

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

2006 - 2007 Catalog

Fall Semester

Spring Semester

FRESHMAN YEAR

			Credits	
C.S.	1006	C.S./S.E. Freshman Seminar	1	_____
C.S.	2106	Intro to Computer Sci. I	3	_____
Math	1520	Calculus I**	3	_____
Engl.	1046	English Comp.	3	_____
		Humanities Elective	3	_____
		Social Science Elective	3	_____
Total Credits			16	

			Credits	
C.S.	2116	Intro to Computer Sci. II	3	_____
Math	1530	Calculus II	3	_____
HSS	1216	Prin. of Speaking **	2	_____
		Social Science Elective	3	_____
		* Science Elective	3	_____
Total Credits			14	

SOPHOMORE YEAR

C.S.	2156	Assembly Language	3	_____
C.S.	2546	Object-Oriented Programming	3	_____
Math	2510	Calculus III	4	_____
Math	3256	Matrices & Lin. Algebra	3	_____
*		Science Elective	3	_____
Total Credits			16	

C.S.	2656	Database Management	3	_____
C.S.	3166	Discrete Structures	3	_____
C.S.	3316	Date Struct & Algor. I	3	_____
Math	2236	Differential Equations	3	_____
*		Science Elective	3	_____
Total Credits			15	

JUNIOR YEAR

S.E.	3250	Software Engineering I	3	_____
C.S.	3326	Data Struct. & Algor. II	3	_____
Math	3316	Intro. Statistical Methods	3	_____
*		Science Elective	3	_____
***		Professional Elective	3	_____
Total Credits			15	

S.E.	3260W	Software Engineering II	3	_____
C.S.	3356	Programming Lang.	3	_____
C.S.	3406	Operating Systems	3	_____
Engr	3210W	Scientific & Tech Writing**	3	_____
***		Professional Elective	3	_____
Total Credits			15	

SENIOR YEAR

C.S.	4386	Theory of Computation	3	_____
C.S.	4526	Networking Principles	3	_____
C.S.	4916	Internship**	2	_____
***		Professional Elective	3	_____
		Humanities Elective	3	_____
Total Credits			14	

C.S.	4406	Computer Architecture	3	_____
C.S.	4556	Artificial Intelligence	3	_____
C.S.	4916	Internship**	2	_____
C.S.	4946	Senior Seminar	1	_____
Math	4106	Numerical Computing	3	_____
***		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 credits; (3) GEOE 1010, GEOL 2020 plus 6 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.)

**Math 1516 Calculus I with Algebra Enhancement can replace Math 1520. HSS 1226 Pubic Speaking can replace HSS 1216. C.S. 4606 Senior Design Project can replace Internship. PTC 3216W Scientific & Technical Writing, PTC 3256W Scientific Report Writing, or PTC 3896W Business & Professional Writing can replace ENGR 3210W.

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

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COMPUTER SCIENCE DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

Business Applications				
<i>Junior Year</i>			<u>Fall</u>	<u>Spring</u>
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>				
Electronic Control Systems				
<i>Junior Year</i>			<u>Fall</u>	<u>Spring</u>
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				

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
Statistical Applications				
Junior Year			<u>Fall</u>	<u>Spring</u>
*	MATH 4316	Experimental Design (prereq Math 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	Statistical Computing & Exploratory Data Analysis		3
* select 3 courses out of 4				
Technical Communication				
Junior Year			<u>Fall</u>	<u>Spring</u>
	PTC 3406	New Media Design I	3	
+*	PTC 3216W	Scientific & Technical Writing		3
Senior Year				
+*	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				

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