Suggested Transfer Pathway

Montgomery College A.S. in General Engineering to University of Maryland, College Park at the Universities at Shady Grove B.S. in Biocomputational Engineering

Total Credits: 63, Catalog Year: 2022-2023

0 - 31 Credits – Montgomery College (Courses may be taken in any order, pending prerequisites)

Fall Semester	Cr
ENGL102 Critical Reading, Writing and Research	3
MATH181 Calculus I †	4
CHEM 131 Principles of Chemistry I	4
ENES100 Intro to Engineering Design (GEEL)	3
Total Credits	**14**

Spring Semester	Cr
MATH182 Calculus II	4
CHEM 132 Principles of Chemistry II	4
PHYS161 General Physics I: Mechanics and Heat	3
ENES120 Biology for Engineers (or BIOL150)	3
Behavioral and Social Sciences Distribution *	3
Total Credits	**17**

32 - 63 Credits – Montgomery College

Fall Semester	Cr
MATH280 Multivariable Calculus	4
PHYS262 Physics II: Electricity and Magnetism	4
Program Elective	5
Arts Distribution	3
Total Credits	**16**

Spring Semester	Cr
MATH282 Differential Equations	3
PHYS263 or Program Elective	4
ENES240 Scientific and Engineering Computation	3
Behavioral and Social Sciences Distribution *	3
Humanities Distribution	3
Total Credits	**16**

Apply to graduate from Montgomery College with an Associate of Science in General Engineering

* BSSD courses must come from different disciplines.
† MATH 165 if needed for MATH 181

Year Three – UMD, College Park at USG

Fall Semester	Cr
ENBC301 Intro to Biocomputational Engineering	1
ENBC311 Python for Data Analysis	3
ENBC331 Applied Linear Systems and Differential Equations	3
ENBC332 Statistics, Data Analysis, and Data Visualization	3
ENBC341 Biomolecular Engineering Thermodynamics	3
ENBC351 Quantitative Molecular and Cellular Biology	3
Total Credits	**16**

Spring Semester	Cr
ENBC312 Object Oriented Programming in C++	3
ENBC321 Machine Learning for Data Analysis	3
ENBC322 Algorithms	3
ENBC342 Computational Fluid Dynamics and Mass Transfer	3
ENBC352 Molecular Techniques Laboratory	2
Total Credits	**14**

Year Four – UMD, College Park at USG

Fall Semester	Cr
ENBC4xx Elective	3
ENBC403 Research Methods in Biological Data Mining	3
ENBC425 Imaging and Image Processing	3
ENBC431 Finite Element Analysis	3
ENGL393 Technical Writing	3
Total Credits	**15**

Spring Semester	Cr
ENBC423 Applied Computer Vision	3
ENBC441 Computational Systems Biology	3
ENBC491 Senior Capstone Design in Biocomputational Engineering	3
ENBC353 Synthetic Biology	3
ENBC4xx Bioinformatics	3
Total Credits	**15**

MC A.S. in General Engineering to UMD-USG B.S. in Biocomputational Engineering

Total Credits: 63, Catalog Year 2022-2023

Name:	**Date:**	**ID#**	
General Education Courses	**COURSE**	**HRS**	**GRADE**
English Foundation (ENGL102, Critical Reading, Writing and Research)	ENGL102	3	
Math Foundation (Calculus I) †	MATH181	4	
Distribution Courses	**COURSE**	**HRS**	**GRADE**
NSND: General Physics I: Mechanics and Heat	PHYS161	3	
NSLD: General Physics II: Electricity and Magnetism	PHYS262	4	
Arts Distribution		3	
Behavioral and Social Sciences Distribution *		3	
Behavioral and Social Sciences Distribution *		3	
Humanities Distribution		3	
General Education Elective	**COURSE**	**HRS**	**GRADE**
Introduction to Engineering Design	ENES100	3	
Program Requirements	**COURSE**	**HRS**	**GRADE**
ENGL101 (if needed for ENGL102/ENGL103, general elective if not)		3	
Principles of Chemistry I	CHEM 131	4	
General Physics III or Program Elective		4	
Calculus II	MATH182	4	
Multivariable Calculus	MATH280	4	
Differential Equations	MATH282	3	
Biology for Engineers	ENES 120	3	
Scientific and Engineering Computation	ENES240	3	
Principles of Chemistry II or General Chemistry for Engineers	CHEM 132 or CHEM135	4	
Program Elective		2	

***** BSSD courses must come from different disciplines

† MATH 165 if needed for MATH 181

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