Montgomery College - Mechanical Engineering, A.S.
UMBC - Mechanical Engineering, B.S.
Catalog Year: 2024-2025

Montgomery College				UMBC Equivalency		
CODE	TITLE	NOTES/RECOMMENDATIONS	Credits	Course	GEP	Credits
*^CHEM131	Principles of Chemistry I	Not included in MC's Suggested Course Sequence	4	CHEM 101 - Principles of Chemistry I	S	
*CHEM132	Principles of Chemistry II	Substitute for PHYS263	4	CHEM 102 - Principles of Chemistry II		
	CHEM131 + CHEM132			CHEM101 + CHEM102 + CHEM102L	SL	8
*MATH181	Calculus I		4	MATH151 - Calculus and Analytic Geometry I	M	4
^MATH182	Calculus II		4	MATH152- Calculus and Analytic Geometry II		4
*MATH282	Differential Equations		3	MATH 225 - Introduction to Differential Equations		3
*MATH 280	Multivariable Calculus		5	MATH 251 - Multivariable Calculus		4
*PHYS161	General Physics I: Mechanics and Heat		3	PHYS 121 - Introductory Physics I	SL	
*PHYS262	General Physics II		3	PHYS 122 - Introductory Physics II		
	PHYS 161 + PHYS262			PHYS121 + PHYS122 + LAB		6
ENGL102	Critical Reading, Writing, and Research		3	ENGL 100 - Composition	EN	3
^ENES100	Intro to Engineering Design		3			
^ENES206	MATLAB for Engineers	Program Elective	1			
	ENES100 + ENES206			ENME 101-Intro to Engineering		3
^ENES102	Statics		3	ENME 110-Statics		3
*ENES272	Intro to CAD	Program Elective	2			
*ENES104	Introduction to Engineering Professions		1			
	ENES272 + ENES104 =			ENME 204-Intro. to Engineering Design with CAD		3
*ENES232	Thermodynamics	Program Elective	3	ENME 217-Engineering Thermodynamics		3
*ENES220	Mechanics of Materials		3	ENME 220-Mechanics of Materials		3
*ENES221	Dynamics	Program Elective in place of ENGL101	3	ENME 221-Dynamics		3
Behavioral and Social Sciences Distribution			3		SS	3
Behavioral and Social Sciences Distribution			3		SS	3
**Humanities Distribution - Foreign Language Recommended			3		AH	3
**Foreign Language			3		C	3
**Foreign Language			3		201L	3
Arts Distribution			3		AH	3
		Total Credits at Montgomery College:	70	Transferrable credits to UMBC (Maximum 65-66**):		66

Mechanical Engineering Specfic Requirements:
Students who have more than two attempts in any course required for the major will not be permitted to pursue Mechanical Engineering (Withdrawals count as attempts)
^ ENES 101, MATH 152, and ENME 110 can be used to satisfy the Mechanical Engineering major requirements when completed with a "B" or better; other majors may allow a "C" or better
Gateway Requirement: Students are permitted to take upper-level Mechanical Engineering courses once the following gateway requirements are fulfilled: MATH152, ENES101, ENME110 with a grade of "B or better.

* Course can be used to satisfy UMBC major requirements when completed with a "C" or better.

**** Foreign Language Requirement:** The language requirement consists of completion of a foreign language through the 201 level or demonstrated proficiency at that level. The proficiency requirement is met by previous experience as follows: 1) completion of level 4 or higher of a language in high school, or 2) corresponding AP, IB or CLEP credit, or 3) completion of a language through the 201 level at a regionally accredited college or university. The Shady Grove Transfer Credit Limit Exception is available to students who earn an associate degree prior to transferring to UMBC at Shady Grove and will permit the transfer of up to 66 credits, instead of the standard 60-credit transfer limit, from a Maryland two-year school to UMBC on the condition that six (6) of the 66 credits are language courses directly applicable toward the 201-level language sequence required as part of the UMBC general education program.

CODE	TITLE	PRE-REQUISITES		NOTES/RECOMMENDATIONS	GEP	CREDITS
CMPE306	Introductory Circuit Theory					4
STAT355	Probability for Scientists and Engineers					4
ENME301	The Structure and Properties of Engineering Materials					3
ENME303	Engineering Mathematics					3
ENME320	Fluid Mechanics					3
ENME304	Machine Design					3
ENME321	Transfer Processes					3
ENME360	Vibrations					3
ENME403	Automatic Controls					3
ENME432L	Fluid/Energy Lab					2
ENME4XX	Tech/Design Elective					3
S/DE	Science/Design Elective					3
ENME332L	Solid Mechanics and Materials Laboratory				WI	3
ENME444	Systems Design					3
ENME482L	Vibrations/Control Lab					2
ENME4XX	Tech/Design Elective					3
Elective						3
Elective						3
Social Science GEP Requirement					SS	3
Arts and Humanities GEP Requirement					AH	3
				Total credits at UMBC:		60
				Total credits toward UMBC degree (minimum 120 credits):		126

Updated: 11/8/2024