



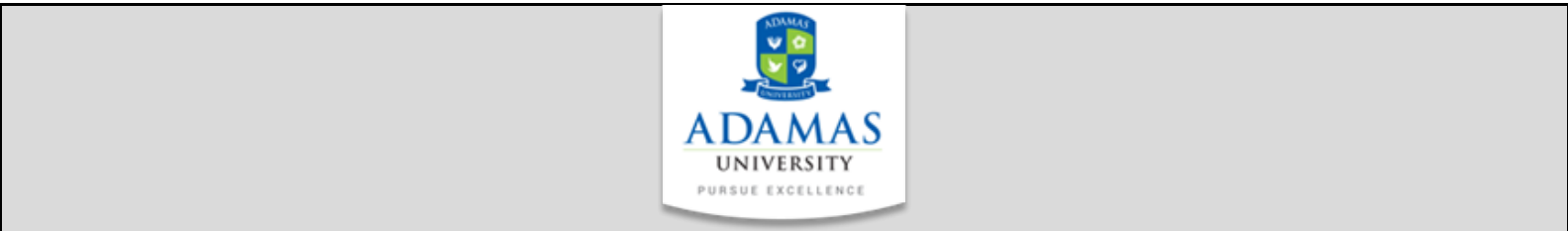
ADAMAS UNIVERSITY
SCHOOL OF BASIC AND APPLIED SCIENCES
DEPARTMENT OF MATHEMATICAL SCIENCES

Programme Name: M.Sc. (Applied Statistics and Data Science)

Programme Code: MTH4203

**Programme Structure for 2-year Postgraduate Programme
with EXIT Option**

Effective From Academic Year: 2026-27



SCHOOL OF BASIC AND APPLIED SCIENCES

1st Year of PG Curricular Structure for 2-year PG Programmes (3+2)

M.Sc. (Applied Statistics and Data Science)

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
1	CC	MTH421	Multivariate Calculus and Applications	3	1	0	4	
2	CC	MTH409	Optimization Techniques	3	0	2	4	
3	CC	SDS421	Advanced Regression Techniques	3	1	0	4	
4	DSE	CSE481	Discipline Specific Elective courses:	3	0	2	4	
		SDS404	Data Structures and Algorithm Design/	3	0	2	4	
		SDS452	Design of Experiments/	3	0	2	4	
			Data Analytics for Finance					
			SAWYAM MOOC courses approved by the department: (Any courses aligning with the themes of specified DSE courses, subject to availability in the portal within the stipulated time frame)					
5	RM	MTH450	Research Methodology	4	0	0	4	
6	SEC	SDS423	Python Programming	0	0	4	2	
7			Career Development Course I (Soft Skill / Soft Skill and Aptitude Course)	1	0	0	1	
8	AEC		Foreign Language (Select One from a basket)	2	0	0	2	
			SEMESTER CREDIT					25

SEMESTER II									
SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS	
				L	T	P	C		
9	CC	SDS501	Time Series Analysis	3	0	2	4		
10	CC	SDS502	Machine Learning and Applications	3	0	2	4		
11	CC	SDS503	Applied Multivariate Analysis	3	1	0	4		
12	DSE	SDS504	Discipline Specific Elective courses:	3	0	2	4		
		MTH501	Advanced Sampling Theory/	3	0	2	4		
		SDS505	Matrix computation /	3	0	2	4		
			Data Engineering						
			SAWYAM MOOC courses (Any courses aligning with the themes of specified DSE courses, subject to availability in the portal within the stipulated time frame)						
13	MDE		To be chosen from pool of discipline specific elective courses/ elective courses of other disciplines						
			SAWYAM MOOC courses (Any courses aligning with the themes of specified MDE courses, subject to availability in the portal within the stipulated time frame)				4		
14	SEC	CSE482	Database Management System with SQL	0	0	4	2		
15	SEC		Career Development Course II (Soft Skill / Soft Skill and Aptitude Course)	1	0	0	1		
16	AEC		Foreign Language (Select One from a basket)	2	0	0	2		
			SEMESTER CREDIT					25	
			TOTAL CREDIT					50	
Exit option with Post-Graduate Diploma after the first year or two semesters with the completion of courses equivalent to 50 credits.									

**2nd Year of PG Curricular Structure for 2-year PG Programmes/
One-year PG Programme after completion of Four-Year UG Programme (4+1)**

PG Curricular Structure with Coursework

SEMESTER III

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
1	CC	SDS506	Deep Learning and its Applications	3	0	2	4	
2	CC	SDS507	Survival analysis	3	1	0	4	
3	CC	SDS508	Mathematical Modelling	3	1	0	4	
4	DSE		Optional I				4	
5	MDE		To be chosen from pool of elective courses of other disciplines				4	
6	RP/ INT/ OJT	SDS553/ SDS551/ SDS552	Research Project/ Internship/ On Job Training				2	
7	SEC		Career Development Course III (Soft Skill / Soft Skill and Aptitude Course)	1	0	0	1	
			SEMESTER CREDIT					23

SEMESTER IV

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
8	CC	CSE584	Artificial Intelligence and Applications	3	0	2	4	
9	DSE		Optional II				4	
10	MDE		To be chosen from pool of elective courses of other disciplines				4	
11	ED	SDS557	Entrepreneurship Course				2	
12	Project	SDS554	Academic Project				8	
			SEMESTER CREDIT					22
			TOTAL CREDIT					45

