

**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 Embedded Systems and Internet of Things**

Total Credits: 63, Catalog Year: 2019-2020

**0 - 32 Credits – Montgomery College**

(Courses may be taken in any order, pending prerequisites)

	<b>Cr</b>
ENGL101 College Writing (if needed for ENGL102)	3
ENES100 Intro to Engineering Design (GEEL)	3
MATH181 Calculus I	4
CHEM 132* Principles of Chemistry II or 135 General Chemistry for Engineers	4
Humanities Distribution	3
<b>Total Credits</b>	<b>17</b>

	<b>Cr</b>
ENGL102 Critical Reading, Writing and Research	3
MATH182 Calculus II	4
PHYS161 General Physics I: Mechanics and Heat	3
Behavioral and Social Sciences Distribution **	3
ENES/ENEE Elective	3
<b>Total Credits</b>	<b>16</b>

**33 - 63 Credits – Montgomery College**

	<b>Cr</b>
MATH280 Multivariable Calculus	4
PHYS262 Physics II: Electricity and Magnetism	4
Behavioral and Social Sciences Distribution *	3
ENES/ENEE Electives	6
<b>Total Credits</b>	<b>17</b>

	<b>Cr</b>
MATH282 Differential Equations	3
PHYS263 Physics III: Waves, Optics, Modern Physics	4
Arts Distribution	3
CMSC140 Introduction to Programming or CMSC203 Computer Science I	3-4
Program Electives †	3
<b>Total Credits</b>	<b>16-17</b>

*Apply to graduate from Montgomery College with an Associate of Science in [General Engineering](#)*

\*\* The pre-requisite for CHEM 132 is CHEM 131.

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

† MATH 165 if needed for MATH 181 or any course from the following disciplines: ENEE, ENES, PHYS, CMSC, CHEM, BIOL, GEOL.

**Year Three – Univ. of Maryland, College Park at USG**

<b>Fall Semester</b>	<b>Cr</b>
ENEB302 Analog Circuits	4
ENEB340 Intermediate Programming Concepts and Applications for Embedded Systems (C/C++)	2
ENEB341 Introduction to Internet of Things	3
ENEB344 Introduction to Digital Circuits	4
ENEB354 Discrete Mathematics for Information Technology	3
<b>Total Credits</b>	<b>16</b>

<b>Spring Semester</b>	<b>Cr</b>
ENEB304 Microelectronics and Sensors	3
ENEB352 Introduction to Networks and Protocols	3
ENEB353 Computer Organization for Embedded Systems	3
ENEB355 Algorithms in Python	3
ENGL393 Technical Writing	3
<b>Total Credits</b>	<b>15</b>

**Year Four – Univ. of Maryland, College Park at USG**

<b>Fall Semester</b>	<b>Cr</b>
ENEB408X Capstone Design Lab I	3
ENEB454 Embedded Systems	3
ENEB4xx Senior Level Elective 1	3
ENEB4xx Senior Level Elective 2	3
ENEB4xx Senior Level Elective 3	3
<b>Total Credits</b>	<b>15</b>

<b>Spring Semester</b>	<b>Cr</b>
ENEB408X Capstone Design Lab II	3
ENEB443 Hardware/Software Security for Embedded Systems	3
ENEB4xx Senior Level Elective 4	3
ENEB4xx Senior Level Elective 5	3
ENEB4xx Senior Level Elective 6	3
<b>Total Credits</b>	<b>15</b>

MC [A.S. in General Engineering](#) to UMD-USG B.S. in Embedded Systems and Internet of Things

Total Credits: 63, Catalog Year 2019-2020

Name:	Date:	ID#	
<b>General Education Courses</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
English Foundation (ENGL102, Critical Reading, Writing and Research)	ENGL102	3	
Math Foundation (Calculus I)	MATH181	4	
<b>Distribution Courses</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
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	
<b>General Education Elective</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
Introduction to Engineering Design	ENES100	3	
<b>Program Requirements</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
ENGL101 (if needed for ENGL102/ENGL103, general elective if not)		3	
Calculus II	MATH182	4	
Differential Equations	MATH282	3	
<b>Area of Concentration Requirements</b>	<b>COURSE</b>	<b>HRS</b>	<b>GRADE</b>
Principle of Chemistry II or General Chemistry for Engineers	CHEM 132 or CHEM135	4	
Multivariable Calculus	MATH280	4	
General Physics III: Waves, Optics and Modern Physics	PHYS263	4	
ENES/ENEE Electives		6	
CMSC140 Introduction to Programming or CMSC203 Computer Science I	CMSC140 or CMSC203	3	
Program Electives †		3	

\* BSSD courses must come from different disciplines

† MATH 165 if needed for MATH 181 or any course from the following disciplines: ENEE, ENES, PHYS, CMSC, CHEM, BIOL, GEOL.

University of Maryland, College Park Contact: Kathryn Weiland, [es-sg@ece.umd.edu](mailto:es-sg@ece.umd.edu)

Montgomery College Contact: Nawal Benmouna, [nawal.benmouna@montgomerycollege.edu](mailto:nawal.benmouna@montgomerycollege.edu)