

**COURSE EQUIVALENCIES FROM ENGINEERING (BCCC) TO
BIOMEDICAL, INDUSTRIAL, MECHANICAL, or SOFTWARE ENGINEERING (RMU)**

SEMESTER BY SEMESTER BREAKDOWN OF COURSE EQUIVALENTS			
BCCC COURSES		RMU EQUIVALENT	
CRSE NO	COURSE TITLE	CRSE NO	COURSE TITLE
First Semester – 17 credits			
ENGL101	English I	COSK1220	Non Applicable
ECON101/102	Prin of Macroecon or Microecon	ECON1010	Survey of Economics
MATH221	Calculus & Analytic Geometry I	MATH2070	Calculus & Analytic Geometry I
CHEM101	Chemistry I	CHEM1210	Chemistry I and Lab (1215)
DRFT115	Engineering Graphics	ENGR2160	Engineering Graphics
Second Semester – 17/18 credits			
ENGL102	English II	COSK1221	Argument and Research
PHYS221	Engineering Physics I	PHYS1210	Physics I and Lab (1215)
MATH222	Calculus & Analytic Geometry II	MATH2170	Calculus & Analytic Geometry II
CHEM102	Chemistry II	CHEM2210	Chemistry II and Lab (2215) Biomedical Engineering Only
HLTH120	Health Science		Not Applicable
Third Semester			
COMM201	Speech	COSK2220	Public Speaking/Persuasion
ARTS, MUSC or PHIL	Humanities Elective	HUMA1010	Introduction to Humanities
PHYS222	Engineering Physics II	PHYS2210	Physics II and lab (2215)
PHYS241	Statics	ENGR1610	Statics and Strength of Materials
MATH230	Linear Algebra (Technical Elective)	MATH3400	Linear Algebra with Applications Not applicable to Biomedical and Software Engineering
Fourth Semester – 17/18 Credits			
COMP230	C++ Programming for Engin/Sci	INFS3184	C++ Programming
MATH224	Differential Equations	MATH3420	Differential Equations
MATH223	Calculus & Analytic Geometry III	MATH3090	Calculus & Analytic Geometry III
PHYS242	Dynamics	ENGR2100	Dynamics Not applicable to
ELEC291	Linear Circuit Analysis or Technical Elective		Industrial and Software Engineering Not Applicable

ROBERT MORRIS UNIVERSITY

**ACADEMIC REQUIREMENTS FOR
Bachelor of Science
Major: ENGINEERING
Concentration: Industrial Engineering**

EFFECTIVE FALL 2008

1. ROBERT MORRIS UNIVERSITY CORE--41 Credits

*CHEM1210	Chemistry I	3	CHEM101	HIST____	History Elective** or	3____
*CHEM1215	Chemistry I Lab	1	CHEM101	POLS____	Political Science Elective**	
COSK2221	Intercultural Communications	3	____	(**Choose from: HIST1100, HIST1200, HIST1500, HIST1600, HIST1700 HIST1800 or POLS1020)		
COSK1221	Argument and Research	3	ENGL102	HUMA1010	Humanities: Art and Music	3 ARTS,MUSC, PHIL
COSK2220	Public Speaking and Persuasion	3	COMM201	INFS1020	Introduction to Decision Support Systems	3____
COSK2230	Professional Communications	3	____	*MATH2070	Calculus w/Analytic Geometry I	4 MATH221
ECON1010	Survey of Economics	3	ECON101/102	PSYC1010	General Psychology	3____
ELIT____	Literature Elective	3	____	SOCI1010	Principles of Sociology or	3____
				SOCI2320	Contemporary American Social Problems	

2. MATH AND SCIENCE--25 Credits

*ENGR2080	Engineering Statistics	3	____	*PHYS1210	Physics I	3 PHYS221
*MATH2170	Calculus w/Analytic Geometry II	4	MATH222	*PHYS1215	Physics I Lab	1 PHYS221
*MATH3090	Calculus w/Analytic Geometry III	4	MATH223	PHYS2210	Physics II	3 PHYS222
MATH3400	Linear Algebra with Applic	3	MATH230**	PHYS2215	Physics II Lab	1 PHYS222
MATH3420	Differential Equations	3	MATH224			

