Computer Science 2024 Study Plan

First Year (33 credit hours)							
Term	**Course #**	**Course Title**	**CH**	**Term**	**Course #**	**Course Title**	**CH**
Fall	CMPS 151	Programming Concepts	3	**Spring**	CMPS 251	Object-Oriented Programming	4
	CHEM 101	General Chemistry I	3		PHYS 191	General Physics for Engineering I	3
	CHEM 103	Experimental General Chemistry I	1		PHYS 192	Experimental General Physics for Engineering I	1
	MATH 101	Calculus I	3		MATH 231	Linear Algebra	3
	ENGL 202	English Language I Post Foundation	3		MATH 102	Calculus II	3
	HIST 121	History of Qatar	3		ENGL 203	English Language II Post Foundation	3
Total Credit Hours in Semester			**16**	**Total Credit Hours in Semester**			**17**

Second Year (31 credit hours)							
Term	**Course #**	**Course Title**	**CH**	**Term**	**Course #**	**Course Title**	**CH**
Fall	CMPS 200	Computer Ethics	1	**Spring**	CMPS 323	Design and Analysis of Algorithms	3
	CMPS 205	Discrete Structures for Computing	3		CMPS 351	Fundamentals of Database Systems	4
	CMPS 303	Data Structures	4		CMPE 263	Computer Architecture and Organization I	3
	PHYS 193	General Physics for Engineering II	3		GENG 200	Probability and Statistics for Engineers	3
	PHYS 194	Experimental General Physics for Engineering II	1			Core Knowledge and Skills Package	3
	ARAB 100	Arabic Language I	3				
Total Credit Hours in Semester			**15**	**Total Credit Hours in Semester**			**16**

Third Year (33 credit hours)							
Term	**Course #**	**Course Title**	**CH**	**Term**	**Course #**	**Course Title**	**CH**
Fall	CMPS 310	Software Engineering	4	**Spring**	CMPS 350	Web Development Fundamentals	3
	CMPE 355	Data Communication and Computer Networks I	4		CMPS 405	Operating Systems	4
	CMPS 380	Cybersecurity Fundamentals	3		GENG 300	Numerical Methods	3
		Major Elective I	3			Major Elective II	3
		Natural Science/Mathematics package	3		DAWA 111	Islamic Culture	3
Total Credit Hours in Semester			**17**	**Total Credit Hours in Semester**			**16**

Fourth Year (23 credit hours)							
Term	**Course #**	**Course Title**	**CH**	**Term**	**Course #**	**Course Title**	**CH**
Fall	CMPS 493 OR GENG 498	Senior Project I* OR Multidisciplinary Senior Design I	3	**Spring**	CMPS 499 OR GENG 499	Senior Project II OR Multidisciplinary Senior Design II	3
		Major Elective III	3			Major Elective IV	3
	CMPS 307	Introduction to Project Management and Entrepreneurship	2		MAGT 101	Principles of Management	3
		Humanities/Fine Arts package	3			Social/Behavioral Sciences package	3
Total Credit Hours in Semester			**11**	**Total Credit Hours in Semester**			**12**

*CS students are required to enroll in the Senior Project (SP) during their final year of study. To be eligible for SP registration, a student must have successfully completed a minimum of 84 CH AND *CMPS 310 Software Engineering* AND either *CMPS 350 Web Development Fundamentals* OR *CMPS 405 Operating Systems.*

A minimum of 120 credit hours are required to complete the major in Computer Science, including:

- 33 credit hours in Core Curriculum requirements:
  - 15 credit hours from the Identity & Communication Package
  - 3 credit hours from the Core Knowledge and Skills Package
  - 3 credit hours from the Humanities /Fine Arts package
  - 3 credit hours from the Social/Behavioral Sciences package
  - 3 credit hours from the Natural Science/Mathematics package
  - 6 credit hours from the Supplemental College / Program core requirements package
- 21 credit hours of College Requirements.
- 49 credit hours in Major Requirements.
- 12 credit hours of Major Electives.
- 5 credit hours in Major Supporting Requirements.

Students must complete a minimum of 12 credit hours in major elective courses:

CMPS 312 Mobile Application Development

CMPS 356 Web Applications Design and Development

CMPS 360 Data Science Fundamentals

CMPS 373 Computer Graphics

CMPS 381 Applied Cryptography

CMPS 393 Modeling and Simulation

CMPS 399 Practical Training

CMPS 403 Artificial Intelligence

CMPS 433 Multimedia Systems

CMPS 434 Game Design and Development

CMPS 451 Database Management Systems

CMPS 453 Data Mining

CMPS 460 Machine Learning

CMPS 465 Parallel Computing

CMPS 466 Information Retrieval

CMPE 480 Computer Vision

CMPE 488 Wireless Networks and Applications

CMPS 497 Special Topics in Computing