

## Transfer to UMCP BS Chemical/Biomolecular Engineering from MC AS Chemical Engineering

### UMCP - Freshman Year: Fall Semester

Course		Cr
ENES 100	Introduction to Engineering Design	3
MATH 140	Calculus I	4
CHEM 135	General Chemistry for Engineers	3
CHEM 136	General Chemistry for Engineers Laboratory	1
CORE		3
<b>Total Credits</b>		<b>14</b>

### UMCP - Freshman Year: Spring Semester

Course		Cr
ENGL 101	Introduction to Writing	3
MATH 141	Calculus II	4
PHYS 161	General Physics:	3
BIOE 120	Biology for Engineers	3
<b>CHBE 101</b>	<b>Intro to Chemical &amp; Biomolecular Engineering</b>	<b>3</b>
<b>Total Credits</b>		<b>16</b>

<http://www.chbe.umd.edu/undergrad/fall2010/sample-f10forward.html>

[http://cms.montgomerycollege.edu/Curricula/Engineering\\_Science\\_A\\_S\\_-\\_Chemical\\_Engineering/](http://cms.montgomerycollege.edu/Curricula/Engineering_Science_A_S_-_Chemical_Engineering/)

### MC - Freshman Year: Fall Semester

Course		Cr
CH 101	<i>Principles of Chemistry I</i>	4
EN 102	<i>Techniques of Reading and Writing II</i>	3
ES 100	Introduction to Engineering Design	3
MA 181	<i>Calculus I</i>	4
	<i>Humanities distribution</i>	<b>3</b>
<b>Total Credits</b>		<b>17</b>

### MC - Freshman Year: Spring Semester

Course		Cr
CH 102	<i>Principles of Chemistry II</i>	4
<b>BIOE 120</b>	<b>Biology for Engineers – MTAP at UMCP</b>	<b>3</b>
MA 182	Calculus II	4
PH 161	General Physics I	3
	<i>Behavioral and social sciences</i>	3
<b>Total Credits</b>		<b>17</b>

### MC - Sophomore Year: Summer Semester

Course		Cr
<b>CHBE 101</b>	<b>Intro to Chem.I &amp; Biomole. Eng – MTAP at UMCP</b>	<b>3</b>
<b>Total Credits</b>		<b>3</b>

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### UMCP - Sophomore Year: Fall Semester

Course		Cr
MATH 241	Calculus III	4
PHYS 260	General Physics II	3
PHYS 261	General Physics II Laboratory	1
CHEM 231	Organic Chemistry I	3
CHEM 232	Organic Chemistry Laboratory I	1
<b>CHBE 301</b>	<b>CHBE Thermodynamics I</b>	<b>3</b>
CORE		3
<b>Total Credits</b>		<b>18</b>

### UMCP - Sophomore Year: Spring Semester

Course		Cr
MATH 246	Differential Equations for Scientists and Engineers	3
PHYS 270	General Physics III	3
PHYS 271	General Physics III Laboratory	1
CHEM 241	Organic Chemistry II	3
CHEM 242	Organic Chemistry Laboratory II	1
<b>CHBE 250</b>	<b>Computer Methods in Chemical Engineering</b>	<b>3</b>
<b>CHBE 302</b>	<b>CHBE Thermodynamics II</b>	<b>3</b>
<b>Total Credits</b>		<b>17</b>

### MC - Sophomore Year: Fall Semester

Course		Cr
CH 203	Organic Chemistry I	5
MA 280	Multivariable Calculus	4
PH 262	<i>General Physics II</i>	4
	<i>Arts distribution</i>	3
<b>Total Credits</b>		<b>16</b>

### MC - Sophomore Year: Spring Semester

Course		Cr
CH 204	Organic Chemistry II	5
MA 282	Differential Equations	3
PH 263	General Physics III	4
<b>CHBE 250</b>	<b>Comp. Methods in Chem. Eng. – MTAP at UMCP</b>	<b>3</b>
<b>Total Credits</b>		<b>15</b>

### MC Transfer Student - Junior Year: Summer Semester

Course		Cr
<b>CHBE 301</b>	<b>CHBE Thermodynamics I</b>	<b>3</b>
ENGL 393	Technical Writing	3
<b>Total Credits</b>		<b>6</b>