3. BUSINESS--9 Credits

ACCT1020	Fundamentals of Accounting	3	____	MGMT3100	Management Theory and Practice	3____
MARK3100	Principles of Marketing	3	____			

4. BASIC ENGINEERING--9 Credits from the following:

ENGR1610	Statics and Strength of Materials	3	PHYS241	ENGR2180	Engineering Materials	3____
ENGR2140	Circuits and Electromagnetics	3	____	ENGR3110	Thermodynamics and Energetics	3____
ENGR2160	Engineering Graphics	3	DRFT115			

5. MAJOR--30 Credits

*ENGR1010	Introduction to Engineering	3	____	ENGR3800	Supply Chain Engineering	3____
*ENGR2500	Human Factors Engineering	3	____	ENGR4200	Safety and Methods Engineering	3____
ENGR3200	Value Design	3	____	*ENGR4900	Engineering Practice	3____
*ENGR3500	Material Handling and Plant Layout	3	____	*ENGR4950	Integrated Engineering Design	3____
ENGR3700	Manufacturing Planning and Control	3	____	INFS3184	C++ Programming	3 COMP230

6. APPROVED ELECTIVES--12 Credits Minimum (Choose four from the following: ENGR3250, ENGR3600, ENGR3900, ENGR4030, ENGR4650 or ENGR4700)

_____	_____	3	_____	_____	_____	3
_____	_____	3	_____	_____	_____	3

IMPORTANT NOTES:

Up to 51 credits apply to this degree program from BCCC

****Technical Elective in third semester**

1. ROBERT MORRIS UNIVERSITY CORE—41 Credits

*CHEM1210	Chemistry I	3	CHEM101	HIST_____	History Elective** or	3_____
*CHEM1215	Chemistry I Lab	1	CHEM101	POLS_____	Political Science Elective**	
COSK2221	Intercultural Communications	3_____		(**Choose from: HIST1100, HIST1200, HIST1500, HIST1600, HIST1700 HIST1800 or POLS1020)		
COSK1221	Argument and Research	3	ENGL102	HUMA1010	Humanities: Art and Music	3 ARTS,MUSC, PHIL
COSK2220	Public Speaking and Persuasion	3	COMM201	INFS1020	Introduction to Decision Support Systems	3_____
COSK2230	Professional Communications	3_____		*MATH2070	Calculus w/Analytic Geometry I	4 MATH221
ECON1010	Survey of Economics	3	ECON101/102	PSYC1010	General Psychology	3_____
ELIT_____	Literature Elective	3_____		SOCI1010	Principles of Sociology or	3_____
				SOCI2320	Contemporary American Social Problems	

2. MATH AND SCIENCE –25 Credits

*ENGR2080	Engineering Statistics	3_____		*PHYS1210	Physics I	3 PHYS221
*MATH2170	Calculus w/Analytic Geometry II	4	MATH222	*PHYS1215	Physics I Lab	1 PHYS221
*MATH3090	Calculus w/Analytic Geometry III	4	MATH223	PHYS2210	Physics II	3 PHYS222
MATH3420	Differential Equations	3	MATH224	PHYS2215	Physics II Lab	1 PHYS222
MATH4000	Discrete Mathematics	3_____				

3. BUSINESS –9 Credits

ACCT1020	Fundamentals of Accounting	3_____		MGMT3100	Management Theory and Practice	3_____
MARK3100	Principles of Marketing	3_____				

4. BASIC ENGINEERING—9 Credits from the following:

ENGR1610	Statics and Strength of Materials	3	PHYS241	ENGR2180	Engineering Materials	3_____
ENGR2140	Circuits and Electromagnetics	3_____		ENGR3110	Thermodynamics and Energetics	3_____
ENGR2160	Engineering Graphics	3	DRFT115			

5. MAJOR –30 Credits

*ENGR1010	Introduction to Engineering	3_____		*ENGR4900	Engineering Practice	3_____
ENGR3200	Value Design	3_____		*ENGR4950	Integrated Engineering Design	3_____
ENGR3400	Software Verification and Validation	3_____		INFS3151	JAVA Programming	3_____
*ENGR3410	Fundamentals of Software Engineering	3_____		INFS3184	Programming in C++	3 COMP230
ENGR4450	Distributed Systems Implementation	3_____		INFS3185	Data Structures with C++	3_____

