Bachelor of Science in COMPUTER SCIENCE     with     Business Applications Emphasis     Electronic Control Systems Emphasis     Electronic Control Systems Emphasis     Statistics Emphasis     Tetestiman YEAR   Credits   Spring Semester     PRESHMAN YEAR   Credits   Credits     CS. 1006   CS. 5. 2.11.6   Intro to Computer Sci. II   3     Credits   Credits   Credits     Colspan="2">Spring Semester     3   Total Credits <th colspan="9">Montana Tech of the University of Montana</th>	Montana Tech of the University of Montana										
with Business Applications Emphasis Electronic Applications Emphasis Statistics Emphasis Technical Communication Emphasis     2008-2009 Catalog     Spring Semester     PRESHMAN YEAR   Credits C.S. 2106   Credits C.S. 2106   Credits C.S. 2106     Computer Sci. I   3   Credits C.S. 2106   Credits Calculus II     Attach to Computer Sci. I   3   Credits C.S. 2106   Intro to Computer Sci. II   3     Math   1520   Calculus II   3     Intro to Computer Sci. II   3   Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"Colspan="2"	Bachelor of Science in COMPUTER SCIENCE										
Business Applications Emphasis Electronic Control Systems Emphasis Statistics Emphasis Technical Communications Emphasis Technical Communications Emphasis Technical Communications Emphasis Technical Communications Emphasis     Spring Semester     Spring Semester     Code: Spring Semester     Spring Semester     Credits   Credits   Credits     C.S. 1006   C.S./S.E. Freshman Seminar   Credits   Credits   Calculus II   3     Colspan="2">Credits   Credits   Credits     Colspan="2">Spring Semester     Total Computer Sci. II   3     Calculus II   3     Total Credits   16   Total Credits   16     Social Science Elective   3     Total Credits   16   Total Credits   14     Social Science Elective   3     Total Credits   16   Total Credits   3     Total Credits <th cols<="" th=""><th colspan="10">with</th></th>	<th colspan="10">with</th>	with									
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C.S. 1006 C.S./S.E. Freshman Seminar 1 C.S. 2116 Intro to Computer Sci. II 3 Math 1520 Calculus II 3 CoMM 2016 Presenting Technical Inf.** 2 CoMM 2016 Presenting Technical Inf.** 2 CoMM 2016 Presenting Technical Inf.** 2 CoMM 2016 Science Elective 3 CoVMM 2016 Data Struct & Algor. I 3 CoVMM 2016 Data Struct & Algor.	FRES	HMAN Y	EAR	Credi	ts				Credits		
C.S.2106Intro to Computer Sci. I3Math1530Calculus II3Math1520Calculus I3CoMM 2016Presenting Technical Inf.**2Engl.1046English Comp.3Social Science Elective3 $3$	C.S.	1006	C.S./S.E. Freshman Seminar	1		C.S.	2116	Intro to Computer Sci. II	3		
Math1520Calculus I3COMM 2016Presenting Technical Inf.**2Engl.1046English Comp.3	C.S.	2106	Intro to Computer Sci. I	3		Math	1530	Calculus II	3		
Engl.1046English Comp. Humanities Elective3 Social Science Elective3 Social Science Elective3 Science Elective3 Science Elective3 $\overline{Iotal Credits}$ $I6$ $Iotal Credits$ $I4$ SOPHOMORE YEARC.S.2156Embedded Systems Develop. $3$ C.S. $C.S.$ 2656Database Management $3$ C.S.Math2510Calculus III Science Elective $4$ C.S. $C.S.$ 3166Discrete Structures $3$ C.S.Math3256Matrices & Lin. Algebra $3$ Total Credits $If6$ $*$ $236$ Science Elective $3$ C.S.JUNIOR YEAR S.E. $3250W$ Software Engineering I Science Elective $3$ C.S. $S.E.$ $3260$ Software Engineering II Science Elective $3$ C.S. $3346$ Science Elective $3$ C.S.**Science Elective $3$ C.S. $C.S.$ $3260$ Software Engineering II Science Elective $3$ C.S. $3326$ Software Engineering II Science Elective $3$ C.S.**Science Elective $3$ C.S. $C.S.$ $3260$ Software Engineering II Scientific & Tech Writing** $3$ C.S.**Science Elective $3$ C.S. $C.S.$ $3260$ Programming Lang. $3$ C.S.***Professional Elective $3$ C.S. $C.S.$ $3260$ Professional Elective $3$ C.S.***Professional Elective $3$ C.S. $C.S.$ $C.S.$ $C.S.$ $C.S.$ ***Professi	Math	1520	Calculus I	3		COMM	[ 2016	Presenting Technical Inf.**	2		
Humanities Elective3Social Science Elective3*Science Elective3Total Credits16Total Credits14Sophomore VEARC.S.2156Embedded Systems Develop.3C.S.2656C.S.2546Object-Oriented Programming3C.S.3166Math2510Calculus III4C.S.3166Discrete Structures3Math3256Matrices & Lin. Algebra3Math2236Differential Equations3Science Elective3*Science Elective3*JUNIOR YEAR3C.S.3260Doftware Engineering I3*S.E.3250WSoftware Engineering I3C.S.3366Programming Lang.3**Science Elective3****Professional Elective3****Professional Elective3****Professional Elective3*****Professional Elective3****Total Credits15SENIOR YEAR	Engl.	1046	English Comp.	3				Social Science Elective			
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$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			Social Science Elective	2					3		
SOPHOMORE YEAR   C.S.   2156   Embedded Systems Develop.   3   C.S.   2656   Database Management   3			Total Credita	- 16				Total Credita	14		
SOPHOMORE YEAR     C.S.   2156   Embedded Systems Develop.   3			Total Creatis	10				Total Creatis	14		
C.S.   2156   Embedded Systems Develop.   3	SOPHOMORE YEAR										
C.S.   2546   Object-Oriented Programming   3	C.S.	2156	Embedded Systems Develop.	3		C.S.	2656	Database Management	3		
Math   2510   Calculus III   4	C.S.	2546	<b>Object-Oriented Programming</b>	3		C.S.	3166	Discrete Structures	3		
Math   3256   Matrices & Lin. Algebra   3   Math   2236   Differential Equations   3   3     *   Science Elective   3   *   Science Elective   3	Math	2510	Calculus III	4		C.S.	3316	Data Struct & Algor. I	3		
* Science Elective * Science Elective 3 Total Credits 16 3 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 Total Credits 15 3 Science Elective 3 Total Credits 15 7 SENIOR YEAR	Math	3256	Matrices & Lin. Algebra	3		Math	2236	Differential Equations	3		
3   3   3   7   3   7   3   7   15     JUNIOR YEAR   S.E.   3250W   Software Engineering I   3<	*		Science Elective			*		Science Elective			
Iotal Creatis   16   Iotal Creatis   15     JUNIOR YEAR   S.E.   3250W   Software Engineering I   3				3				The LOW PART	3		
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   Science Elective   3     ****   Professional Elective   3   ****   Professional Elective   3     ****   Professional Elective   3   ****   Total Credits   15     SENIOR YEAR   Senior YEAR   Senior Statistical Methods   15   Senior Statistical Methods   15			Total Creatts	10				Total Creatts	15		
S.E.   3250W   Software Engineering I   3 <t< th=""><td colspan="10">JUNIOR YEAR</td></t<>	JUNIOR YEAR										
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 *** Professional Elective 3 Professional Elective 3 *** Professional Elective 3 Total Credits 15 Total Credits 15 SENIOR YEAR	S.E.	3250W	Software Engineering I	3		S.E.	3260	Software Engineering II	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	C.S.	3326	Data Struct. & Algor. II	3		C.S.	3356	Programming Lang.	3		
* Science Elective Engr 3210W Scientific & Tech Writing** 3   *** Professional Elective 3 Professional Elective 3   Total Credits 15 Total Credits 15	Math	3316	Intro. Statistical Methods	3		C.S.	3406	Operating Systems	3		
*** Professional Elective 3 Total Credits 15 SENIOR YEAR	*		Science Elective			Engr	3210W	Scientific & Tech Writing**	3		
*** Professional Elective 3 Total Credits 15 SENIOR YEAR				3		***		Professional Elective			
Total Credits 15 Total Credits 15	***		Professional Elective						3		
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SENIOR YEAR			Total Credits	15				Total Credits	15		
	SENIOR YEAR										
C.S. 4386 Theory of Computation 3 C.S. 4406 Computer Architecture 3	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.	4526	Networking Principles	3		C.S.	4556	Artificial Intelligence	3		
C.S. 4916 Internship** 2 C.S. 4916 Internship** 2	C.S.	4916	Internship**	2		C.S.	4916	Internship**	2		
*** Professional Elective C.S. 4946 Senior Seminar 1	***		Professional Elective			C.S.	4946	Senior Seminar	1		
3 Math 4106 Numerical Computing 3				3		Math	4106	Numerical Computing	3		
Humanities Elective *** Professional Elective			Humanities Elective			***		Professional Elective			
3											
Total Credits 14 Total Credits 15				3					3		

