MSU BILLINGS

ADVISING WORKSHEET

ASSOCIATE OF SCIENCE
PROGRAM OF STUDY IN PRE-ENGINEERING
General Bulletin 2018-2019

TRANSFER INSTITUTION(S):
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Montana State University Billings
Advising & Career Services
Phone: 406-657-2240
Fax: 406-657-2280
advising@msubillings.edu
www.msubillings.edu/advise/

Name _____

Student ID # _____

GENERAL EDUCATION REQUIREMENTS

General Education Category	Course #	Credits	Grade	Semester	Equivalent
Category I. Global Academic Skills A. Mathematics (3 credits)	M 171				
B. English (3 credits)	WRIT 101				
C. Communication and Information Literacy (3 credits)	COMX 111				
Category II: Natural Sciences (7 credits) 2 lectures (6 credits) & 1 lab (1 credit) (1 life science & 1 physical science & 1 lab)	BIOB 160				
	CHMY 141				
	CHMY 142				
Category III: Social Sciences and History (6 credits) A. Social Sciences (3 credits)					
B. History (3 credits)					
Category IV: Cultural Diversity (3 credits) A. Cultural Diversity (3 credits)					
Category V: Arts and Humanities (6 credits) A. Arts (3 credits)					
B. Humanities (3 credits)					

A minimum grade of "C-" required in all General Education courses.

Reviewed:

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GENERAL EDUCATION REQUIREMENTS

CATEGORY I: GLOBAL ACADEMIC SKILLS			9 credits
Subcategory A - Mathematics			**3 credits**
M	171	Calculus I	4
Subcategory B - English			**3 credits**
WRIT	101	College Writing I	3
Subcategory C- Communication & Information Literacy			**3 credits**
COMX	111	Introduction to Public Speaking	3

CATEGORY II: NATURAL SCIENCES		6 cr. lecture & 1 cr. lab
Subcategory A – Life Sciences		
BIOB	160	Principles of Living Systems 3
Subcategory B – Physical Sciences		
CHMY	141	College Chemistry I 3
CHMY	142	College Chemistry Laboratory I 1

CATEGORY III: SOCIAL SCIENCES AND HISTORY			6 CREDITS
Students are required to take one course from each subcategory			
Subcategory A – Social Sciences			**3 credits**
ANTY	217	Physical Anthropology & Archeology	3
BGEN	105	Introduction to Business	3
COMX	106	Communicating in a Dynamic Workplace	3
PSYX	231	Human Relations	3
ECNS	201	Principles of Microeconomics	3
ECNS	202	Principles of Macroeconomics	3
EDU	105	Education and Democracy	3
GPHY	141	Geography of World Regions	3
HTH	110	Personal Health and Wellness	3
PSCI	220	Introduction to Comparative Government	3
PSCI	210	Introduction to American Government	3
PSYX	100	Introduction to Psychology	3
PSYX	231	Human Relations	3
SOCI	101	Introduction to Sociology	3
SOCI	201	Social Problems	3
Subcategory B - History			**3 credits**
HSTA	101	American History I	3
HSTA	102	American History II	3
HSTR	101	Western Civilization I	3
HSTR	102	Western Civilization II	3
HSTR	103	Honors Western Civilization I	3
HSTR	104	Honors Western Civilization II	3
PSCI	230	Introduction to International Relations	3

CATEGORY IV: CULTURAL DIVERSITY			3 CREDITS
ANTY	220	Culture and Society	3
ARTH	160	Global Visual Culture	3
COMX	212	Introduction to Intercultural Communication	3
GPHY	121	Human Geography	3
HTH	270	Global Health Issues	3
LIT	230	World Literature Survey	3
NASX	105	Introduction to Native American Studies	3
NASX	205	Native Americans in Contemporary Society	3
PHL	271	Indian Philosophies and Religions	3
PHL	272	Chinese Philosophies and Religions	3
REHA	201	Introduction to Diversity	3
RLST	170	The Religious Quest	3
A&SC/WGSS	274	Women, Culture, and Society	3
SPNS	150	The Hispanic Tradition	3

