

## BACHELOR OF SCIENCE IN COMPUTER SCIENCE

### FRESHMAN YEAR

FIRST SEMESTER				SECOND SEMESTER			
Course Number	Course Title	Credit Hours	Pre-requisite	Course Number	Course Title	Credit Hours	Pre-requisite
ALIS 1211	Introduction to Islamic culture	2		ALIS 1212	The Social System in Islam	2	
COMM 1311	Written Communication	3		COMM 1312	Writing and Research	3	COMM 1311
UNIV 1211	Prof. Development and Competencies	2		UNIV 1212	Critical Thinking and Problem Solving	2	
MATH 1422	Calculus I	4	PRPM 0022	PHYS 1421	Physics for Engineers I	4	PRPM 0022
GEIT 1411	Computer Science I	4		GEIT 1412	Computer Science II	4	GEIT 1411
PHED 1111	Active Living Lifestyle	1		MATH 1423	Calculus II	4	MATH 1422
<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	Pre-requisite	Course Number	Course Title	Credit Hours	Pre-requisite
ALIS 2211	Linguistic Communication Skills	2	ALIS 1212	ALIS 2212	The Biography of Prophet Mohammad	2	
UNIV 1213	Leadership and Teamwork	2		COMM 2312	Technical and Professional Communications	3	COMM 2311
PHYS 1422	Physics for Engineers II	4	PHYS1421 MATH 1422	ASSE 2111	Learning Outcome Assessment I	1	Sophomore Level
MATH 1324	Calculus III	3	MATH 1423	GEIT 2331	Mathematical Reasoning and Algorithmic Thinking	3	GEIT 1412
GEIT 2421	Data Structures	4	GEIT 1412	COSC 2312	Web Programing	3	GEIT 1411
COMM 2311	Oral Communication	3	COMM 1312	GEIT 2291	Professional Ethics	2	
PHED 1112	Healthy Behaviors and Management	1		MATH 2313	Probability and Statistics	3	MATH1422
<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	Pre-requisite	Course Number	Course Title	Credit Hours	Pre-requisite
COSC 3332	Discrete Structures and Combinatorial Analysis	3	GEIT 2331	GEIT 3351	Principles of Software Engineering	3	GEIT 1412
GEIT 3341	Database I	3	GEIT 1412	COSC 3361	Computer Networks	3	MATH 2313 GEIT 2421
GEIT 3331	Computer Organization	3	GEIT 1412	COSC 3351	Algorithms I	3	GEIT 2421
MATH 3433	Linear Algebra and Differential Equation	4	MATH 1324	COSC 3411	Systems Programming	4	GEIT 3331
ASSE 3211	Learning Outcome Assessment II	2	ASSE 2111		Natural Science Elective**	4	
	CS Elective I***	3					
<b>Total Credit Hours</b>		<b>18</b>		<b>Total Credit Hours</b>		<b>17</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	Pre-requisite	Course Number	Course Title	Credit Hours	Pre-requisite
COSC 4361	Operating Systems	3	COSC 3411	COSC 4362	Artificial Intelligence	3	COSC 3351
COSC 4461	Programming Languages	4	COSC 3411	COSC 4363	Theory of Computation	3	COSC 3351 MATH 3433
ASSE 4311 - CS	Assessment III - CS ( <i>Capstone</i> )	3	ASSE 3211		Social Science Elective II*	3	
	CS Elective II***	3			CS Elective III***	3	
	Social Science Elective I*	3					
<b>Total Credit Hours</b>		<b>16</b>		<b>Total Credit Hours</b>		<b>12</b>	
<b>TOTAL DEGREE CREDIT HOURS =</b>							

Electives:

*Social Science Electives		**Natural Science Electives	
ECON1311	Intro. to Macroeconomics	BIOL1411	Introductory Biology
ECON1312	Intro. to Microeconomics	CHEM1411	Introductory Chemistry
GEGR1311	World Regional Geography	CHEM1421	Chemistry for Engineers I
HIST1311	World Civilizations	CHEM1422	Chemistry for Engineers II
PSYC1311	Intro. to Psychology	PHYS1411	Introductory Physics
FREN1311	Introduction to French Language		
SPAN1311	Intro. to Spanish Language		
SUST 1311	Introduction to Sustainability		

**\*\*\*CS Electives**

COSC3354	Introduction to Cryptography	GEIT2421
COSC4371	Computer Graphics	GEIT2421
ITAP3313	User Interface Development	GEIT1412, COSC2312
COSC3359	Computer Animation	GEIT2421
COSC3357	Logic and Formal Verification	GEIT2331
COSC4373	Computer Vision	GEIT2421 MATH 2313
COSC4352	Formal Methods in Software Engineering	GEIT3351
COSC4372	Distributed Systems and Algorithms	COSC3351, COSC4361

COSC4376	Bioinformatics	COSC3351
COSC4380	Quantum Information and Computation	COSC3351
COSC4393	Special Topics	OVER 90 CH
COSC4311	Parallel Computing	COSC3351
COSC4364	Compilers	COSC3351, COSC4461
ITAP4371	e-Commerce	GEIT3341, COSC2312
ITAP3371	Database II	GEIT3341