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 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.

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## COMPUTER SCIENCE DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

			Business Applications		
	Junior	r Year		Fall	Spring
	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		
	Iunio	· Voar		Fall	Spring
	Phys.	3036	Electronics (prereq Phys. 2086 and 2106)	<u>1 au</u> 3	<u>opring</u>
	Electri	ic 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
	Electri	ic 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
	Micro	processor 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
*sele	EE EE EE ect 1 course	4280 2530 2550 of 3; + take at least one to r	Intro to Microprocessors (prereq Engr 3270) Intro to Electric Circuits (coreq Phys 2086) Electric Circuits Lab (coreq Engr 2530 & Phys 2106) reach 13 credits of professional electives if short 1 credit of science	3	3 1

			Engineering Applications		
	Junior	Year		Fall	<u>Spring</u>
*	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
* selec	ct 2 or more	e courses to re	ach a minimum of 12 elective credits within the option.		
			Statistical Applications		
	Junior	Year		Fall	<u>Spring</u>
*	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
* selec	ct 3 courses	out of 4			
			Technical Communication		
		V			с ·
	JUNIOR	<i>1 ear</i>	Now Modia Design I	<u>ran</u>	<u>Spring</u>
. *	PIC	3400W	New Media Design I	3	2
+*	PIC	3210W	Scientific & Technical Whiting		2 2
+*	PIC	3890W	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 thes	e courses may	be used to satisfy the required GER 300-level writing course		
*selec	t 3 courses	out of 7			

Last Updated 11/08