Montana Tech of the University of Montana

Bachelor of Science in COMPUTER SCIENCE

with

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

2008-2009 Catalog

	Fall Semester				Spring Semester			
FRESHMAN YEAR			Credits				Credits	
C.S.	1006	C.S./S.E. Freshman Seminar	1		C.S.	2116	Intro to Computer Sci. II	3	
C.S.	2106	Intro to Computer Sci. I	3		Math	1530	Calculus II	3	
Math	1520	Calculus I	3		COMM	2016	Presenting Technical Inf.**	2	
Engl.	1046	English Comp.	3				Social Science Elective	3	
		Humanities Elective	3		*		Science Elective	3	
		Social Science Elective	3						
		Total Credits	***16***				***Total Credits***	***14***	
SOPHOMORE YEAR									
C.S.	2156	Embedded Systems Develop.	3		C.S.	2656	Database Management	3	
C.S.	2546	Object-Oriented Programming	3		C.S.	3166	Discrete Structures	3	
Math	2510	Calculus III	4		C.S.	3316	Data Struct & Algor. I	3	
Math	3256	Matrices & Lin. Algebra	3		Math	2236	Differential Equations	3	
*		Science Elective	3		*		Science Elective	3	
		Total Credits	***16***				***Total Credits***	***15***	
JUNIOR YEAR									
S.E.	3250W	Software Engineering I	3		S.E.	3260	Software Engineering II	3	
C.S.	3326	Data Struct. & Algor. II	3		C.S.	3356	Programming Lang.	3	
Math	3316	Intro. Statistical Methods	3		C.S.	3406	Operating Systems	3	
*		Science Elective	3		Engr	3210W	Scientific & Tech Writing**	3	
***		Professional Elective	3		***		Professional Elective	3	
		Total Credits	***15***				***Total Credits***	***15***	
SENIOR YEAR									
C.S.	4386	Theory of Computation	3		C.S.	4406	Computer Architecture	3	
C.S.	4526	Networking Principles	3		C.S.	4556	Artificial Intelligence	3	
C.S.	4916	Internship**	2		C.S.	4916	Internship**	2	
***		Professional Elective	3		C.S.	4946	Senior Seminar	1	
		Humanities Elective	3		Math	4106	Numerical Computing	3	
		Total Credits	***14***		***		Professional Elective	3	
							Total Credits	***15***	

Minimum credits for B.S. degree in Computer Science = 120

*Science electives must include a two-semester sequence of laboratory science (min. of 12 credits total): Either (1) BIOL 1086,1096, and 1116 plus 4 more science credits; (2) CHEM 1056 w/lab 1136, CHEM 1066 w/lab 1166 plus 4 more science credtis; (3) GEOE 1010 plus 5 more science credits; (4) PHYS 1046, 2076 w/lab 2096, and PHYS 2086 w/lab 2106 plus 1 more science credit.(take the physics sequence for the electronic Control Systems Emphasis.)

**COMM 1226 Public Speaking or COMM 1216 Prin. of Speaking can replace COMM 2016. C.S. 4606 Senior Design Project can replace internship. PTC 3216W Scientific & Technical Writing, PTC 3256W Scientific, Report Writing, or PTC 3896 W Business & Professional Writing can replace ENGR 3210W.

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

★Students in the Statistics Option need to take Math 3316 before beginning the courses in the option.

Official in catalog

COMPUTER SCIENCE DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

Business Applications

				Fall	Spring
	Junior Year				
	BUS	2146	Accounting I	3	
	BUS	2156	Accounting II		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 (coreg 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	4460	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				
*	MATH	4316	Experimental Design (prereqMath 3316)	3	
*	MATH	4326	Regression and Model Building (prereq Math 3316)		3
	Senior Year				
	MATH	4336	Probability Theory (prereq Math 3316)	3	
*	MATH	4346	Statistical Theory (prereq Math 4336)		3
*	MATH	4356	Statictical Computing & Exploratory Data Analysis		3

** select 3 courses out of 4*

Technical Communication

				Fall	Spring
	Junior Year				
	PTC	3406W	New Media Design I	3	
+*	PTC	3216W	Scientific & Technical Writing		3
+*	PTC	3896W	Business & Professional Writing		3
	Senior Year				
+*	PTC	3256W	Scientific Report Writing	3	
*	PTC	4056W	Technical Editing		3
*	PTC	4406	New Media Design II		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*

Last Updated 11/08