

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
Total Credit Hours		16		Total Credit Hours		19	

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 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	MATH 1422
Total Credit Hours		19		Total Credit Hours		17	

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					
Total Credit Hours		18		Total Credit Hours		17	

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 (90 hours)		Social Science Elective II*	3	
	CS Elective II***	3			CS Elective III***	3	
	Social Science Elective I*	3					
Total Credit Hours		16		Total Credit Hours		12	
TOTAL DEGREE CREDIT HOURS =							

Electives:

* **Social Science Electives:** ECON1311 Intro. to Macroeconomics, ECON1312 Intro. to Microeconomics, GEGR1311 World Regional Geography, HIST1311 World Civilization, PSYC1311 Intro. to Psychology, FREN1311 Introduction to French language, SUST 1311 Introduction to Sustainability

** **Natural Science Electives:** BIOL1411 Introductory Biology, CHEM1411 Introductory Chemistry, CHEM1421 Chemistry for Engineers I, CHEM1422 Chemistry for Engineers II

*** **CS Electives:**

Data Science: COSC4381 Introduction to Data Science, COSC4382 Machine Learning, COSC4383 Data Visualization, COSC4384 Business Intelligence and Analytics, COSC4311 Parallel Computing.

Game Development: COSC4377 Scripting and Programming for Computer Graphics, COSC3359 Computer Animation, COSC4378 3-D Computer Modeling, COSC4379 Game Architecture & Design, COSC4371 Computer Graphics.

General CS: COSC3354 Introduction to Cryptography, COSC4371 Computer Graphics, ITAP3313 User Interface Development, COSC3359 Computer Animation, COSC3357 Logic and Formal Verification, COSC4373 Computer Vision, COSC4352 Formal Methods in Software Engineering, COSC4372 Distributed Systems and Algorithms, COSC4376 Bioinformatics, COSC4380 Quantum Information and Computation, COSC4393 Special Topics, COSC4311 Parallel Computing, COSC4364 Compilers, ITAP4371 e-Commerce, ITAP3371 Database II