CATEGORY V: ARTS & HUMANITIES			6 credits
Subcategory A – Fine Arts			**3 credits**
ARTZ	101	Art Fundamentals	3
ARTZ	105	Visual Language-Drawing	3
ARTZ	131	Ceramics for Non-majors	3
CRWR	240	Intro Creative Writing Workshop	3
FILM	160	Introduction to World Cinema	3
LIT	270	Film & Literature	3
MART	260	Computer Presentation and Animation	3
MUSI	101	Enjoyment of Music	3
MUSI	114	Band: MSUB Symphonic	1
MUSI	131	Jazz Ensemble I: MSUB	1
MUSI	147	Choral Ensemble: University Chorus	1
PHOT	154	Exploring Digital Photography	3
THTR	101	Introduction to Theatre	3
THTR	120	Introduction to Acting I	3
Subcategory B - Humanities			**3 credits**
ARTH	150	Introduction to Art History	3
HONR	111	Perspectives and Understanding	3
LIT	110	Introduction to Literature	3
LIT	240	The Bible as Literature	3
PHL	110	Introduction to Ethics	3
PHL	111	Philosophies of Life	3
PHL	254	People and Politics	3

Please note Pre-Engineering requires specific courses for General Education requirements, as listed above. This list does not reflect all approved General Education courses.

		Course	Credits	Grade	Semester	Equivalent
Required Courses						
EGEN	105	Introduction to General Engineering	2			
M	172	Calculus II	4			
M	273	Multivariable Calculus	4			
M	274	Introduction to Differential Equations	4			
PHSX	220	Physics I	3			
PHSX	221	Physics I Lab	1			
PHSX	232	Physics II & Thermo	3			
PHSX	233	Physics II & Thermo Lab	1			

Restricted Electives (**7 credits** selected with advisor approval)

ASSOCIATE OF SCIENCE DEGREE

Categories	**Credits**	**Earned**
General Education	*31-32	_____
Required Courses	22	_____
Restricted Electives	7	_____
Total	*60-61	_____

The catalog indicates that this program is 60 credits. However, this worksheet reflects the variation in Math credits used to satisfy the General Education Math requirement.

It is the student's responsibility to know and meet the requirements for graduation.

A minimum of 20 semester credits with 40 grade points must be earned at Montana State University Billings.

In order to complete the requirements for an A.S. Program of Study in Pre-Engineering in two years, it is generally necessary to carry 16-18 credit hours per semester.

NOTES:

Civil Engineering

BIOB	161	Principles of Living Systems Lab	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
DDSN	114	Introduction to CAD	3			
WRIT	201 or 220	College Writing II or Business & Professional Writing	3			

Civil Engineering – BioResource Option

BIOB	161	Principles of Living Systems Lab	1			
BIOB	170	Principles of Biological Diversity*	3			
BIOB	171	Principles of Biological Diversity Lab*	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
DDSN	114	Introduction to CAD	3			
WRIT	201 or 220	College Writing II or Business & Professional Writing	3			

*May be taken instead of PHSX 232/233

Biological Engineering

BIOB	161	Principles of Living Systems Lab	1			
BIOB	260	Cellular and Molecular Biology	3			
BIOB	261	Cellular and Molecular Biology Lab	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
CHMY	211	Elements of Organic Chemistry	3			
CHMY	212	Elements of Organic Chemistry Lab	1			

Chemical Engineering

BIOB	161	Principles of Living Systems Lab	1			
BIOB	260	Cellular and Molecular Biology	3			
BIOB	261	Cellular and Molecular Biology Lab	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
CHMY	211	Elements of Organic Chemistry	3			
CHMY	212	Elements of Organic Chemistry Lab	1			

Mechanical Engineering

DDSN	114	Introduction to AutoCAD	3			
DDSN	135	SolidWorks	3			

Electrical Engineering

ACTG	201	Principles of Financial Accounting	3			
ACTG	202	Principles of Managerial Accounting	3			
BIOB	161	Principles of Living Systems Lab	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
CSCI	111A	Programming with Java I	4			
CSCI	132	Basic Data Structures and Algorithms	4			
CSCI	232	Data Structures and Algorithms	4			
CSCI	246	Discrete Structures	4			
EGEN	201	Engineering Mechanics – Statics	3			
EGEN	202	Engineering Mechanics – Dynamics	3			
EGEN	205	Mechanics of Materials	3			

Computer Engineering

ACTG	201	Principles of Financial Accounting	3			
ACTG	202	Principles of Managerial Accounting	3			
BIOB	161	Principles of Living Systems Lab	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
CSCI	111A	Programming with Java I	4			
CSCI	132	Basic Data Structures and Algorithms	4			
CSCI	232	Data Structures and Algorithms	4			
CSCI	246	Discrete Structures	4			

Computer Science

CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry II Lab	1			
CSCI	111A	Programming with Java I	4			
CSCI	132	Basic Data Structures and Algorithms	4			
CSCI	232	Data Structures and Algorithms	4			
CSCI	246	Discrete Structures	4			

Industrial and Management Systems Engineering

CSCI	111A	Programming with Java I	4			