

Montana Tech of the University of Montana  
**Bachelor of Science in SOFTWARE ENGINEERING**

with  
 Business Applications Emphasis  
 Electronic Control Systems Emphasis  
 Engineering Applications Emphasis  
 Statistics Emphasis  
 Technical Communication Emphasis

**2007 - 2008 Catalog**

**Fall Semester**

**Spring Semester**

**FRESHMAN YEAR**

			Credits
S.E.	1000	CS/SE Freshman Seminar	1 _____
C.S.	2106	Intro to Computer Sci. I	3 _____
Math	1520	Calculus I*	3 _____
Engl.	1046	English Comp.	3 _____
Chem	1056	General Chemistry I*	3 _____
Chem	1136	General Chemistry I Lab *	1 _____
**		Humanities Elective	_____
			3 _____
		<b>Total Credits</b>	<b>17</b>

			Credits
C.S.	2116	Intro to Computer Sci. II	3 _____
COMM	2016	Presenting Technical Information*	2 _____
Math	1530	Calculus II	3 _____
Phys	1046	General Physics - Mechanics	3 _____
**		Humanities Elective	_____
			3 _____
**		Social Science Elective	_____
			3 _____
		<b>Total Credits</b>	<b>17</b>

**SOPHOMORE YEAR**

C.S.	2156	Embedded Systems Develop.	3 _____
C.S.	2546	Object-Oriented Programming	3 _____
Econ	2606	Principles of Economics	3 _____
Math	2510	Calculus III	4 _____
Phys	2076	General Physics - H, S, & O	3 _____
Phys	2096	General Physics-H, S, & O Lab	1 _____
		<b>Total Credits</b>	<b>17</b>

C.S.	2656	Database Management	3 _____
C.S.	3166	Discrete Structures	3 _____
C.S.	3316	Data Struct & Algo. I	3 _____
Math	2236	Elementary Differential Equations	3 _____
Phys	2086	General Phys - Elect, Mag, & Wave	3 _____
Phys	2106	General Phys-Elect, Mag, & Wave Lab	1 _____
		<b>Total Credits</b>	<b>16</b>

**JUNIOR YEAR**

C.S.	3326	Data Struct. & Algo. II	3 _____
★Math	3316	Intro. Statistical Methods	3 _____
S.E.	3250W	Software Engineering I	3 _____
S.E.	3300	User-Interface Design	3 _____
***		Professional Elective	_____
			3 _____
		<b>Total Credits</b>	<b>15</b>

C.S.	3406	Operating Systems	3 _____
Engr	3210W	Sci. & Tech. Writing ****	3 _____
S.E.	3260	Software Engineering II	3 _____
S.E.	3280	Software Require. & Specification	3 _____
***		Professional Elective	_____
			3 _____
		<b>Total Credits</b>	<b>15</b>

**SENIOR YEAR**

C.S.	4526	Networking Principles	3 _____
M.EC	3630	Engineering Economy	3 _____
S.E.	4270	Princ. Software Archit.& Design	3 _____
S.E.	4920W	Senior Design I	3 _____
***		Professional Elective	_____
			3 _____
		<b>Total Credits</b>	<b>15</b>

Bus	3666	Operations & Prod Mgmt	3 _____
C.S.	3356	Programming Lang.	3 _____
C.S.	4406	Computer Architecture	3 _____
S.E.	4920W	Senior Design II	3 _____
S.E.	4940	Senior Seminar	1 _____
***		Professional Elective	_____
			3 _____
		<b>Total Credits</b>	<b>16</b>

*Minimum credits for B.S. degree in Software Engineering = 128*

\* Biol 1026 (Biology and Man with Lab) or Geoe 1010 (Physical Geology) may be substituted for Chem 1056/1136. Math 1516 Calculus I with Algebra Enhancement can replace Math 1520. COMM 1216 Principles of Speaking or COMM 1226 Public Speaking can replace COMM 2016. C.S. 4606 Senior Design Project can replace Internship.  
 \*\*Electives must be chosen to meet GER (3 credits in Social Sciences & 6 credits in Humanities).  
 \*\*\* 12 credits are to be taken in an area in which the student wishes to specialize. These are to be selected in consultation with the Computer Science Department; areas include  
 \*\*\*\*PTC 3216W Scientific & Technical Writing, PTC 3256W Scientific Report Writing, or PTC 3896W Business & Professional Writing can replace Engr. 3210W.  
 ★Students in the Statistics Option need to take Math 3316 before beginning the courses in the option.

