Montana Tech of the University of Montana
Bachelor of Science in SOFTWARE ENGINEERING
with

Name: _____

Choose One Option Sophomore Year

☐ Business Applications Option
☐ Electronic Control Systems Option
☐ Engineering Applications Option

☐ Statistical Applications Option
☐ Technical Communications Option
☐ Health Care Informatics Option
☐ Game Development Option

2015 - 2016 Catalog

FRESHMAN YEAR

Fall Semester			Credits	Sem	Grade	Spring Semester			Credits	Sem	Grade
ESOF	194	CS&SE Freshman Seminar	1			CSCI	136	Fund. of Computer Science II	3		
CSCI	135	Fund. of Computer Science I	3			COMX	230	Presenting Technical Information*	3		
M	171	Calculus I	3			M	172	Calculus II	3		
WRIT	101	College Writing I****	3			PHSX	234	General Physics - Mechanics	3		
CHMY	141	College Chemistry I*	3			--	--	*Humanities Elective**	--	--	--
CHMY	142	College Chemistry I Lab *	1						3		
--	--	*Humanities Elective**	--	--	--	--	--	*Social Science Elective**	--	--	--
			3						3		
		Total Credits	**17**					***Total Credits***	**18**		

SOPHOMORE YEAR

Fall Semester			Credits	Sem	Grade	Spring Semester			Credits	Sem	Grade
CSCI	232	Data Struct & Algorithms	3			CSCI	332	Design and Analysis of Algor.	3		
CSCI	246	Discrete Structures	3			CSCI	340	Database Design	3		
CSCI	255	Intro. To Embedded Systems	3			ECNS	203	Principles of Micro and Macro	3		
M	273	Multivariable Calculus	4			M	274	Intro to Differential Equations	3		
PHSX	235	General Physics - H, S, & O	3			PHSX	237	General Phys - Elect, Mag, & Wave	3		
PHSX	236	General Physics-H, S, & O Lab	1			PHSX	238	General Phys-Elect, Mag, & Wave Lab	1		
		Total Credits	**17**					***Total Credits***	**16**		

JUNIOR YEAR

Fall Semester			Credits	Sem	Grade	Spring Semester			Credits	Sem	Grade
CSCI	305	Concepts of Programming Lang	3			CSCI	361	Computer Architecture	3		
COMX	338	Usability Testing	3			ESOF	326	Software Maintenance	2		
ESOF	322	Software Engineering	3			ESOF	328	Requirements & Specifications	3		
★STAT	332	Statistics for Scientists & Engin	3			WRIT	321W	Adv. Technical Writing****	3		
--	--	*Professional Elective***	--	--	--	--	--	*Professional Elective***	--	--	--
			3						3		
		Total Credits	**15**					***Total Credits***	**14**		

SENIOR YEAR

Fall Semester			Credits	Sem	Grade	Spring Semester			Credits	Sem	Grade
CSCI	466	Networks	3			CSCI	460	Operating Systems	3		
EGEN	325	Engr. Economic Analysis	3			CSCI	470	Web Science	3		
ESOF	427	Software Design & Architecture	3			ESOF	411	Software Verification & Validation	3		
ESOF	486	Software Eng. Design Project I	3			ESOF	487	Software Eng. Design Project II	3		
--	--	*Professional Elective***	--	--	--	ESOF	494	Senior Seminar	1		
			3			--	--	*Professional Elective***	--	--	--
		Total Credits	**15**						3		
								Total Credits	**16**		

Minimum credits for B.S. degree in Software Engineering = 128

* BIOB 101 (Discover Biology) and BIOB 102 (Discover Biology Lab) or GEO 101 (Intro to Physical Geology) may be substituted for CHMY 141/142.
  COMX 111 Intr to Public Speaking or COMX 211 Adv Public Speaking can replace COMX 230.
**Electives must be chosen to meet GER (3 credits in Social Sciences & 6 credits in Humanities).
*** Professional electives are the classes that meet the Software Engineering degree options. (Professional electives on other side.)
****WRIT 121 Intro to Technical Writing can replace WRIT 101 College Writing I. WRIT 325W Writing in the Sciences,WRIT 322W Advanced Business Writing can replace WRIT 321W.

