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

2009 - 2010 Catalog

		Fall Semester					Spring Semester		
FRESHMAN YEAR			Credits					Credits	
S.E.	1000	CS/SE Freshman Seminar	1		C.S.	2116	Intro to Computer Sci. II	3	
C.S.	2106	Intro to Computer Sci. I	3		COMM	2016	Presenting Technical Information*	3	
M	171	Calculus I	3		M	172	Calculus II	3	
WRIT	101	College Writing I	3		Phys	1046	General Physics - Mechanics	3	
CHMY	141	College Chemistry I*	3		**		Humanities Elective	3	
CHMY	142	College Chemistry I Lab *	1		**		Social Science Elective	3	
**		Humanities Elective	3						
		Total Credits	***17***				***Total Credits***	***18***	
SOPHOMORE YEAR									
C.S.	2156	Embedded Systems Develop.	3		C.S.	2656	Database Management	3	
C.S.	3166	Discrete Structures	3		C.S.	3326	Data Struct. & Algo. II	3	
C.S.	3316	Data Struct & Algo. I	3		ECNS	203	Principles of Economics	3	
M	273	Multivariable Calculus	4		M	274	Intro to Differential Equations	3	
Phys	2076	General Physics - H, S, & O	3		Phys	2086	General Phys - Elect, Mag, & Wave	3	
Phys	2096	General Physics-H, S, & O Lab	1		Phys	2106	General Phys-Elect, Mag, & Wave Lab	1	
		Total Credits	***17***				***Total Credits***	***16***	
JUNIOR YEAR									
★STAT	332	Statistics for Scientists & Engin	3		C.S.	4406	Computer Architecture	3	
Engr	3210W	Sci. & Tech. Writing ****	3		S.E.	3260	Software Engineering Maintenance	2	
S.E.	3250W	Software Engineering	3		S.E.	3280	Software Require. & Specification	3	
M.EC	3630	Engineering Economy	3		S.E.	3300	User-Interface Design	3	
***		Professional Elective	3		***		Professional Elective	3	
		Total Credits	***15***				***Total Credits***	***14***	
SENIOR YEAR									
C.S.	3406	Operating Systems	3						
C.S.	4526	Networking Principles	3		Bus	3666	Operations & Prod Mgmt	3	
S.E.	4270	Princ. Software Archit.&Design	3		C.S.	3356	Programming Lang.	3	
S.E.	4920	Senior Design I	3		C.S.	4356	Web Science	3	
***		Professional Elective	3		S.E.	4920	Senior Design II	3	
					S.E.	4940	Senior Seminar	1	
					***		Professional Elective	3	
		Total Credits	***15***				***Total Credits***	***16***	

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

* Biol 1026 (Biology and Man with Lab) or GEO 101 (Intro to Physical Geology) may be substituted for CHMY 141/142. COMM 1216 Principles of Speaking or COMM 1226 Public Speaking can replace COMM 2016.

**Electives must be chosen to meet GER (3 credits in Social Sciences & 6 credits in Humanities).

*** Professional electives are the classes that meet the Software Engineering degree options. (Professional electives on other side.)

****WRIT 321 Advanced Technical Writing, WRIT 325 Writing in the Sciences,WRIT 322 Advanced Business Writing can replace ENGR 3210W.

★Students in the Statistics Option need to take STAT 332 before beginning the courses in the option.

Last updated 4/16/2009

SOFTWARE ENGINEERING DEGREE OPTIONS

Professional Electives --- Junior and Senior Years
12 Credits for Each Option

Business Applications

				Fall	Spring
	Junior Year				
	ACTG	201	Principles of Fin Acct	3	
	ACTG	202	Principles of Mang Acct		3
	Senior Year				
*	BUS	3316W	Marketing		3
*	BUS	3416	Business Law I	3	
*	BUS	3516	Business Finance	3	
*	BUS	3616W	Management		3

* *select 2 courses out of 4*

Electronic Control Systems

				Fall	Spring
	Junior Year				
	Phys.	3036	Electronics (prereq Phys. 2086 and 2106)	3	
	Electric Circuits Sequence				
	EE	2530	Intro to Electric Circuits (((coreq Phys 2086)		3
	EE	2550	Electric Circuits Lab (coreq Engr 2530 & Phys 2106)		1
	EE	3550	Electric Circuits II (prereq Engr 2530)	4	
*	EE	3270	Digital Circuit Design (prereq Phys 3036)		3
*	EE	3570	Electronic Design (prereq Phys 3036 & Engr 3550)		3
*	Geop	446	Applied Linear Systems (prereq Engr 3550)		3
	Electric Control Sequence				
	EE	2530	Intro to Electric Circuits (coreq Phys 2086)		3
+	EE	2550	Electric Circuits Lab (coreq Engr 2530 & Phys 2106)		1
	EE	4450	Process Instrumentation and Control (prereq Engr 2530)	3	
+	EE	4460	Process Instrumentation and Control Lab(coreq Engr 4450)	1	
	EE	3270	Digital Circuit Design (prereq Phys 3036)		3
	Microprocessor Sequence				
	EE	3270	Digital Circuit Design (prereq Phys 3036)		3
	EE	4280	Intro to Microprocessors (prereq Engr 3270)	3	
	EE	2530	Intro to Electric Circuits (coreq Phys 2086)		3
	EE	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*

Engineering Applications

				Fall	Spring
	Junior Year				
*	Engr.	1050	Introduction to General Engineering	*1*	
	Engr.	2050	Statics (prereq Phys. 1046)	3	
	Engr.	2150	Introduction to Computer Aided Design & Problem Solving		2
*	Engr.	2060	Dynamics (prereq Phys. 1046)		3
	Senior Year				
	Engr.	3350	Mechanics of Materials	3	
*	Engr.	3360	Mechanics of Materials Lab	1	
*	Engr.	3150	Introductory Engineering Computer Applications		2
*	Engr.	4150	Engineering Computer Applications (even years only)		3

** select 2 or more courses to reach a minimum of 12 elective credits within the option.*

Statistical Applications

				Fall	Spring
	Junior Year				
*	STAT	441	Experimental Design (prereq STAT 332)	3	
*	STAT	432	Regression and Model Building (prereq STAT 332)		3
	Senior Year				
	STAT	421	Probability Theory (prereq STAT 332)	3	
*	STAT	422	Mathematical Statistics (prereq STAT 421)		3
*	STAT	435	Statictical Computing & EDA		3

** select 3 courses out of 4*

Technical Communication

				Fall	Spring
	Junior Year				
	PTC	3406W	New Media Design I	3	
+*	WRIT	321	Advanced Technical Writing		3
+*	WRIT	322	Business & Professional Writing		3
	Senior Year				
+*	WRIT	325	Writing in the Sciences	3	
*	PTC	4406	New Media Design II		3
*	WRIT	350	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*