



**Direct Transfer Track: Associate of Applied Science in Engineering Fundamentals with a Concentration in Mechanical Engineering  
To a Bachelor of Science in Industrial Engineering**  
Bulletin Year: 2025-2026

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
<b>Semester One (17 Credit Hours)</b>				
EGR 270 Intro. To Engineering	3		ENCP 101 Intro. To Engineering	PR- Supporting Course (Foundational Course)
ENG 101 English Composition I	3	C	ENGL 101 Critical Reading and Composition	CC- CMW
CHM 110 College Chemistry I	4	C	CHEM 111/ 111L General Chemistry I and Lab	CC- SCI
MAT 112 Precalculus	3	C	MATH 115 Precalculus	Pre-Req/ Elective
COL 101 College Orientation	1		Non- Transferable	
<b>Semester Two (13 Credit Hours)</b>				
MAT 140 Analytical Geometry and Calculus I	4	C	MATH 141 Calculus I	CC- ARP
ENG 102 English Composition II	3	C	ENGL 102 Rhetoric and Composition	CC- CMW/ INF
EGR 209 Statistics for Engineers	3		STAT 509 Statics for Engineers	PR- Supporting Course (Foundational Course)
EGR 275 Intro to Engineering/Computer Graphics	3		ENCP 102 Intro to Engineering II	PR- Supporting Course (CAD Elective)
<b>Summer Session (14 Credit Hours)</b>				
PSC 201 American Government	3		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		HIST 101 Eur Civ: Ancient Mid-17 <sup>th</sup> Cent or HIST 102 Eur Civ: From Mid-17 <sup>th</sup> 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/ 211L Essential of Physics I and Lab	CC- SCI
<b>Semester Three (15 Credit Hours)</b>				
EGR 274 Engineering App of Numerical Methods	3		ENCP 201 Intro to Applied Numerical Methods	PR- Supporting Course (Computing Elective 1)
EGR 260 Engineering Statics	3		ENCP 200 Statics	PR- Elective
MAT 240 Analytical Geometry and Calculus III	3	C	MATH 241 Vector Calculus	PR (Math/ Science Elective 1)
ECE 221 Introduction to Electrical Engineering I	3		ELCT 220 Electrical Engineering for Non-Majors	PR- Elective
MUS 105 Music Appreciation or ART 101 Art History & Appreciation or THE 101 Introduction to Theatre	3		MUSC 110 Introduction to Music or ARTE 101 Introduction to Art or THEA 200 Understanding & App. Theatre	CC- AIU
<b>Semester Four (15 Credit Hours)</b>				
MAT 242 Differential Equations	3		MATH 242 Elem. Differential Equations	PR (Math/Science Elective 2)
EGR 264 Intro to Engineering Mechanics of Solids	3		ENCP 260 Intro to the Mechanics of Solids	PR-Elective
EGR 266 Engineering Thermodynamics Fundamentals	3		ENCP 290 Thermodynamic Fundamentals	PR-Elective
EGR 262 Dynamics	3		ENCP 210 Dynamics	PR-Elective
EGR 268 Fluid Mechanics	3		ENCP 360 Fluid Mechanics	PR-Elective
<b>Semester Five (12-13 Credit Hours)</b>				
MATH 344, Applied Linear Algebra	3			PR-Supporting Course (Foundational Course)
INDE 292 Work Design and Ergonomics	3			MR
ECON 421 Engineering Economics	3			PR-Supporting Course (Foundational Course)
Computing Elective	3-4			PR-Supporting Course (Computing Elective 2)
<b>Semester Six (12 Credit Hours)</b>				
INDE 391 Production Engr and Mgmt.	3			MR
Carolina Core- CMS	3			CC- CMS
INDE 291 Materials and Manufacturing	3			MR
Math Science Elective 3	3			PR (Math/ Science Elective 3)
<b>Semester Seven (12-15 Credit Hours)</b>				

INDE 595 Systems Simulation	3			MR
INDE 490 Quality Engineering	3			MR
INDE 392 Operations Research in Engineering	3			MR
INDE 397 Industrial Engineering Lab	3			MR
Carolina Core- GFL If Needed	3			CC- GFL
<b>Semester Eight (12-15 Credit Hours)</b>				
INDE 593 Supply Chain Engineering	3			MR
INDE 497 Industrial Capstone Project	3			MR
INDE 496 Facilities Planning and Materials Handling	3			MR
INDE 591 Smart Manufacturing	3			MR
Carolina Core- GFL if Needed	3			CC- GFL

\* The program requires a minimum of 120 hours. The number of electives required (9-23 hours) depends on how other program requirements are met.

Disclaimer: Direct Transfer Tracks are only a suggested or recommended sequence of courses required in a program of study. Please 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

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