BIOENGINEERING

Four-Semester Transfer Sequence for UMCP

Note: This optimized transfer sequence DOES NOT satisfy the MC AS degree requirements.

UNIVERSITY of MARYLAND			MONTGOMERY COLLEGE		
Semester 1					
ENES 102	Mechanics I (Statics)	3	CHEM 131	Principles of Chemistry I	4
CHEM 135/6	Gen Chemistry for Engineers	4	ENGL 102	Critical Reading, Writing & Research	3
MATH 140	Calculus I	4	ENES 100	Intro. to Engineering Design	3
BIOE 120/1	Biology for Engineers w/lab*	4	MATH 181	Calculus I	4
			General Education Distribution Course**		3
Total Credits		15	Total Credits		17
Semester 2					
ENES 100	Intro. to Engineering Design	3	CHEM 132	Principles of Chemistry II	4
MATH 141	Calculus II	4	ENES 102	Statics	3
PHYS 161	Physics I	3	MATH 182	Calculus II	4
	Gen. Ed. Requirements**	3	PHYS 161	Physics I	3
ENGL 101	Intro to Writing	3	General Education Distribution Course**		3
Total Credits		16	Total Credits		17
Semester 3					
CHEM 231/2	Organic Chemistry I/Lab	4	CHEM 203	Organic Chemistry I	5
PHYS 260/1	Physics II/Lab	4	MATH 280	Multivariable Calculus	4
ENES 220	Mechanics II	3	PHYS 262	Physics II	4
MATH 241	Calculus III	4	ENES 120	Biology for Engineers*	3
Total Credits		15	Total Credits		16
Semester 4					
BIOE 232	Bioeng. Thermodynamics	3	ENES 220	Mechanics of Materials	3
BIOE 241	Biocomputation Methods***	3	MATH 282	Differential Equations	3
BSCI 330	Cell Biology & Physiology***	4	ENES 232	Thermodynamics	3
MATH 246	Differential Equations	3	General Education Distribution Course**		3
BIOE 371	Bioengineer. Math & Stats***	3	BIOE 241	Biocomputation Methods *** -MTAP	3
Total Credits		16	Total Credits		15
GRAND TOTAL		**62**	**GRAND TOTAL****		**65**
UMCP BS Bioengineering Curriculum			MC AS Bioengineering Curriculum		

* BIOE 120/121 (4) is a gateway course for transfer to Bioengineering Program. Contact bioengineering coordinator (mfrench@umd.edu) for permission to take this course and achieve at least a "B" before transfer. ENES 120 Biology for Engineers (3) is the MC equivalent of BIOE120. BIOE121 will remain to be taken at UMCP.

** Follow this link for information about the 4-year programs General Education requirements at UMCP.

***BIOE 121, BIOE 241, BIOE 371 and BSCI 330 for which MC has no equivalent, must be completed after transfer or throughMTAP. All 5th and 6th semester BIOE courses require BIOE 120, BIOE 121, and BIOE 241.

**** In order to receive an AS degree from MC, students need to take one more distribution course.

Student can take BIOL 212 Human Anatomy and Physiology I (4), BIOL210 Microbiology (4), or BIOL222 Genetics (4) as Biological Science elective; or ENES 221 Dynamics (3) as Engineering Science elective. Not required for AS degree.

BIOENGINEERING

Four-Semester Transfer Sequence for UMCP

Maryland Transfer Advantage Program (MTAP): Students planning transfer to UMCP should enroll in MTAP as soon as possible. Benefits include access to advising transfer advising at UMCP and tuition discounts on courses taken through MTAP at UMCP.

BIOENGINEERING

Suggested Five-Semester Transfer Sequence for UMCP

Note: This optimized transfer sequence DOES NOT satisfy the MC AS degree requirements.

Semester 1

CHEM 131	Principles of Chemistry I[1]	4
ENGL 101	Intro. to College Writing	3
ENES 100	Intro. to Engineering Design	3
MATH 165	Precalculus	4
Total Credits		14

Semester 2

CHEM 132	Principles of Chemistry II[1]	4
ENGL 102	Crit. Read., Writ. & Research	3
MATH 181	Calculus I	4
General Education Distribution Course		3
Total Credits		14

Semester 3

MATH 182	Calculus II	4
PHYS 161	Physics I	3
ENES 102	Statics	3
ENES 120	Biology for Engineers	3
Total Credits		13

Semester 4

CHEM 203	Organic Chemistry I	5
MATH 280	Multivariable Calculus	4
PHYS 262	Physics II	4
General Education Distribution Course		3
Total Credits		16

Semester 5

ENES 220	Mechanics of Materials	3
MATH 282	Differential Equations	3
ENES 232	Thermodynamics	3
General Education Distribution Course		3
BIOE 241	Biocomput. Methods - MTAP	3
Total Credits		15

GRAND TOTAL **72****

Semester 1 Curriculum Prerequisites*

CHEM 099	Introductory Chemistry[2]	0
MATH 096	Intermediate Algebra[3]	0
MATH 098	Intro to Trigonometry[3]	0

Courses Usually Offered During Summer Terms*

CHEM 131	Principles of Chemistry I	4
CHEM 132	Principles of Chemistry II	4
ENGL 102	Crit. Read., Writ. & Research	3
ENES 100	Introduction to Engineering Design	3
ENES 102	Statics	3
MATH 181	Calculus I	4
MATH 182	Calculus II	4
MATH 280	Multivariable Calculus	4
MATH 282	Differential Equations	3
PHYS 161	Physics I	3

Advising Notes

[1]CHEM 131/132 may be more appropriate than CHEM 135 for students who are taking MATH 096/MA098.

[2]CHEM 099 or a passing score on the Chemistry placement exam is required for CHEM 131 or CHEM135.

[3]MATH 096 and MATH 098 or equivalents are prerequisites for MATH 165.

Students taking the American English Language Writing (AELW)/American English Language Reading (AELR) course sequence should meet with an engineering advisor to determine appropriate math, physics, and engineering course enrollments.

*Students may meet prerequisites for first-semester curriculum courses by either successfully completing appropriate coursework in high school or achieving qualifying scores on SAT, AP, IB, or Accuplacer assessments. Students needing to complete prerequisites to first-semester curriculum may consider taking summer term courses.
**Note: ENGL 101 and MATH 165 do not transfer as part of the BS engineering degree requirements at UMCP.

Maryland Transfer Advantage Program (MTAP): Students planning transfer to UMCP should enroll in MTAP as soon as possible. Benefits include access to advising transfer advising at UMCP and tuition discounts on courses taken through MTAP at UMCP.