

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

2005 - 2006 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 _____
Total Credits			17

			Credits
C.S.	2116	Intro to Computer Sci. II	3 _____
HSS	1216	Principles of Speaking*	2 _____
Math	1530	Calculus II	3 _____
Phys	1046	General Physics - Mechanics	3 _____
**		Humanities Elective	_____
			3 _____
**		Social Science Elective	_____
			3 _____
Total Credits			17

SOPHOMORE YEAR

C.S.	2156	Assembly Language	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 _____
Total Credits			17

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 _____
Total Credits			16

JUNIOR YEAR

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

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

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 _____
Total Credits			15

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 _____
Total Credits			16

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.
 ** Electives must be chosen to met 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
 ****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.
Official in catalog

SOFTWARE ENGINEERING DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

Business Applications					
Junior Year			<u>Fall</u>	<u>Spring</u>	
BUS	2146	Accounting I	3		
BUS	2156	Accounting II		3	
Senior Year					
*	BUS	3416	Business Law I	3	
*	BUS	3616	Management	3	
*	BUS	3316	Marketing		3
*	BUS	3516	Business Finance		3
* <i>select 2 courses out of 4</i>					
Electronic Control Systems					
Junior Year			<u>Fall</u>	<u>Spring</u>	
Phys.	3036	Electronics (prereq Phys. 2086 and 2106)	3		
Engr.	2530	Intro to Electric Circuits(coreq Phys 2086)		3	
*	Engr.	2550	Electric Circuits Lab(coreq Engr 2530 & Phys 2106)		1
Senior Year					
*	Engr.	3270	Digital Circuit Design(prereq Phys. 3036)		3
*	Engr.	3500	Introduction to Signals, & Systems(prereq Engr 2530)	3	
*	Engr.	3560	Electric Circuits II(prereq Engr 3500)		3
*	Engr.	3570	Electronic Design(prereq Phys 3036 & Engr 3500)		3
*	Engr.	4410	Control System Theory and Design(prereq Engr 3500)	3	
*	Engr.	4450	Process Instrumentation and Control(prereq Engr 2530)	3	
*	Engr.	4460	Process Instrumentation and Control Lab(prereq Engr 2530)	1	
*	Phys.	4806	Intro to Microprocessors(prereq Phys. 3036)		3
* <i>select 2 or more courses to reach a minimum of 12 elective credits within the option.</i>					
Engineering Applications					
Junior Year			<u>Fall</u>	<u>Spring</u>	
Engr.	2050	Statics (prereq Phys. 1046)	3		
Engr.	2150	Engineering Computer Graphics		3	
Senior Year					
Engr.	3350	Mechanics of Materials	3		
Engr.	3150	Introductory Engineering Computer Applications		3	

Statistics

			<u>Fall</u>	<u>Spring</u>
Junior/Senior Year				
*	MATH 4316	Experimental Design (prerequisite Math 3316)	3	
*	MATH 4326	Regression and Model Building (prerequisite Math 3316)		3
Junior/Senior Year				
	MATH 4336	Probability Theory (prerequisite Math 3316)	3	
*	MATH 4346	Statistical Theory (prerequisite Math 4336)		3
*	MATH 4356	Statistical Computing & Exploratory Data Analysis (prerequisite Math 3316)		3

* select 3 courses out of 4

Technical Communication

			<u>Fall</u>	<u>Spring</u>
Junior Year				
*	PTC 3406	New Media Design I	3	
*	PTC 3896W	Business & Professional Writing		3
Senior Year				
*	PTC 4406	New Media Design II	3	
*	PTC 4056	Technical Editing		3
*	PTC 4126	Advanced Writing		3
*	PTC 4426	History, Technology, & Communication		3

* select 3 courses out of 6