

# BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING

FRESHMAN YEAR											
FIRST SEMESTER						SECOND SEMESTER					
Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite	Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			Lec	Lab					Lec	Lab	
ALIS 1211	Introduction to Islamic culture	2	2	0		ALIS 1212	The Social System in Islam	2	2	0	ALIS 1211
COMM 1311	Written Communication	3	3	0		COMM 1312	Writing and Research	3	3	0	COMM 1311
UNIV 1211	Prof. Development and Competencies	2	2	0		UNIV 1212	Critical Thinking and Problem Solving	2	2	0	UNIV 1211
MATH 1422	Calculus I	4	4	1	PRPM 0022	MATH 1423	Calculus II	4	4	1	MATH 1422
GEIT 1411	Computer Science I	4	3	2		GEIT 1412	Computer Science II	4	3	2	GEIT 1411
PHED 1111	Active Living Lifestyle	1	1	0		PHYS 1421	Physics for Engineers I	4	3	3	PRPM 0022
<b>Total Credit Hours</b>		<b>16</b>				<b>Total Credit Hours</b>		<b>19</b>			

SOPHOMORE YEAR											
FIRST SEMESTER						SECOND SEMESTER					
Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite	Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			Lec	Lab					Lec	Lab	
ALIS 2211	Linguistic Communication Skills	2	2	0	ALIS 1212	ALIS 2212	The Biography of Prophet Mohammad	2	2	0	ALIS 2211
UNIV 1213	Leadership and Teamwork	2	2	0	UNIV 1212	COMM 2312	Technical and Professional Communications	3	3	0	COMM 2311
PHYS 1422	Physics for Engineers II	4	3	3	PHYS 1421 MATH 1422	ASSE 2111	Learning Outcome Assessment I	1	1	1	Sophomore Standing
MATH 1324	Calculus III	3	3	1	MATH 1423	GEIT 2331	Mathematical Reasoning and Algorithmic Thinking	3	3	0	GEIT 1412
GEIT 2421	Data Structures	4	3	2	GEIT 1412	SOEN 2312	Web Programming	3	2	2	GEIT 1411
COMM 2311	Oral Communication	3	3	0	COMM 1312	GEIT 2291	Professional Ethics	2	2	0	
PHED 1112	Healthy Behaviors and Management	1	1	0	PHED 1111		Social Science Elective I*	3			See from the list
<b>Total Credit Hours</b>		<b>19</b>				<b>Total Credit Hours</b>		<b>17</b>			

JUNIOR YEAR											
FIRST SEMESTER						SECOND SEMESTER					
Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite	Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			Lec	Lab					Lec	Lab	
GEIT 3341	Database I	3	2	2	GEIT 1412	SOEN 3311	Requirements Engineering	3	3	0	GEIT 3351
GEIT 3331	Computer Organization	3	3	0	GEIT 1412	SOEN 4361	Operating Systems	3	3	0	GEIT 3331
SOEN 2332	Discrete Structure and Combinatorial Analysis	3	3	0	GEIT 2331	ASSE 3211	Learning Outcome Assessment II	2	2	1	ASSE 2111 & Junior Standing
GEIT 3351	Principles of Software Engineering	3	3	0	GEIT 1412	SOEN 4371	E-Commerce	3	3	0	GEIT 3341 SOEN 2312
SOEN 3351	Algorithms	3	3	0	GEIT 2421	MATH 2313	Probability and Statistics	3	3	1	MATH 1423
<b>Total Credit Hours</b>		<b>15</b>				<b>Total Credit Hours</b>		<b>14</b>			

**SUMMER OF JUNIOR YEAR**

Course Number	Course Title	Credit Hours		Pre-requisite
GEIT 4361	Internship	3	8 weeks (320 hours) full time	End of Junior Year (summer before graduation) and department approval

**SENIOR YEAR**

FIRST SEMESTER						SECOND SEMESTER					
Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite	Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			Lec	Lab					Lec	Lab	
SOEN 4311	Software Architecture and Design	3	3	0	SOEN 3311	SOEN 4313	Software Project Management	3	3	0	GEIT 3351
ASSE 4311	Learning Outcome Assessment III - SE	3	3	0	ASSE 3211 & Senior Standing		CS, CE, or IT Elective (300 or 400 Level) ***	3			See from the list
SOEN 4312	Software Testing and Quality Assurance	3	3	0	GEIT 3351		SE Elective II ****	3			See from the list
	Natural Science Elective **	4			See from the list		Social Science Elective II **	3			See from the list
	SE Elective I ****	4			See from the list						
<b>Total Credit Hours</b>		<b>17</b>				<b>Total Credit Hours</b>		<b>12</b>			

**TOTAL DEGREE CREDIT HOURS = 132**

**\* Social Science Electives: 2 Courses = 6 Credit Hours**

Course Number	Course Title	Credit Hours	Pre-Requisites
FREN 1311	Introduction to French Language	3	
FURS 1311	Introduction to Futures Skills	3	
FUTR 1311	Introduction to Futures Studies	3	
GEGR 1311	World Regional Geography	3	
HIST 1311	World Civilizations	3	
PSYC 1311	Introduction to Psychology	3	
SERV 1311	Introduction to Service Learning and Volunteering	3	
SPAN 1311	Introduction to Spanish Language	3	
SUST 1311	Introduction to Sustainability	3	
SYST 1311	Introduction to Systems Thinking	3	
BSTW 1311	Behavioral Sciences in 3D World	3	
DANT 1311	Digital Anthropology	3	
ECON 1311	Introduction to Macroeconomics	3	
ECON 1312	Introduction to Microeconomics	3	

**\*\* Natural Science Electives: 1 Course = 4 Credit Hours**

Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			LEC	LAB	
BIOL 1411	Introductory Biology	4	3	3	PRPM 0011
CHEM 1411	Introductory Chemistry	4	3	3	PRPM 0011
CHEM 1421	Chemistry for Engineers I	4	3	3	PRPM 0022
CHEM 1422	Chemistry for Engineers II	4	3	3	PRPM 0022
GEOL 1411	Introductory Geology	4	3	3	PRPM 0011

**\*\*\* CS/CE/IT Electives: 1 Course = 3 Credit Hours**

Students can take any 3XXX or 4XXX course that starts with COSC/COEN/ITAP prefix.  
**However, students are not allowed to take the same course with a different code (Equivalent courses)**

**\*\*\*\* SE Electives: 2 Courses = 7 Credit Hours**

**SE Elective: 1 Course = 3 Credit Hours**

Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			LEC	LAB	
SOEN 4321	Software Maintenance and Evolution	3	3	0	GEIT 3351 SOEN 4312
SOEN 4322	Software Security	3	3	0	GEIT 1412
SOEN 3314	Formal Methods in Software Engineering	3	3	0	GEIT 2331
SOEN 3321	Programming in UNIX Environments	3	3	0	SOEN 4361 SOEN 3351
SOEN 4316	Concurrent Programming	3	3	0	GEIT 2421 SOEN 3351
SOEN 4315	Cloud Computing	3	3	0	GEIT 1412
SOEN 3361	Computer Networks	3	3	0	MATH 2313 GEIT 2421

**SE Elective: 1 Course = 4 Credit Hours**

Course Number	Course Title	Credit Hours	Contact Hours		Pre-requisite
			LEC	LAB	
SOEN 4463	Data Mining	4	3	2	MATH 2313 GEIT 3341
SOEN 3463	Distributed System	4	3	2	GEIT 1412 SOEN 3361
SOEN 4461	Programming Languages	4	3	3	GEIT 2421