

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

2007-2008 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 _____
COMM	2016	Presenting Technical Inf.**	2 _____
		Social Science Elective	_____
			3 _____
		* Science Elective	_____
			3 _____
		Total Credits	14

SOPHOMORE YEAR

C.S.	2156	Embedded Systems Develop.	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.	3250W	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.	3260	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 2080 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.)

**Math 1516 Calculus I with Algebra Enhancement can replace Math 1520. 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 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.)

Official in catalog

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 (c (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 (Not official in catalog)

			<u>Fall</u>	<u>Spring</u>
Junior Year				
*	Engr. 1050	Introduction to General Engineering	1	
	Engr. 2050	Statics (prereq Phys. 1046)	3	
	Engr. 2150	Engineering Computer Graphics		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				
*	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

			<u>Fall</u>	<u>Spring</u>
Junior Year				
	PTC 3406	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 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