

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

Name: _____ with Business Applications Statistical Applications
 Electronic Control Systems Option Technical Communications
Choose One Focus Area Sophomore Year Engineering Applications Game Development

2019- 2020 Catalog

Fall Semester

FRESHMAN YEAR			Credits	Sem	Grade
CSCI 194	Freshman Seminar	1	_____	_____	_____
CSCI 135	Fund. of Computer Science I	3	_____	_____	_____
M 171	Calculus I	3	_____	_____	_____
WRIT 121	Intro to Technical Writing**	3	_____	_____	_____
CHMY 141	College Chemistry I*	3	_____	_____	_____
CHMY 142	College Chemistry I Lab *	1	_____	_____	_____
-- --	<i>Humanities Elective**</i>	--	---	---	---
		3	_____	_____	_____
Total Credits		17			

Spring Semester

			Credits	Sem	Grade
CSCI 136	Fund. of Computer Science II	3	_____	_____	_____
COMX 230	Presenting Technical Information*	3	_____	_____	_____
M 172	Calculus II	3	_____	_____	_____
PHSX 234	General Physics - Mechanics	3	_____	_____	_____
CSCI 255	Intro. To Embedded Systems	3	_____	_____	_____
-- --	<i>Humanities Elective**</i>	--	---	---	---
		3	_____	_____	_____
Total Credits		18			

SOPHOMORE YEAR			Credits	Sem	Grade
CSCI 232	Data Struct & Algorithms	3	_____	_____	_____
CSCI 246	Discrete Structures	3	_____	_____	_____
COMX 338	Usability Testing	3	_____	_____	_____
M 273	Multivariable Calculus	4	_____	_____	_____
PHSX 235	General Physics - H, S, & O	3	_____	_____	_____
PHSX 236	General Physics-H, S, & O Lab	1	_____	_____	_____
		17	_____	_____	_____
Total Credits		17			

CSCI 332	Design and Analysis of Algor.	3	_____	_____	_____
ECNS 203	Principles of Micro and Macro	3	_____	_____	_____
M 274	Intro to Differential Equations	3	_____	_____	_____
PHSX 237	General Phys - Elect, Mag, & Wave	3	_____	_____	_____
PHSX 238	General Phys-Elect, Mag, & Wave Lab	1	_____	_____	_____
-- --	<i>Social Science Elective***</i>	--	---	---	---
		3	_____	_____	_____
Total Credits		16			

JUNIOR YEAR			Credits	Sem	Grade
CSCI 305	Concepts of Programming Lang	3	_____	_____	_____
BMIS 375	Data Analytics	3	_____	_____	_____
ESOF 322	Software Engineering	3	_____	_____	_____
★STAT 332	Statistics for Scientists & Engin	3	_____	_____	_____
-- --	<i>Professional Elective***</i>	--	---	---	---
		3	_____	_____	_____
Total Credits		15			

CSCI 361	Computer Architecture	3	_____	_____	_____
ESOF 326	Software Maintenance	3	_____	_____	_____
ESOF 328	Requirements & Specifications	3	_____	_____	_____
WRIT 321W	Adv. Technical Writing****	3	_____	_____	_____
CSCI 440	Advanced Database	3	_____	_____	_____
		15	_____	_____	_____
Total Credits		15			

SENIOR YEAR			Credits	Sem	Grade
CSCI 466	Networks	3	_____	_____	_____
EGEN 325	Engr. Economic Analysis	3	_____	_____	_____
ESOF 427	Software Design & Architecture	3	_____	_____	_____
ESOF 486	Senior Design Project I	2	_____	_____	_____
-- --	<i>Free Elective</i>	--	---	---	---
		1	_____	_____	_____
-- --	<i>Professional Elective***</i>	--	---	---	---
		3	_____	_____	_____
Total Credits		15			

CSCI 460	Operating Systems	3	_____	_____	_____
CSCI 470	Web Science	3	_____	_____	_____
ESOF 411	Software Verification & Validation	3	_____	_____	_____
ESOF 487	Senior Design Project II	2	_____	_____	_____
CSCI 494	Senior Seminar	1	_____	_____	_____
-- --	<i>Professional Elective***</i>	--	---	---	---
		3	_____	_____	_____
Total Credits		15			

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 focus areas (Professional electives on other side.)

****WRIT 101 College Writing I can replace WRIT 121 Intro to Technical Writing. WRIT 325W Writing in the Sciences, WRIT 322W Advanced Business Writing can replace WRIT 321W.

★ Students in the Statistics Focus Area need to take STAT 332 before beginning the courses in the focus area.

