UNIVERSITY OF South Carolina

MIDLANDS TECHNICAL COLLEGE

Transfer Pathway: Associate of Applied Science in Engineering Fundamentals with a Concentration in Chemical Engineering to Bachelor of Science in Engineering in Chemical Engineering

Bulletin Year: 2023-2024

This course plan is a recommended sequence for this major. Please seethe University of South Carolina Bulletin for detailed degree requirements and contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.

Course Subject and Title	Credit Hours	Min. Grade	USC Equivalent Course	USC Degree Applicability
Semester One (17 Credit Hours)				
EGR 270 Introduction to Engineering	3	C	ENCP 101 Introduction to Engineering I	PR
ENG 101 English Composition I	3	C	ENGL 101 Critical Reading and Composition	CC-CMW
MAT 110 College Algebra (7 week course)*	3	C	MATH 111 Basic College Mathematics	Pre-req
MAT 111 College Trigonometry (7 week course)*	3	C	MATH 112 Trigonometry	Pre-req
CHM 110 College Chemistry I	4	C	CHEM 111 & 111L General Chemistry I & Lab	CC-SCI
COL 101 College Orientation	1		Not transferrable	
Semester Two (14 Credit Hours)				
MAT 140 Analytical Geometry and Calculus I	4	C	MATH 141 Calculus I	CC-ARP
ENG 102 English Composition	3	C	ENGL 102 Rhetoric and Composition	CC-CMW/INF
CHM 111 College Chemistry II	4	C	CHEM 112 & 112L General Chemistry II & Lab	PR
PSC 201 American Government	3	C	POLI 201 American National Government	CC-GSS
Summer (15 Credit Hours)				
EGR 280 Chemical Process Principles	3	C	ECHE 300 Chemical Process Principles	PR
CHM 211 Organic Chemistry I**	4	C	CHEM 333 & 331L Organic Chemistry I & Lab	PR
MAT 141 Analytical Geometry and Calculus II	4	C	MATH 142 Calculus II	CC-ARP
PHY 221 University Physics I	4	C	PHYS 211 & 211L Essentials of Physics I & Lab	CC-SCI
Semester Three (15 Credit Hours)				
PHY 222 University Physics II	4	C	PHYS 212 & 212L Essentials of Physics II & Lab	PR
EGR 274 Engineering Application of Numerical Methods	3	C	ENCP 201 Intro to Applied Numerical Method	PR-Technical Elective
CHM 212 Organic Chemistry II***	4	C	CHEM 334 & 332L Organic Chemistry II & Lab	PR
MAT 240 Analytical Geometry and Calculus III	4	C	MATH 241 Vector Calculus	PR
Semester Four (16 Credit Hours)				
EGR 268 Fluid Mechanics	3	C	ENCP 360 Fluid Mechanics	PR
HIS 101 Western Civilization to 1689	3	C	European Civilization: Ancient to Mid-17th Century	CC-GHS
MAT 242 Differential Equations	4	C	MATH 242 Elem. Differential Equations	PR
EGR 266 Engineering Thermodynamics	3	C	ENCP 290 Thermodynamic Fundamentals	PR
THE 101 Introduction to Theatre	3	C	THEA 200 Understanding & Appreciating Theatre	CC-AIU
Semester Five (16 Credit Hours)				
ECHE 456 Comp. Methods for Engr. Applications	3			MR
ECHE 321 Heat-Flow Analysis *(fall only)*	3			MR
ECHE 440 Separation Process Design *(fall only)*	3			MR
ECHE 311 Chem. Engr. Thermodynamics	3			PR
PHIL 325 Engineering Ethics	3			CC-CMS/VSR
ECHE 202 Exploring the Chemical Engr. Workplace *or* ECHE 203 Research in Chemical Engineering	1			PR-Professional Development Elective
Semester Six (15-16 Credit Hours)				
ECHE 322 Mass Transfer *(spring only)*	3			MR
ECHE 460 Chemical Engineering Lab 1 *(spring only)*	3			MR
CSCE 145 Algorithmic Design I *or* CSCE 206 Scientific Applications Programming	3-4			PR-Computer Programming Elective
Engineering Elective	3			PR
Technical Elective	3			PR
Semester Seven (18 Credit Hours)				
ECHE 430 Chemical Engineering Kinetics *(fall only)*	3			MR
ECHE 461 Chemical Engineering Lab II *(fall only)*	3			MR
ECHE 465 Chemical-Process Analysis & Design I *(fall only)*	3			MR
ECHE 550 Chemical-Process Dynamics & Control *(fall only)*	3			MR
Technical Elective	3			PR
Chemistry Elective	3			PR
Semester Eight (15 Credit Hours)				
ECHE 466 Chemical-Process Anal. & Design II *(spring only)*	3			MR/CC-INT
ECHE 567 Process Safety, Health & Loss Prev. *(spring only)*	3			MR
Technical Elective	3			PR
Career Elective	3			PR
Engineering Elective	3			PR
Take during any semester (0-6 Credit Hours)				
Carolina Core GFL	0-6			CC-GFL

*Students may place into and begin with MAT 140.

**CHM 211 Organic Chemistry satisfies 3-hour lecture requirement for Organic Chem I at USC as well as the 1-hour lab.

***CHM 212 Organic Chemistry satisfies 3-hour lecture requirement for Organic Chem II at USC as well as the 1-hour lab.

Renewed: June 2023

University Requirements: Bachelor's degree-seeking students must meet Carolina Core (general education) requirements. For more information regarding these requirements, please visit the Carolina Core page on the University website.

Codes:			
CC	Carolina Core	**CC-INF**	Carolina Core – Information Literacy
CC-AIU	Carolina Core-Aesthetic and Interpretive Understanding	**CC-INT**	Carolina Core – Integrative Course
CC-ARP	Carolina Core-Analytical Reasoning and Problem-Solving	**CC-SCI**	Carolina Core – Scientific Literacy
CC-CMS	Carolina Core-Effective, Engaged, and Persuasive Communication: Spoken Component	**CC-VSR**	Carolina Core – Values, Ethics, and Social Responsibility
CC-CMW	Effective, Engaged, and Persuasive Communication: Written Component	**CR**	College Requirement
CC-GFL	Carolina Core-Global Citizenship and Multicultural Understanding: Foreign Language	**MR**	Major Requirement
CC-GHS	Carolina Core – Historical Thinking	**PR**	Program Requirement
CC-GSS	Carolina Core – Social Sciences		