

Alfaisal University

BS in Data Science & Engineering | Study Plan Summary | Effective: Fall 2025

4 Year Curriculum: 128 Credit Hours Total

Freshman Year - Fall Semester		
Course Code	Course-Title	CRHs
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
MAT 101	Calculus I	3
PHU 103	Physics I	3
PHU 103 L	Physics I Lab	1
ENG 101	University Writing	3
	Social Sciences Elective I	3
COE 100	Student Orientation & Academic Success	1
	Total	18

Sophomore Year - Fall Semester		
Course Code	Course-Title	CRHs
DSE 200	Introduction to Data Science	3
SE 215	Data Structures	3
SE 215 L	Data Structures Lab	1
SE 239	Network Programming	3
MAT 212	Linear Algebra	3
STA 212	Probability and Statistics	3
	Total	16

Junior Year - Fall Semester		
Course Code	Course-Title	CRHs
DSE 300	Data Preparation and Feature Design	3
SE 301	Analysis of Algorithms	3
SE 316	Application Development	3
SE 314	Operating Systems	3
AI 347	Introduction to Machine Learning	3
	Total	15

Junior Year – Summer Semester		
Course Code	Course-Title	CRHs
DSE 390	Internship	0
	Total	0

Senior Year - Fall Semester		
Course Code	Course-Title	CRHs
XX 4 __	Technical Elective I	3
XX 4 __	Technical Elective II	3
AI 480	Natural Language Processing	3
DSE 495	Capstone Project I	3
	Social Sciences Elective III	3
	Total	15

Freshman Year - Spring Semester		
Course Code	Course-Title	CRHs
SE 120	Object-Oriented Programming I	3
SE 120 L	Object-Oriented Programming I Lab	1
SE 151	Discrete Mathematics	3
MAT 112	Calculus II	3
EE 210	Digital Logic Design	3
EE 210 L	Digital Logic Design Lab	1
ENG 222	Technical Writing	3
	Total	17

Sophomore Year - Spring Semester		
Course Code	Course-Title	CRHs
SE 252	Database Management Systems	3
SE 252 L	Database Management Systems Lab	1
DSE 251	Data Visualization	3
AI 250	Introduction to Artificial Intelligence	3
CSE 250	Introduction to Cybersecurity	3
MAT 211	Calculus III	3
	Total	16

Junior Year - Spring Semester		
Course Code	Course-Title	CRHs
SE 201	Introduction to Software Engineering	3
DSE 302	Optimization for Data Science	3
DSE 322	Big Data and Data Warehousing	3
DSE 324	Social Network Analysis	3
DSE 320	Data Mining	3
	Social Sciences Elective II	3
	Total	18

Senior Year - Spring Semester		
Course Code	Course-Title	CRHs
XX 4 __	Technical Elective III	3
XX 4 __	Technical Elective IV	3
XX 4 __	Technical Elective V	3
SE 481	Ethics and Professional Development	1
DSE 496	Capstone Project II	3
	Total	13



Alfaisal University - Bachelor of Science Data Science and Engineering Program
Prerequisites Chart (Effective Fall 2025)

