

UNIVERSITY OF AGRICULTURE, FAISALABAD

Department of Mathematics and Statistics

Scheme of Studies for BS Data Analytics 2024

HEC COURSE CATEGORY	UAF SELECTION FOR BS DATA ANALYTICS		
	Course Code	Course Title	Credits
GENERAL- I	FA-310	INTRODUCCTION TO ARTS AND HUMANITIES	2(2-0)
GENERAL- II	SSH-303	IDEOLOGY AND CONSTITUTION OF PAKISTAN	2(2-0)
GENERAL- III	CS-305	APPLICATIONS OF INFORMATION AND COMMUNICATION TECHNOLOGIES	3(2-1)
GENERAL- IV	MATH-408	QUANTITATIVE REASONING-I	3(3-0)
GENERAL- V	ENG-313	FUNCTIONAL ENGLISH	3(3-0)
GENERAL- VI	IS-401/SSH-306	ISLAMIC STUDIES/ ETHICS	2(2-0)
GENERAL- VII	STAT-408	QUANTITATIVE REASONING-I I	3(3-0)
GENERAL- VIII	ENG-314	EXPOSITORY WRITING	3(3-0)
GENERAL- IX	EDU-306	CIVICS AND COMMUNITY ENGAGEMENT	2(2-0)
GENERAL- X	PY-307	FUNDAMETALS OF NATURAL SCIENCES	3(2-1)
GENERAL- XI	BMS-402	ENTREPRENEURSHIP	2(2-0)
GENERAL- XII	SOC-311	INTRODUCTION TO SOCIOLOGY	2(2-0)
NON-CREDIT COURSE	IS-402/SSH-403	ترجمة القرآن/INTERFAITH HARMONY	No-Credit
NON-CREDIT COURSE	IS-403/SSH-404	روحانیت/ MORAL PHILOSOPHY	No-Credit
		Total Credit Hours	30
ALLIED-I	MATH-303	CALCULUS-I	4(4-0)
ALLIED-II	MATH-404	LINEAR ALGEBRA	3(3-0)
ALLIED-III	MATH-305	CALCULUS-II	3(3-0)
ALLIED-IV	MATH-503	ORDINARY DIFFERENTIAL EQUATIONS	3(3-0)
ALLIED-V	MATH-601	NUMERICAL ANALYSIS	3(3-0)
ALLIED-VI	MATH-405	DISCRETE MATHEMATICS	3(3-0)
ALLIED-VII	MATH-513	OPERATIONS RESEARCH	3(3-0)
ALLIED-VIII	MATH-514	MATRICES FOR STATISTICS	3(3-0)
		Total Credit Hours	25
MAJOR-I	DA-301	INTRODUCTION TO DATA ANALYTICS	3(2-1)
MAJOR-II	DA-302	INTRODUCTION TO PROBABILITY THEORY	4(4-0)
MAJOR-III	DA-503/ CS-308	PROGRAMMING FUNDAMENTIALS	3(2-1)
MAJOR-IV	DA-401	STATISTICAL INFERENCE	4(4-0)
MAJOR-V	DA-403	TIME SERIES METHODS	3(2-1)
MAJOR-VI	DA-404	DATA ANALYSIS AND CLASSIFICATION METHODS	4(3-1)
MAJOR-VII	DA-406	PROGRAMMING WITH R	3(1-2)

MAJOR-VIII	DA-501	DATA ANALYSIS AND VIUALIZATION	3(2-1)
MAJOR-IX	DA-505	SAMPLING THEORY FOR DATA ANALYTICS	3(3-0)
MAJOR-X	DA-507	DESIGN OF EXPERIMENTS FOR DATA ANALYTICS	3(3-0)
MAJOR-XI	DA-601	BUSINESS DATA ANALYTICS	3(2-1)
MAJOR-XII	DA-602	PROBLISTIC MODELING	3(3-0)
MAJOR-XIII	DA-603	DATA ANALYTICS USING ARTIFICIAL INTELLIGENCE	3(2-1)
MAJOR-XIV	DA-604	DATA MINING TECHNIQUES	3(2-1)
MAJOR-XV	DA-605	HUMMAN ANALYTICS	3(2-1)
MAJOR-XVI	DA-606	HEALTH ANALYTICS	3(2-1)
MAJOR-XVII	DA-608	ECONOMETRIC TECHNIQUES FOR DATA ANALYTICS	3(3-0)
MAJOR-XX	DA-609	DATA ANALYTICS AND MACHINE LEARNING ALGORITHMS	3(2-1)
MAJOR-XXI	DA-610	BAYESIAN STATISTICS FOR DATA ANALYTICS	3(3-0)
MAJOR-XXIII	DA-611/ CS-412	VISUAL PROGRAMMING	3(2-1)
MAJOR-XXIV	DA-612	MULTIVARIATE TECHNIQUES FOR DATA ANALYTICS	3(3-0)
MAJOR-XXV	DA-620	SEMINAR	1(1-0)
		Total Credit Hours	67
INTERNSHIP	DA-621	TECHNICAL REPORT/INTERNSHIP	3(0-3)
CAPSTONE PROJECT	DA-622	CAPSTONE PROJECT	6(0-6)
Grand Total			130