**2nd Year of PG Curricular Structure for 2-year PG Programmes/
One-year PG Programme after completion of Four-Year UG Programme (4+1)**

PG Curricular Structure with Coursework and Research

SEMESTER III

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
1	CC	SDS506	Deep Learning and its Applications	3	0	2	4	
2	CC	SDS507	Survival analysis	3	1	0	4	
3	DSE		Mathematical Modelling/Optional I				4	
4	CC	SDS518	Tools and Techniques for Research Writing	1	0	2	2	
5	RP/ INT/ OJT	SDS553/ SDS551/ SDS552	Research Project/ Internship/ On Job Training				2	
6	SEC		Career Development Course III (Soft Skill / Soft Skill and Aptitude Course)	1	0	0	1	
7	Research	SDS555	Dissertation Part I				6	
			SEMESTER CREDIT				23	

SEMESTER IV

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
7	CC	CSE584	Artificial Intelligence and Applications	3	0	2	4	
8	DSE		Optional II				4	
10	ENT	SDS557	Entrepreneurship Course				2	
11	Project	SDS556	Dissertation Part II				12	
			SEMESTER CREDIT				22	
			TOTAL CREDIT				45	

**2nd Year of PG Curricular Structure for 2-year PG Programmes/
One-year PG Programme after completion of Four-Year UG Programme (4+1)**

PG Curricular Structure with only Research

SEMESTER III

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
1	CC		Course related to the area identified for research				4	
2	DSE		Course related or allied to the area identified for research				4	
3	CC	SDS518	Tools and Techniques for Research Writing				2	
4	SEC		Career Development Course III (Soft Skill / Soft Skill and Aptitude Course)	1	0	0	1	
5	Research	SDS558	Dissertation Part I				12	
			SEMESTER CREDIT				23	

SEMESTER IV

SL. No.	TYPE OF COURSE	COURSE CODE	TITLE OF THE COURSE	CONTACT HOURS PER WEEK				REMARKS
				L	T	P	C	
5	SEC	SDS509	Advanced data Analysis with Power BI	0	0	4	2	
6	Research	SDS559	Dissertation Part II				20	
			SEMESTER CREDIT				22	
			TOTAL CREDIT				45	

OPTIONAL PAPERS:

Students with “Only Coursework” or “Coursework and Research” are required to study **TWO** Optional Papers either from **Group A** or **Group B** during semesters III and IV. The list of the electives is given below:

List of Optional Papers				CONTACT HOURS PER WEEK			
Options		Paper Name	Paper Code	L	T	P	C
Optional I	Group A	Stochastic Process	SDS510	3	1	0	4
		Statistical Quality Control	SDS511	3	0	2	4
		Statistical Genetics	SDS512	3	1	0	4
	Group B	Cryptography and Network Security	MTH502	3	1	0	4
		Cloud Computing	CSE581	3	0	2	4
		Natural Language Processing	SDS513	3	0	2	4
Optional II	Group A	Reliability Theory	SDS514	3	0	2	4
		Clinical Trials and Biostatistics	SDS515	3	0	2	4
		Demography	SDS516	3	0	2	4
	Group B	Big Data Analytics	CSE582	3	0	2	4
		Cyber Security for Data Science	CSE583	3	1	0	4
		Image Processing and Computer Vision	SDS517	3	0	2	4

Note: Offering of optional papers may vary from year to year as per choice of Students or availability of resource person.

COURSE RELATED TO THE AREA IDENTIFIED FOR RESEARCH:

PG students who are eligible and interested in completing the final year of their PG program through only Research, they are required to study one Core Course (CC) from the following list, as suggested by their supervisor, based on the identified area of research.

List of Core Courses (CC) for Semester III:

Paper Name	Paper Code	L	T	P	C
Deep Learning and Applications	SDS506	3	0	2	4
Mathematical Modelling	SDS508	3	1	0	4
Survival Analysis	SDS507	3	1	0	4

Note: The offering of CC papers may vary from year to year depending on student preferences and the availability of resource persons/supervisors.

DSE:

PG students who are eligible and interested in completing the final year of their program through research are required to take one DSE course in semester III from the following list. The course should be related or allied to the area identified for research, as suggested by their supervisor.

List of DSE papers for Semester III	Paper Code	CONTACT HOURS PER WEEK			
		L	T	P	C
Stochastic Process	SDS510	3	1	0	4
Statistical Quality Control	SDS511	3	0	2	4
Statistical Genetics	SDS512	3	0	2	4
Cryptography and Network Security	MTH502	3	1	0	4
Cloud Computing	CSE581	3	0	2	4
Natural Language Processing	SDS513	3	0	2	4
Image Processing and Computer Vision	SDS517	3	0	2	4

Note: Offering of DSE papers may vary from year to year as per choice of students or availability of resource person.

List of Career Development Courses:

Course Code	Title	L	T	P	C
CLL406	Advanced Soft Skills and Aptitude I	1	0	0	1
CLL407	Advanced Soft Skills and Aptitude II	1	0	0	1
CLL503	Advanced Soft Skills and Aptitude III	1	0	0	1

List of Foreign Language Courses:

Semester	Course Code	Title	L	T	P	C
I	AEC408	French I	2	0	0	2
	AEC409	German I	2	0	0	2
	AEC410	Spanish I	2	0	0	2
II	AEC503	French II	2	0	0	2
	AEC504	German II	2	0	0	2
	AEC505	Spanish II	2	0	0	2