6. APPROVED ELECTIVES—12 Credits Minimum

Students may choose from the following courses: ENGR3420 Computer Architecture for Software Engineers, ENGR4650 Simulation, ENGR4700 Robotics and Automation, INFS2130 Cobol Programming, INFS3188 Object-Oriented Applications Programming, INFS3220 Systems Analysis, INFS2210 Operating Systems Concepts, INFS4240 Database Management Systems, INFS3230 Networks/Data Computer Communications, INFS3235 Computer and Network Security, and/or INFS3236 Local Area Network Design Management.

_____	_____	3_____	_____	_____	_____	3_____
_____	_____	3_____	_____	_____	_____	3_____

IMPORTANT NOTES:

Up to 48 credits apply to this degree program from BCCC

1. ROBERT MORRIS UNIVERSITY CORE--41 Credits

*CHEM1210	Chemistry I	3	CHEM101	HIST____	History Elective** or	3____
*CHEM1215	Chemistry I Lab	1	CHEM101	POLS____	Political Science Elective**	
COSK2221	Intercultural Communications	3	____	(**Choose from: HIST1100, HIST1200, HIST1500, HIST1600, HIST1700 HIST1800 or POLS1020)		
COSK1221	Argument and Research	3	ENGL102	HUMA1010	Humanities: Art and Music	3 ARTS,MUSC, PHIL
COSK2220	Public Speaking and Persuasion	3	COMM201	INFS1020	Intro to Decision Support Systems	3 COMP230
COSK2230	Professional Communications	3	____	*MATH2070	Calculus w/Analytic Geometry I	4 MATH221
ECON1010	Survey of Economics	3	ECON101/102	PSYC1010	General Psychology	3____
ELIT____	Literature Elective	3	____	SOCI1010	Principles of Sociology or	3____
				SOCI2320 Contemporary American Social Problems		

2. MATH AND SCIENCE--31 Credits

*BIOL1210	Anatomy and Physiology I	3	____	*MATH3090	Calculus with Analytic Geometry III	4 MATH223
*BIOL1215	Anatomy and Physiology I Lab	1	____	MATH3420	Differential Equations	3 MATH224
*CHEM2210	Chemistry II	3	CHEM102	*PHYS1210	Physics I	3 PHYS221
*CHEM2215	Chemistry II Lab	1	CHEM102	*PHYS1215	Physics I Lab	1 PHYS221
*ENGR2080	Engineering Statistics	3	____	PHYS2210	Physics II	3 PHYS222
*MATH2170	Calculus with Analytic Geometry II	4	MATH222	PHYS2215	Physics II Lab	1 PHYS222

3. BUSINESS--9 Credits

ACCT1020	Fundamentals of Accounting	3	____	MGMT3100	Management Theory and Practice	3____
MARK3100	Principles of Marketing	3	____			

4. BASIC ENGINEERING—12 Credits

ENGR1610	Statics and Strength of Materials	3	PHYS241	ENGR2160	Engineering Graphics	3 DRFT115
ENGR2140	Circuits and Electromagnetics	3	____	ENGR2180	Engineering Materials	3____

5. MAJOR--31 Credits

*ENGR1010	Introduction to Engineering	3	____	*ENGR3510	Biomechanics	3____
*ENGR2100	Dynamics	3	PHYS242			3____
*ENGR2510	Biomedical Engineering Principles	3	____	*ENGR4520	Design and Manufacturing Biomedical	4____
*ENGR3110	Thermodynamics and Energetics	3	____	Engineering Development Systems		
ENGR3200	Value Design	3	____	*ENGR4900	Engineering Practice	3____
*ENGR3300	Fluid Mechanics	3	____	*ENGR4950	Integrated Engineering Design	3____

6. APPROVED ELECTIVES--3 Credits Minimum (Choose two from the following: ENGR4030, ENGR4170, ENGR4510 and ENGR4801

_____ 3____

Up to 55 credits apply to this degree program from BCCC

