Bachelor of Science in

Data Science and Artificial Intelligence

2023-2024

Major Sheet

1. General Program Presentation

Graduating with a Bachelor of Science in Data Science and Artificial Intelligence (DAI) necessitates the successful completion of a total of 120 credit hours (CH). These credit hours are distributed across different requirements, encompassing courses that are essential as well as those that can be chosen as elective courses. The table below shows how 120 credit hours are distributed across requirements:

Table 1: DAI credit hours distribution.

Requirements	Credit hours (CH)
General Education Requirements	36
College Requirements	40
Program Requirements	44 (Including 6 CH electives)
Total Credit Hours	120

2. General Education (36 Credits)

Students here are required to complete 36 credit hours distributed over five sections as follows:

2.1. Communication (9 Credits)

Table 2.1: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENL101	English for Academic Studies	3	3	IEP099 or Equivalent	DPS095*
ENL102	English Composition	3	3	ENL101 DPS095	
ENL201	Writing and Research	3	3	ENL102	

*Preparatory Program; Digital and Professional Skills (DPS095).

2.2. Innovation and Creativity (6 Credits)

Table 2.2.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN150	Professionalism and Ethics	3	3		

Table 2.2.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN131	Creativity and Problem Solving	3	3		
BUS101	Entrepreneurship Essentials	3	3		
ENI110	Intro. to Innovation and Creativity	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
ENI140	Design Thinking	3	3		
ENI150	Innovation in Business Models	3	3		
ENI160	Innovation and Globalization	3	3		

2.3. Global Citizen (6 Credits)

Table 2.3.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
INF120	Computers and Information Systems	3	3	DPS095	

Table 2.3.2: Elective courses, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
GEN201	Globalization and Sustainability	3	3		
GEN202	Global Citizenship in the Digital Age	3	3		
BUS201	Global Economics and Trade	3	3		

2.4. Art and Humanities (9 Credits)

Table 2.4.1: Compulsory course.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST101	Islamic Culture and Values	3	3		

Table 2.4.2: Elective courses, group I, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
HST102	Kuwait History	3	3		
ARB101	Arabic Communication Skills	3	3		
ART101	Art Appreciation	3	3		
ART102	Intro. to Media and Communication	3	3		

Table 2.4.3: Elective courses, group II, students should select one course from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHL101	Introduction to Philosophy	3	3		
LAW101	Law and Society	3	3		
PSY101	Introduction to Psychology	3	3		
SOC101	Introduction to Sociology	3	3		

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
BUS300	Career Planning	3	3		

2.5. Math and Science (6 Credits)

Table 2.5: Compulsory courses.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
MAT101	Calculus I	3	3	IMP099* or Equivalent	
PHY101	Physics I	3	3		MAT101

*Preparatory Program; Precalculus (IMP099).

3. College Requirements (40 Credits)

Table 3.1: Compulsory courses for Math and Science (17 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
PHY105	Physics Lab I	1	3		PHY101
MAT102	Calculus II	3	3	MAT101	
MAT120	Discrete Mathematics	3	3	IMP099 or Equivalent	
BIO101 or CHM101	Biology I or Chemistry I	3	3	IMP099 or Equivalent	
BIO105 or CHM105	Biology I Lab or Chemistry I Lab	1	3		BIO101 or CHM101
MAT202	Linear Algebra	3	3	MAT101	
ENG304	Engineering Probability & Statistics	3	3	MAT102	

Table 3.2: Compulsory courses for Computing (23 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS120	Computational Thinking & Programming	3	3	MAT120	
CCS121	Computational Thinking & Programming Lab	1	3		CCS120
CCS220	Object-Oriented Design & Programming	3	3	CCS120	
CCS221	Object-Oriented Design & Programming Lab	1	3		CCS220
CCS230	Fundamentals of Database Systems	3	3	CCS220 MAT120	

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
CCS231	Fundamentals of Database Systems Lab	1	3		CCS230
CCS270	Data Structures and Algorithms	3	3	CCS220	
CCS271	Data Structures and Algorithms Lab	1	3		CCS270
CCS342	IT Infrastructure	3	3	INF120	
CCS330	Web Engineering	3	3	CCS230	
CCS331	Web Engineering Lab	1	3		CCS330

4. Program Requirements (44 Credits)

Table 4.1: Compulsory courses (38 Credits).

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
DAI230	Mathematics for Data Science & AI	3	3	MAT120	
DAI250	Fundamentals of Data Science & AI	3	3	DAI230	
DAI251	Fundamentals of Data Science & AI Lab	1	3		DAI250
DAI310	Machine Learning	3	3	DAI250	
DAI311	Machine Learning Lab	1	3		DAI310
DAI330	Data Warehousing and Data Mining	3	3	CCS230	
DAI331	Data Warehousing and Data Mining Lab	1	3		DAI330
DAI351	Advanced Machine Learning	3	3	DAI310	
DAI352	Advanced Machine Learning Lab	1	3		DAI351
DAI374	Data Ethics, Governance, and Laws	3	3	DAI351	
DAI421	Data Analytics and Visualization	3	3	DAI250	
DAI430	Big Data Systems	3	3	DAI330	
DAI431	Big Data Systems Lab	1	3		DAI430
DAI440	Distributed Computing	3	3	CCS342	
DAI490	Capstone Design 1	3	3	Pass 96 CH	
DAI491	Capstone Design 2	3	3	DAI490	

Table 4.2: Elective courses, students should select two courses (6 Credits) from the following list.

Course Code	Course Title	Credit hours	Contact hours	Pre-requisite	Co-requisite
DAI480	Internship	3	3	Program Approval	
DAI432	Security Aspects of Data Science & AI	3	3	DAI330 DAI351	
DAI462	Computer Vision and Pattern Recognition	3	3	DAI351	
DAI463	Natural Language Processing	3	3	DAI351	
DAI475	Business Intelligence and Decision Support Systems	3	3	DAI351	
DAI476	Data Analytics for Risk Management & Strategic Planning	3	3	DAI330	
DAI495	Special topics in Data Science	3	3	Program Approval	
DAI496	Special topics in Artificial Intelligence	3	3	Program Approval	

- **Students may take up to 3 credits of program electives from another college at the 300 level or above to replace one of their program electives, provided they obtain the approval of both the program and the college.**