Scheme of BS (Data Analytics) Effect from Winter 2025-2026

FIRST SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-301	INTRODUCTION TO DATA ANALYTICS	3(2-1)
MATH-303	CALCULUS-I	4(4-0)
MATH-404	LINEAR ALGEBRA	3(3-0)
ENG-313	FUNCTIONAL ENGLISH	3(3-0)
IS-401/SSH-306	ISLAMIC STUDIES/ETHICS	2(2-0)
SOC-311	INTRODUCTION TO SOCIOLOGY	2(2-0)
EDU-306	CIVICS AND COMMUNITY ENGAGEMENT	2(2-0)
	TOTAL CREDIT HOURS	19

SECOND SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-302	INTRODUCTION TO PROBABILITY THEORY	4(4-0)
MATH-305	CALCULUS-II	3(3-0)
MATH-503	ORDINARY DIFFERENTIAL EQUATIONS	3(3-0)
ENG-314	EXPOSITORY WRITING	3(3-0)
CS-305	APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES	3(2-1)
SSH-303	IDEOLOGY AND CONSTITUTION OF PAKISTAN	2(2-0)
FA-310	INTRODUCCTION TO ARTS AND HUMANITIES	2(2-0)
	TOTAL CREDIT HOURS	20

THIRD SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-401	STATISTICAL INFERENCE	4(4-0)
DA-403	TIME SERIES METHODS	3(2-1)
PY-307	FUNDAMENTAL OF NATURAL SCIENCES	3(2-1)
MATH-601	NUMERICAL ANALYSIS	3(3-0)
MATH-408	QUANTITATIVE REASONING-I	3(3-0)
BMS-402	ENTREPRENEURSHIP	2(2-0)
IS-403/SSH-404	روحانیت/ MORAL PHILOSOPHY	No-Credit
	TOTAL CREDIT HOURS	18

FOURTH SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-404	DATA ANALYSIS AND CLASSIFICATION METHODS	4(3-1)
DA-406	PROGRAMMING WITH R	3(1-2)
MATH-405	DISCRETE MATHEMATICS	3(3-0)
MATH-513	OPERATIONS RESEARCH	3(3-0)
STAT-408	QUANTITATIVE REASONING-II	3(3-0)
IS-402/SSH-403	ترجمة القرآن/INTERFAITH HARMONY	No-Credit
	TOTAL CREDIT HOURS	16

FIFTH SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-501	DATA ANALYSIS AND VISUALIZATION	3(2-1)
DA-503/CS-308	PROGRAMMING FUNDAMENTIALS	3(2-1)
DA-505	SAMPLING THEORY FOR DATA ANALYTICS	3(3-0)
DA-507	DESIGN OF EXPERIMENTS FOR DATA ANALYTICS	3(3-0)
MATH-514	MATRICES FOR STATISTICS	3(3-0)
	TOTAL CREDIT HOURS	15

SIXTH SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-602	PROBLISTICS MODELLING	3(3-0)
DA-604	DATA MINING TECHNIQUES	3(2-1)
DA-606	HEALTH ANALYTICS	3(2-1)
DA-608	ECONOMETRICS TECHNIQUES FOR DATA ANALYTICS	3(3-0)
DA-610	BAYESIAN STATISTICS FOR DATA ANALYTICS	3(3-0)
DA-612	MULTIVARIATE TECHNIQUES FOR DATA ANALYTICS	3(3-0)
	TOTAL CREDIT HOURS	18

SEVENTH SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-601	BUSSINESS DATA ANALYTICS	3(2-1)
DA-603	DATA ANALYTICS USING ARTIFICIAL INTELLIGENCE	3(2-1)
DA-605	HUMMAN ANALYTICS	3(2-1)
DA-609	DATA ANALYTICS AND MACHINE LEARNING ALGORITHMS	3(2-1)
DA-611/CS-412	VISUAL PROGRAMMING	3(2-1)
	TOTAL CREDIT HOURS	15

EIGHTH SEMESTER

COURSE CODE	COURSE TITLE	CREDIT HOURS
DA-620	SEMINAR	1(1-0)
DA-621	TECHNICAL REPORT/ INTERNSHIP	2(0-2)
DA-622	CAPSTONE PROJECT	6(0-6)
	TOTAL CREDIT HOURS	09

Total Credit Hours for BS Data Analytics (4-Years):

Sem. I	Sem. II	Sem. III	Sem. IV	Sem. V	Sem. VI	Sem. VII	Sem. VIII	Total
19	20	18	16	15	18	15	9	130