# SOFTWARE ENGINEERING DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

<b>Business Applications</b>					
<i>Junior Year</i>			<i>Fall</i>	<i>Spring</i>	
BUS	2146	Accounting I	3		
BUS	2156	Accounting II		3	
<i>Senior Year</i>					
*	BUS	3316	Marketing		3
*	BUS	3416	Business Law I	3	
*	BUS	3516	Business Finance	3	
*	BUS	3616W	Management		3
* <i>select 2 courses out of 4</i>					
<b>Electronic Control Systems</b>					
<i>Junior Year</i>			<i>Fall</i>	<i>Spring</i>	
Phys.	3036	Electronics (prereq Phys. 2086 and 2106)	3		
Phys.	3036	Electronics (prereq Phys. 2086 and 2106)	3		
<i>Electric Circuits Sequence</i>					
Engr.	2530	Intro to Electric Circuits ((coreq Phys 2086)		3	
Engr.	2550	Electric Circuits Lab (coreq Engr 2530 & Phys 2106)		1	
Engr.	3550	Electric Circuits II (prereq Engr 2530)	3		
*	Engr.	3270	Digital Circuit Design (prereq Phys 3036)		3
*	Engr.	3570	Electronic Design (prereq Phys 3036 & Engr 3550)		3
*	Geop	4460	Applied Linear Systems (prereq Engr 3550)		3
<i>Electric Control Sequence</i>					
Engr	2530	Intro to Electric Circuits (coreq Phys 2086)		3	
+	Engr	2550	Electric Circuits Lab (coreq Engr 2530 & Phys 2106)		1
Engr	4450	Process Instrumentation and Control (prereq Engr 2530)	3		
+	Engr	4460	Process Instrumentation and Control Lab(coreq Engr 4450)	1	
Engr	3270	Digital Circuit Design (prereq Phys 3036)		3	
<i>Microprocessor Sequence</i>					
Engr	3270	Digital Circuit Design (prereq Phys 3036)		3	
Engr	4270	Intro to Microprocessors (prereq Engr 3270)	3		
Engr	2530	Intro to Electric Circuits (coreq Phys 2086)		3	
Engr	2550	Electric Circuits Lab (coreq Engr 2530 & Phys 2106)		1	
*select 1 course of 3; + take at least one to reach 13 credits of professional electives if short 1 credit of science					

<b>Engineering Applications</b>				
<b>Junior Year</b>			<u>Fall</u>	<u>Spring</u>
Engr.	2050	Statics (prereq Phys. 1046)	3	
Engr.	2150	Engineering Computer Graphics		3
<b>Senior Year</b>				
Engr.	3350	Mechanics of Materials	3	
Engr.	3150	Introductory Engineering Computer Applications		3
<b>Statistical Applications</b>				
<b>Junior Year</b>			<u>Fall</u>	<u>Spring</u>
*	MATH 4316	Experimental Design (prereq Math 3316)	3	
*	MATH 4326	Regression and Model Building (prereq Math 3316)		3
<b>Senior Year</b>				
	MATH 4336	Probability Theory (prereq Math 3316)	3	
*	MATH 4346	Statistical Theory (prereq Math 4336)		3
*	MATH 4356	Statistical Computing & Exploratory Data Analysis		3
*select 3 courses out of 4				
<b>Technical Communication</b>				
<b>Junior Year</b>			<u>Fall</u>	<u>Spring</u>
	PTC 3406	New Media Design I	3	
+	PTC 3216W	Scientific & Technical Writing		3
+	PTC 3896W	Business & Professional Writing		3
<b>Senior Year</b>				
+	PTC 3256W	Scientific Report Writing	3	
*	PTC 4406	New Media Design II	3	
*	PTC 4056W	Technical Editing		3
*	PTC 4126W	Advanced Writing		3
*	PTC 4426W	History, Technology, & Communication		3
+only one of these courses may be used to satisfy the required GER 300-level writing course				
*select 3 courses out of 7				

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