★Students in the Statistics Option need to take STAT 332 before beginning the courses in the option.

Official in catalog 2015 - 2016

SOFTWARE ENGINEERING DEGREE OPTIONS

Professional Electives --- Junior and Senior Years
12 Credits for Each Option

Business Applications

			Fall	Spring	Sem/Gr
	Junior Year				
	ACTG 201	Principles of Fin Acct	3		
	ACTG 202	Principles of Mang Acct		3	
	Senior Year				
*	BMKT 325W	Principles of Marketing		3	
*	BGEN 235	Business Law I	3		
*	BMGT 335W	Management and Organization		3	
*	BFIN 322	Business Finance	3		

* select 2 courses out of 4

Electronic Control Systems

			Fall	Spring	Sem/Gr
	Junior Year				
	EELE 201	Circuits I for Engineering (coreq M 172)	3		
*	EELE 202	Circuits I for Engineering Lab (coreq EELE 201)	1		
*	EELE 261	Intro. To Logic Circuits (prereq EELE 201, 202)		3	
*	EELE 465	Microcontroller Applications (prereq CSCI 255) (even years only)		3	
	Senior Year				
*	PHSX 322	Electronics for Scientists (prereq PHSX 237)		3	
*	EELE 203	Circuits II for Engineering (prereq EELE 201, 202 & M 274)	4		
*	EELE 423	Process Instrumentation and Control (prereq EELE 201 & 202)	4		
*	EELE 317	Electronics (prereq EELE 203)		3	
*	Geop 446	Applied Linear Systems (prereq EELE 203 or M 405 or PHSX 453)		3	

* select 3 or more courses to reach a minimum of 12 elective credits within the option

+ Engineering Applications

			Fall	Spring	Sem/Gr
	Junior Year				
*	EGEN 105	Introduction to General Engineering	*1*		
	EGEN 201	Statics (prereq Phys. 1046) (prereq PHSX 234)	3		
	EGEN 215	Introduction to Computer Aided Design & Problem Solving		2	
*	EGEN 202	Dynamics (prereq EGEN 201 & M 172)		3	
	Senior Year				
	EGEN 305	Mechanics of Materials	3		
*	EGEN 306	Mechanics of Materials Lab	1		
*	EGEN 318	Computer Applications for Engineering Design		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	Sem/Gr
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	Sem/Gr
Junior Year						
*	PTC	3156	Digital Video Productions	3		
	PTC	3406W	New Media Design I	3		
+*	WRIT	321W	Advanced Technical Writing		3	
+*	WRIT	322W	Advanced Business Writing		3	
Senior Year						
*	CSCI	311	Data Driven Web Applications		3	
*	COMX	442	History, Technology, & Communication		3	
+*	WRIT	325W	Writing in the Sciences	3		
*	WRIT	350W	Technical Editing		3	
*	WRIT	412W	Advanced Writing		3	
*	PTC	4406	New Media Design II		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	Sem/Gr
Junior Year						
	HIT	101	Intro to Health Care Informatics	3		
*	HIT	230	Overview of HCI Systems (prereq HIT 101)		4	
*	HIT	260	Workflow Process and Redesign (prereq HIT 101, CAPP 158)	2		
*	HCI	310	Health Care Delivery in the US I (prereq HIT 101)	3		
*	HCI	316	Health Care Delivery in the US II (prereq HIT 101)		3	
Senior Year						
*	HCI	312	Health Care Delivery in the US II (prereq HCI 310)		3	
*	HCI	320	Inf. Systems Security		3	
*	HCI	410	Projects and Systems Management	4		
*	HCI	420	Public Health Inf. (prereq HCI 310)	3		

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

Game Development

				Fall	Spring	Sem/Gr
Junior Year						
	PTC	330	Introduction to Game Design	3		
	PTC	3406W	New Media Design I	3		
	CSCI	441	Computer Graphics		3	
Senior						
	PTC	4406W	New Media Design II		3	
	CSCI	446	Artificial Intelligence	3		
	CSCI	491	Special Topics - Computer Game Development		3	
	CSCI	492	Independent Study - Computer Game Development Project *	3		

Select 12 credits from listed courses; *Project must be approved by CS faculty