Montana Tech of the University of Montana

Bachelor of Science in COMPUTER SCIENCE

with

Business Applications Option
Electronic Control Systems Option
Engineering Applications Option
Statistics Option
Technical Communication Option
Health Care Informatics Option

2010-2011 Catalog

Fall Semester					Spring Semester				
FRESHMAN YEAR			Credits					Credits	
CSCI	194	Seminar	1		CSCI	121	Programming with Java II	3	
CSCI	111	Programming with Java I	3		M	172	Calculus II	3	
M	171	Calculus I	3		COMM	2016	Presenting Technical Inf.**	3	
WRIT	101	College Writing I	3				Social Science Elective	3	
		Humanities Elective	3		*		Science Elective	3	
		Social Science Elective	3						
		Total Credits	***16***				***Total Credits***	***15***	
SOPHOMORE YEAR									
CSCI	255	Intro. to Embedded Systems	3		CSCI	340	Database Design	3	
CSCI	246	Discrete Structures	3		CSCI	332	Design and Analysis of Algor	3	
CSCI	232	Data Struct & Algorithms	3		M	333	Linear Algebra	3	
M	273	Multivariable Calculus	4		M	274	Intro To Differential Equations	3	
*		Science Elective	3		*		Science Elective	3	
		Total Credits	***16***				***Total Credits***	***15***	
JUNIOR YEAR									
CSCI	305	Concepts of Prog. Languages	3		CSCI	361	Computer Architecture	3	
ESOF	322	Software Engineering	3		CSCI	460	Operating Systems	3	
STAT	332	Stats for Scientists & Engin *	3		ESOF	326	Software Maintenance	2	
*		Science Elective	3				Humanities Elective	3	
***		Professional Elective	3		***		Professional Elective	3	
		Total Credits	***15***				***Total Credits***	***14***	
SENIOR YEAR									
CSCI	438	Theory of Computation	3		CSCI	470	Web Science	3	
CSCI	466	Networks	3		CSCI	446	Artificial Intelligence	3	
CSCI	498	Internship**	2		CSCI	498	Internship**	2	
WRIT	321	Advanced Technical Writing**	3		CSCI	494	Seminar	1	
***		Professional Elective	3		M	410	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) CHMY 141 w/lab 142, CHMY 143 w/lab 144 plus 4 more science credits; (3) GEO 101 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 Option.)

**COMM 1226 Public Speaking or COMM 1216 Prin. of Speaking can replace COMM 2016. CSCI 486 Senior Project can replace internship. WRIT 325 Writing in the Sciences or WRIT 322 Advanced Business Writing can replace WRIT 321

***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 STAT 332 before beginning the courses in the option.

Official in catalog 2010-2011

COMPUTER SCIENCE DEGREE OPTIONS

Professional Electives --- Junior and Senior Years

12 Credits for Each Option

Business Applications

				Fall	Spring
	Junior Year				
	ACTG	201	Principles of Fin Acct	3	
	ACTG	202	Principles of Mang Acct		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	
	EE	2530	Intro to Electric Circuits (coreg Phys 2086)		3
	EE	2550	Electric Circuits Lab (coreq Engr 2530 & Phys 2106)		1
	Electric Circuits Sequence				
	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	446	Applied Linear Systems (prereq Engr 3550)		3
	Electric Control Sequence				
	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	

**select 1 course of 3; + take 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				
*	STAT	441	Experimental Design (prereq STAT 332)	3	
*	STAT	432	Regression and Model Building (prereq STAT 332)		3
	Senior Year				
	STAT	421	Probability Theory (prereq STAT 332)	3	
*	STAT	422	Mathematical Statistics (prereq STAT 421)		3
*	STAT	435	Statictical Computing & EDA		3

** select 3 courses out of 4*

Technical Communication

				Fall	Spring
	Junior Year				
*	PTC	3156	Digital Video Productions	3	
	PTC	3406W	New Media Design I	3	
+*	WRIT	321	Advanced Technical Writing		3
+*	WRIT	322	Advanced Business Writing		3
	Senior Year				
*	CSCI	311	Advanced Web Development		3
+*	WRIT	325	Writing in the Sciences	3	
*	PTC	4406	New Media Design II	3	
*	PTC	4406	New Media Design II		3
*	PTC	4126W	Advanced Writing		3
*	PTC	4426W	History, Technology, & Communication		3

+only one may be used to satisfy GEN Ed 300-level writing requirement.

**select 3 courses out of 9*

Health Care Informatics

				Fall	Spring
	Junior Year				
	HCI	1016	Intro to Health Care Informatics	3	
*	HCI	2106	Health Care Ethics and Requlations (prereq HCI 1016)		3
*	HCI	2256	Date, Information & Knowledge (prereq IT 2426, HCI 1016)	2	
*	HCI	3106	Health Care Delivery in the US I (prereq HCI 1016)	3	
	Senior Year				
*	HCI	3126	Health Care Delivery in the US II (prereq HCI 3106)		3
*	HCI	3206	Inf. Systems Security		3
*	HCI	4106	Projects and Systems Management	4	
*	HCI	4206	Public Health Inf. (prereq HCI 3106)	3	

** Select 3 courses of 8; student must have the approval of the student's advisor & the HCI department*