SOFTWARE ENGINEERING DEGREE FOCUS AREAS

Professional Electives --- Junior and Senior Years

9 Credits for Each Focus Area

Business Applications					
<i>Junior Year</i>		<u>Fall</u>	<u>Spring</u>	<u>Sem/Gr</u>	
ACTG 201	Principles of Financial Accounting	3		_____	
ACTG 202	Principles of Managerial Accounting		3	_____	
 <i>Senior Year</i>					
* BMKT 325W	Principles of Marketing		3	_____	
* BGEN 235	Business Law	3		_____	
* BMGT 335W	Management and Organization		3	_____	
* BFIN 322	Business Finance	3		_____	
* <i>select 1 course out of 4</i>					
Electronic Control Systems					
<i>Junior Year</i>		<u>Fall</u>	<u>Spring</u>	<u>Sem/Gr</u>	
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	_____	
 <i>Senior Year</i>					
* PHSX 322	Electronics for Scientists (prereq PHSX 237, 238)		3	_____	
* EELE 203	Circuits II for Engineering (prereq EELE 201, 202 & M 274)	4		_____	
* EELE 320	Process Instrumentation and Control (prereq EELE 201 & 202)	4		_____	
* EELE 317	Electronics (prereq EELE 203)		3	_____	
* Geop 446	Applied Linear Systems (prereq M274)		3	_____	
* <i>select 2 or more courses to reach a minimum of 9 elective credits within the focus area</i>					
Engineering Applications					
<i>Junior Year</i>		<u>Fall</u>	<u>Spring</u>	<u>Sem/Gr</u>	
EGEN 101	Introduction Engineering Calculations & Problem Solving	3		_____	
EGEN 201	Statics (prereq PHSX 234)		3	_____	
* EMEC 215	Intro to Modeling for Mechanical Engineers (prereq M172, EGEN 101)		1	_____	
 <i>Senior Year</i>					
* EGEN 202	Dynamics (prereq EGEN 201 & M 172)	3		_____	
* EGEN 305	Mechanics of Materials (prereq EGEN 201 & M 172)	3		_____	
* EGEN 306	Mechanics of Materials Lab (co-req EGEN 305)	1		_____	
* EGEN 318	Computer Applications for Engineering(prereq EMEC 215, coreq EGEN 305)		2	_____	
* <i>select 1 or more courses to reach a minimum of 9 elective credits within the focus area</i>					

Statistical Applications

			<u>Fall</u>	<u>Spring</u>	<u>Sem/Gr</u>
Junior Year					
	STAT 421	Probability Theory (every other year, prereq STAT 332)	3		_____
*	STAT 422	Mathematical Statistics (every other year, prereq STAT 421)		3	_____
*	STAT 441	Experimental Design (prereq STAT 332)	3		_____
*	STAT 432	Regression and Model Building (prereq STAT 332)		3	_____
Senior Year					
*	STAT 435	Statistical Computing & EDA (prereq STAT 332)		3	_____
*	STAT 453	Statistical Learning and Data Science I (every other year, prereq STAT 432)	3		_____
*	STAT 454	Statistical Learning and Data Science II (every other year, prereq STAT 453)		3	_____

* select 2 courses out of 6

Technical Communication

			<u>Fall</u>	<u>Spring</u>	<u>Sem/Gr</u>
Junior Year					
*	PTC 3156	Digital Video Productions	3		_____
	MART 310W	New Media I	3		_____
+*	WRIT 321W	Advanced Technical Writing		3	_____
+*	WRIT 322W	Advanced Business Writing		3	_____
Senior Year					
*	CSCI 311	Data Driven Web Applications (prereq CSCI 135, or 110, or 114, or 112, or 117)		3	_____
*	COMX 442	History, Technology, & Communication		3	_____
+*	WRIT 325W	Writing in the Sciences	3		_____
*	WRIT 350W	Technical Editing (prereq WRIT 321W, or 322W, or 325W)		3	_____
*	PTC 4406	New Media II		3	_____

+ in addition to GenEd 300-level writing requirement.

* select 2 courses out of 8

Game Development

			<u>Fall</u>	<u>Spring</u>	<u>Sem/Gr</u>
Junior Year					
	PTC 330	Introduction to Game Design	3		_____
	MART 310W	New Media I	3		_____
	CSCI 441	Computer Graphics (prereq CSCI 332, M333)		3	_____
Senior					
	PTC 4406W	New Media II		3	_____
	CSCI 446	Artificial Intelligence (prereq CSCI 332)	3		_____
	CSCI 491	Special Topics - Computer Game Development		3	_____
	CSCI 492	Independent Study - Computer Game Development Project *		3	_____

Select 9 credits from listed courses; *Project must be approved by CS faculty