



**ADVISING WORKSHEET**  
 ASSOCIATE OF SCIENCE  
 PROGRAM OF STUDY IN PRE-ENGINEERING  
 General Bulletin 2015-2017

TRANSFER INSTITUTION(S):

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Name \_\_\_\_\_

Student ID # \_\_\_\_\_

**GENERAL EDUCATION REQUIREMENTS**

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

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

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

<b>CATEGORY III: SOCIAL SCIENCES AND HISTORY</b>			<b>6 CREDITS</b>
<i>Students are required to take one course from each subcategory</i>			
<b>Subcategory A – Social Sciences</b>			<b>3 credits</b>
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

<b>Subcategory B - History</b>			<b>3 credits</b>
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

<b>CATEGORY IV: CULTURAL DIVERSITY</b>			<b>3 credits</b>
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/SOCI	274	Women, Culture, and Society	3
SPNS	150	The Hispanic Tradition	3

<b>CATEGORY V: ARTS &amp; HUMANITIES</b>			<b>6 credits</b>
<b>Subcategory A – Fine Arts</b>			<b>3 credits</b>
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

<b>Subcategory B - Humanities</b>			<b>3 credits</b>
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

**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
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**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.*

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**NOTES:**

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			
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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			
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