

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
S.E.	1000	CS/SE Freshman Seminar	1 _____
C.S.	2106	Intro to Computer Sci. I	3 _____
M	171	Calculus I	3 _____
WRIT	101	College Writing I	3 _____
CHMY	141	College Chemistry I*	3 _____
CHMY	142	College Chemistry I Lab *	1 _____
**		Humanities Elective	_____
			3 _____
		Total Credits	17

			Credits
C.S.	2116	Intro to Computer Sci. II	3 _____
COMM	2016	Presenting Technical Information*	3 _____
M	172	Calculus II	3 _____
Phys	1046	General Physics - Mechanics	3 _____
**		Humanities Elective	_____
			3 _____
**		Social Science Elective	_____
			3 _____
		Total Credits	18

SOPHOMORE YEAR

C.S.	2156	Embedded Systems Develop.	3 _____
C.S.	3166	Discrete Structures	3 _____
C.S.	3316	Data Struct & Algo. I	3 _____
M	273	Multivariable Calculus	4 _____
Phys	2076	General Physics - H, S, & O	3 _____
Phys	2096	General Physics-H, S, & O Lab	1 _____
		Total Credits	17

C.S.	2656	Database Management	3 _____
C.S.	3326	Data Struct. & Algo. II	3 _____
ECNS	203	Principles of Economics	3 _____
M	274	Intro to Differential Equations	3 _____
Phys	2086	General Phys - Elect, Mag, & Wave	3 _____
Phys	2106	General Phys-Elect, Mag, & Wave Lab	1 _____
		Total Credits	16

JUNIOR YEAR

★STAT	332	Statistics for Scientists & Engin	3 _____
WRIT	3210W	Advanced Tech Writing ****	3 _____
S.E.	3250W	Software Engineering	3 _____
M.E.C	3630	Engineering Economy	3 _____
***		Professional Elective	_____
			3 _____
		Total Credits	15

C.S.	4406	Computer Architecture	3 _____
S.E.	3260	Software Engineering Maintenance	2 _____
S.E.	3280	Software Require. & Specification	3 _____
S.E.	3300	User-Interface Design	3 _____
***		Professional Elective	_____
			3 _____
		Total Credits	14

SENIOR YEAR

C.S.	3406	Operating Systems	3 _____
C.S.	4526	Networking Principles	3 _____
S.E.	4270	Princ. Software Archit.&Design	3 _____
S.E.	4920	Senior Design I	3 _____
***		Professional Elective	_____
			3 _____
		Total Credits	15

Bus	3666	Operations & Prod Mgmt	3 _____
C.S.	3356	Programming Lang.	3 _____
C.S.	4356	Web Science	3 _____
S.E.	4920	Senior Design II	3 _____
S.E.	4940	Senior Seminar	1 _____
***		Professional Elective	_____
			3 _____
		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.

SOFTWARE ENGINEERING DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

Business Applications				
			<u>Fall</u>	<u>Spring</u>
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				
			<u>Fall</u>	<u>Spring</u>
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

			<u>Fall</u>	<u>Spring</u>
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

			<u>Fall</u>	<u>Spring</u>
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	Statistical Computing & EDA		3

* select 3 courses out of 4

Technical Communication

			<u>Fall</u>	<u>Spring</u>
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