 – Protein Engineering (3) | CHE 4550 – Green Engineering (3) | CHE 4560 – Agile Manufacturing (3) | CHE 4661 – Transport in Biochemical and Biological Processes (3) | CHE 4990 – Undergraduate Research (Credit 1 to 3 per semester. Maximum 12 credits.)