## Transfer to UMCP BS Chemical/Biomolecular Engineering from MC AS Chemical Engineering

### UMCP - Junior Year: Fall Semester

Course		Cr
CHBE 410	Statistics and Experimental Design	3
CHBE 422	Chem. and Biomolecular Transport Phenomena I	3
CHBE 440	Chemical Kinetics & Reactor Design	3
CHEM 272	General Bioanalytical Chemistry Laboratory	2
ENGL 393	Technical Writing	3
CORE		3
<b>Total Credits</b>		<b>17</b>

### MC Transfer Student - Junior Year: Fall Semester

Course		Cr
CHBE 410	Statistics and Experimental Design	3
CHBE 422	Chem. and Biomolecular Transport Phenomena I	3
CHBE 440	Chemical Kinetics & Reactor Design	3
CHEM 272	General Bioanalytical Chemistry Laboratory	2
CORE		3
<b>Total Credits</b>		<b>14</b>

### MC Transfer Student - Junior Year: Winter Semester

Course		Cr
CHBE 302	CHBE Thermodynamics II	3

## Transfer to UMCP BS Chemical/Biomolecular Engineering from MC AS Chemical Engineering

### UMCP - Junior Year: Spring Semester

Course		Cr
BCHM 461	Biochemistry I	3
<b>or</b>		
BCHM 463	Biochemistry of Physiology	
ENMA 300	Intro to Materials and Their Applications	3
<b>or</b>		
ENMA 425	Introduction to Biomaterials	
<b>or</b>		
BIOE 453	Biomaterials	
<b>CHBE 424</b>	<b>Chem. and Biomolecular Transport Phenomena II</b>	<b>3</b>
<b>CHBE 426</b>	<b>Chemical and Biomolecular Separation Processes</b>	<b>3</b>
<b>CHBE 333</b>	<b>Communication Skills for Engineers</b>	<b>1</b>
CORE		3
<b>Total Credits</b>		<b>16</b>

### MC Transfer Student - Junior Year: Spring Semester

Course		Cr
BCHM 461	Biochemistry I	3
<b>or</b>		
BCHM 463	Biochemistry of Physiology	
ENMA 300	Intro to Materials and Their Applications	3
<b>or</b>		
ENMA 425	Introduction to Biomaterials	
<b>or</b>		
BIOE 453	Biomaterials	
<b>CHBE 424</b>	<b>Chem. and Biomolecular Transport Phenomena II</b>	<b>3</b>
<b>CHBE 426</b>	<b>Chemical and Biomolecular Separation Processes</b>	<b>3</b>
<b>CHBE 333</b>	<b>Communication Skills for Engineers</b>	<b>1</b>
CORE		3
<b>Total Credits</b>		<b>16</b>

## Transfer to UMCP BS Chemical/Biomolecular Engineering from MC AS Chemical Engineering

### UMCP - Senior Year: Fall Semester

Course	Cr
CHBE 437 Chemical & Biomolecular Engineering Laboratory	3
CHBE 442 Chemical & Biomolecular Systems Analysis	3
CHBE 444 Process Engineering Economics and Design I	3
Technical Elective*	3
CORE	3
<b>Total Credits</b>	<b>15</b>

\* [See our Technical Electives page for a list of approved courses »](#)

### UMCP - Senior Year: Spring Semester

Course	Cr
CHBE 446 Process Engineering Economics and Design II	3
Technical Elective*	3
Technical Elective*	3
CORE	3
CORE	3
<b>Total Credits</b>	<b>15</b>

### MC Transfer Student - Senior Year: Fall Semester

Course	Cr
CHBE 437 Chemical & Biomolecular Engineering Laboratory	3
CHBE 442 Chemical & Biomolecular Systems Analysis	3
CHBE 444 Process Engineering Economics and Design I	3
Technical Elective*	3
CORE	3
<b>Total Credits</b>	<b>15</b>

\* [See our Technical Electives page for a list of approved courses »](#)

### MC Transfer Student - Senior Year: Spring Semester

Course	Cr
CHBE 446 Process Engineering Economics and Design II	3
Technical Elective*	3
Technical Elective*	3
CORE	3
<b>Total Credits</b>	<b>12</b>