



جامعة عجمان  
AJMAN UNIVERSITY

**College of Engineering and Information Technology**

**Department of Information Technology**

**Data Analytics Program**

## Program Structure

The Bachelor of Science degree in Data Analytics requires the completion of 123 credit hours distributed according to the following plan:

Type of Courses	Credit hours
1. General Education Requirements	
(a) University Compulsory Courses	18
(b) University Elective Courses	12
2. Data Analytics Program Courses	
(a) Mathematics and Statistics Courses	15
(b) Program Core Courses	66
(c) Program Elective Courses	9
(d) Internship	3
Total Credit Hours	123

## Program Courses

### 1. University General Education Courses

#### (a) University Compulsory Courses (18 Cr.Hrs.)

Course No.	Course Title	Th.	Lab.	Tut.	Cr. Hrs.	Prerequisite
ARB113 Or ARB116	Arabic Written Expression Or Arabic as a Foreign Language (Non-Arab)	3	0	0	3	-
ENG 114	Advanced English Writing	3	0	0	3	-
INN311	Innovation & Entrepreneurship	3	0	0	3	-
ISL114 or ISL112	Islamic Culture or Islamic Culture in English (Non-Arab)	3	0	0	3	-
EMS 112	Emiratis Studies	3	0	0	3	-
STA 114	General Statistics	2	2	0	3	-

#### (b) University Elective Courses (12 Cr.Hrs.)

Course Code	Course Title	Th.	Lab.	Tut.	Cr. Hrs.	Prerequisite
<b>1. Humanities / Arts (3 Credit Hours)</b>						
ART 111	Introduction to Arts	3	0	0	3	-
ART 112	Introduction to Aesthetics	3	0	0	3	-
ART 113	Introduction to performing Arts	3	0	0	3	-
FRE 212	Francophone world: Language and Culture	3	0	0	3	-

ISH 211	Islamic Civilization	3	0	0	3	-
LAW 262	Human Rights	3	0	0	3	-
WLT 111	World Literature	3	0	0	3	-
<b>2. Natural Sciences (3 Credit Hours)</b>						
AST211	Astronomy	3	0	0	3	
BIO111	General Biology	3	0	0	3	
CHM111	General Chemistry	3	0	0	3	
PHY111	General Physics	3	0	0	3	
<b>3. Social or Behavioral Sciences (6 Credit Hours)</b>						
THI211	Critical Thinking	3	0	0	3	-
PSY111	General Psychology	3	0	0	3	-
INF112	Media Culture	3	0	0	3	-
SSW111	Social Responsibility	3	0	0	3	-
LAW112	Work Ethics	3	0	0	3	-
LED111	Leadership and Team Building	3	0	0	3	-

## 2. Data Analytics Program Compulsory Courses

### (a) Mathematics and Statistics Courses (15 Cr. Hrs.)

Course No.	Course Title	Th.	Lab.	Tut.	Cr. Hrs.	Prerequisite
DAT201	Linear Algebra	3	0	2	3	INT101
DAT203	Probability Theory and its Applications	3	0	0	3	STA112
DAT305	Statistical Modelling	3	0	2	3	DAT203
INT101	Calculus for Information Technology	3	0	2	3	-
INT202	Discrete Mathematics	3	0	2	3	INT101

### (b) Program Core Courses & Internship (69 Cr. Hrs.)

Course No.	Course Title	Th.	Lab.	Tut.	Cr. Hrs.	Prerequisite
DAT100	Introduction to Data Analytics	2	2	0	3	-
DAT204	Data Engineering	2	2	0	3	DAT100
DAT205	Programming for Data Analytics I	2	2	0	3	INT201
DAT206	Data Visualization	2	2	0	3	DAT204
DAT302	Programming for Data Analytics II	2	2	0	3	DAT205
DAT304	Data Analytics Ethics	3	0	0	3	DAT206
DAT401	Data Mining	2	2	0	3	DAT302

DAT402	Text and Web Mining	2	2	0	3	DAT401
DAT403	Data Analytics Capstone Project	1	4	0	3	DAT401
DAT404	Business and Social Analytics	2	2	0	3	INS402
DAT405	Machine Learning	2	2	0	3	DAT401
DAT407	Data Analytics Internship	16 weeks-Sector normal hours min 30 per week			3	90 Cr. Hrs.
INS402	Business Intelligence and Data Warehousing	2	2	0	3	INT302
INT100	Introductory Programming	2	2	2	3	-
INT201	Object Oriented Programming	2	2	2	3	INT100
INT205	Fundamentals of Data Communications and Networking	2	2	0	3	INT201
INT209	Data Structures	3	0	2	3	INT201, INT202
INT301	Operating Systems	2	2	0	3	INT201
INT302	Database Management Systems	2	2	0	3	INT201
INT303	Fundamentals of Information Security	3	0	0	3	INT205
INT305	Fundamentals of Software Engineering	3	0	0	3	INT201
DAT323	Big Data Technologies	2	2	0	3	INT302
INT430	Artificial Intelligence	2	2	0	3	INT302

**(c) Program Elective Courses (9 Credit Hours)**

Course No.	Course Title	Th.	Lab.	Tut.	Cr. Hrs.	Prerequisite
DAT410	Selected Topics in Data Analytics	3	0	0	3	DAT302
DAT411	Advanced Data Analytics	2	2	0	3	DAT303
INT206	Fundamentals of Web Systems	2	2	0	3	INT201
DAT406	Optimization Models and Algorithms	3	0	0	3	DAT305
INT307	Information Technology Project Management	3	0	0	3	INT305
INT309	Cloud Computing	2	2	0	3	INT301
INT321	Database Administration	2	2	0	3	INT302
INT422	Information Architecture	2	2	0	3	INT302