



**Direct Transfer Track: Associate of Applied Science in Engineering Fundamentals Concentration in Mechanical Engineering
to Bachelor of Science in Engineering in Mechanical Engineering**
Bulletin Year: 2024-2025

This course plan provides a recommended sequence for this major. For detailed degree requirements, please refer to the University of South Carolina Bulletin. Additionally, reach out to your academic advisor at Midlands Technical College for assistance in navigating coursework in your MTC program of study. Your University of South Carolina advisor will help with course selection and planning for upcoming semesters after transfer.

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 Intro to Engineering	PR-Supporting Course
ENG 101 English Composition I	3	C	ENGL 101 Critical Reading and Composition	CC-CMW
CHM 110 College Chemistry 1	4	C	CHEM 111 General Chemistry I and CHEM 111L General Chemistry I Lab	CC-SCI
MAT 110 College Algebra (7-week course) *	3	C	MATH 111 Basic College Mathematics	Pre-req/ Elective
MAT 111 College Trigonometry (7-week course) *	3	C	MATH 112 Trigonometry	Pre-req/ Elective
COL 101 College Orientation	1		Non-transferable	Not Applicable
Semester Two (13 Credit Hours)				
MAT 140 Analytical Geometry and Calculus I	4	C	MATH 141 Calculus 1	CC-ARP
ENG 102 English Composition II	3	C	ENGL 102 Rhetoric and Composition	CC-CMW/INF
Transfer Course (ex: CHM 111, BIO 101, or EGR 209)	3	C	Math/Science Elective	PR-Supporting Course (Math/Science Elective)
EGR 275 Intro to Engineering/Computer Graphics	3	C	ENCP 102 Intro to Computer-Aided Design	PR-Supporting Course
Summer (14 Credit Hours)				
PSC 201 American Government	3	C	POLI 201 American National Government	CC-GSS/VSR, Founding Documents
MAT 141 Analytical Geometry and Calculus II	4	C	MATH 142 Calculus II	CC-ARP
HIS 101 Western Civilization to 1689 or HIS 102 Western Civilization Post 1689 or HIS 201 American History: Disc to 1877 or HIS 202 American History 1877 to Present	3	C	HIST 101 Eur Civ: Ancient-Mid 17 th Cent or HIST 102 Eur Civ: From Mid-17 th Cent or HIST 111 US History to 1865 or HIST 112 US History Since 1865	CC-GHS
PHY 221 University Physics I	4	C	PHYS 211 Essentials of Physics I and PHYS 211L Essentials of Physics I Lab	CC-SCI
Semester Three (16 Credit Hours)				
EGR 274 Engineering App of Numerical Methods	3	C	ENCP 201 Intro to Applied Numerical Methods	PR-Supporting Course
EGR 260 Engineering Statics	3	C	ENCP 200 Statics	PR-Supporting Course
MAT 240 Analytical Geometry and Calculus III	4	C	MATH 241 Vector Calculus	PR-Supporting Course
ECE 221 Introduction to Electrical Engineering I	3	C	ELCT 220 Electrical Engineering for Non-Majors	PR-Supporting Course
AIU Transfer Course (ex: MUS 105 Music Appreciation, ART 101 Art History and Appreciation, etc.)	3	C	Carolina Core AIU	CC-AIU
Semester Four (16 Credit Hours)				
MAT 242 Differential Equations	4	C	MATH 242 Elem. Differential Equations	PR-Supporting Course
EGR 264 Intro to Engineering Mechanics of Solids	3	C	ENCP 260 Intro to the Mechanics of Solids	PR-Supporting Course
EGR 266 Engineering Thermodynamics Fundamentals	3	C	ENCP 290 Thermodynamic Fundamentals	PR-Supporting Course
EGR 262 Dynamics	3	C	ENCP 210 Dynamics	MR
EGR 268 Engineering Fluid Mechanics	3	C	ENCP 360 Fluid Mechanics	MR
Semester Five (15 Credit Hours)				
EMCH 361 Mechanical Engineering Lab I	3			MR
EMCH 332 Kinematics	3			MR
EMCH 327 Machine Design or EMCH 394 Applied Thermodynamics	3			MR
CSC 106 Scientific Applications Programming	3			PR-Supporting Course
Elective	3			PR
Semester Six (16 Credit Hours)				
EMCH 380 Project Management	3			MR
EMCH 368 Mechatronics	4			MR
EMCH 354 Heat Transfer	3			MR
EMCH 362 Mechanical Engineering Lab. II	3			MR
EMCH 371 Materials	3			MR
Semester Seven (15-18 Credit Hours)				
EMCH 367 Controls	3			MR
EMCH 377 Manufacturing	3			MR
EMCH 427 Mechanical Design I	3			MR
EMCH Elective	3			PR-Supporting Course
Math/Science Elective	3			PR-Supporting Course
Carolina Core GFL	0-3			CC-GFL

Semester Eight (12-15 Credit Hours)			
EMCH 428 Design II	3		MR
EMCH Elective	3		PR-Supporting Course
Elective	3		PR
Carolina Core CMS	3		CC-CMS
Carolina Core GFL	0-3		CC-GFL

* Credit hours received for MAT 110 or MAT 111 may reduce additional elective hours needed and Students may place into and begin with MAT 140.

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	FD	Founding Documents