Program Specification
— (Bachelor)

Program:	**B. Sc. Applied Statistics and Data Management**
Program Code (as per Saudi university ranking):	ASDM (Code Number: 054201)
Qualification Level:	**Graduate**
Department:	**Mathematics**
College:	**College of Sciences Al-zulfi**
Institution:	**Majmaah University**
Program Specification:	New ☐ updated* ☒
Last Review Date:	26/9/2023

*Attach the previous version of the Program Specification.

Table of Contents

A. Program Identification and General Information

1. Program's Main Location :

Al-zulfi

2. Branches Offering the Program (if any):

None

3. Partnerships with other parties (if any) and the nature of each:

Department of Computer Science and Information

4. Professions/jobs for which students are qualified

Lecturer/ Teacher / Instructor / Statistician / Data analyst / Banker / Accountant

5. Relevant occupational/ Professional sectors:

1- Work in the public and private education sectors.
2- Work in the public and private health sectors.
3- Work as a lecturer in the department or in one of the departments of mathematics in the Kingdom's universities.
4- Working in research centers.
5- Work in the military sector.
6- Work in information technology as data analysts and contributors in the preparation of strategic plans.

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. **Statistics and Data Science**	140	**Teacher / Instructor / Statistician / Data analyst / Banker / Accountant**
2.		

| **3.** | | |
| … | | |

7. Exit Points/Awarded Degree (if any):

exit points/awarded degree	Credit hours
1. **First semester Training certificate (in English Language)**	**15**
2. **Associate Diploma in Statistics**	39+**0Hrs** training field+ at least two professional certificates to be chosen from the list below.
3. **Intermediate Diploma in Applied Statistics and data sciences**	72+**0Hrs** training field+ at least two professional certificates to be chosen from the list below.

8. Total credit hours: (140)

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

To prepare national qualified graduates in statistics and data science and their applications with high skills that can compete in labor market and give contributions in community service and sustainable development.

2. Program Goals:

The study of how statistical data management techniques are applied to actual world issues is known as Applied Statistics and Data Management (AS&DM). AS&DM are experts in a number of disciplines, including the social sciences, business, and medical. They use their knowledge to experiment design, data analysis, and the creation of statistical structural models.

Goals for Graduate Program
Following this program, our graduates will be able to accomplish the following goals:
- Our graduates will be able to describe their work effectively, communicate the basic principle of statistics, and pinpoint potential areas for further data analysis.
- Our graduates are familiar with the fundamentals of data management, statistical techniques, data presentation and visualization, and study documentation, including information on human development.
- Our graduates are employed in a variety of statistically intensive areas for organizations in the banking, public policy, insurance companies, healthcare, as well as the public and private sectors.
- Our graduates are acquiring a practices need to be utilized for interacting with various data types across a variety of programming languages for data analysis.

Goals for University Services
- To strives to create a sense of unity among all students, faculty, and staff.
- To treating other departmental employees with respect and dignity, we promote an inclusive environment.
- To develop awareness and better understanding of the communities through short certificate courses, Seminars, conference and outcome base workshops

Goals for Community Services
.
- To contribute their energy and skills to the community and country.
- To encourage variety in our program and foster a sense of belonging by cooperating thoughtfully to achieve our mutual goals of education, community engagement, and scientific advancement.

3. Program Learning Outcomes*

Knowledge and Understanding

K1	Reproduce fundamentals and concepts of Statistics and Data science.
K2	Use computer statistical software in solving real life Problems.
K3	The ability to describe and evaluate the principles, concepts and techniques associated with Statistics and Data science.
K4	Effectively use the terms, hypothesis, theories and practices associated with statistics and data science.
K...	

Skills

S1	Demonstrate proficiency with statistical analysis of data
S2	Demonstrate the work independently and within a team.
S3	Illustrate and bear responsibility for different situations.
S4	Analyze and realize the codes of ethics and their importance.
S...	

Values, Autonomy, and Responsibility

V1	Show the ability for decision making.
V2	Categorize work in a group, communicating effectively
V3	Critically interpret numerical and graphical data.
V4	Investigate, retrieve, reflect, and assess and use data/information effectively in several branches of science.
V...	

* Add a table for each track or exit Point (if any)

3.1   Associate Diploma in Statistics Learning Outcomes*

Knowledge and Understanding

K1	Reproduce fundamentals and concepts of Statistics and Data science.
K2	Use computer statistical software in solving real life Problems.
K3	The ability to describe and evaluate the principles, concepts and techniques associated with Statistics and Data science.
K4	Effectively use the terms, hypothesis, theories and practices associated with statistics and data science.

Skills

S1	Demonstrate proficiency with statistical analysis of data
S2	Demonstrate the work independently and within a team.
S4	Analyze and realize the codes of ethics and their importance.

Values, Autonomy, and Responsibility

V2	Categorize work in a group, communicating effectively

V3	Critically interpret numerical and graphical data.

3.2 Associate Diploma in Statistics Learning Outcomes*

Knowledge and Understanding

K1	Reproduce fundamentals and concepts of Statistics and Data science.
K2	Use computer statistical software in solving real life Problems.
K3	The ability to describe and evaluate the principles, concepts and techniques associated with Statistics and Data science.
K4	Effectively use the terms, hypothesis, theories and practices associated with statistics and data science.

Skills

S1	Demonstrate proficiency with statistical analysis of data
S2	Demonstrate the work independently and within a team.
S3	Illustrate and bear responsibility for different situations.
S4	Analyze and realize the codes of ethics and their importance.

Values, Autonomy, and Responsibility

V2	Categorize work in a group, communicating effectively
V3	Critically interpret numerical and graphical data.

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	2	4	2.85%
	Elective	4	8	5.7%
College Requirements	Required	0	0	0%
	Elective	0	0	0%
Program Requirements	Required	38	113	80. 7%
	Elective	4	8	5.7%
Capstone Course/Project		2	4	2.85%
Field Training/ Internship		1	3	2.2%
Residency year				
Others				
Total		51	140	100%

* Add a separated table for each track (if any).

2. Program Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	ENGD 111	English Reading skills	Required		3	Program
	ENGD 112	English Writing skills	Required		3	Program
	ENGD 113	English Grammar	Required		3	Program
	ENGD 114	English Vocabulary Building	Required		3	Program
	ENGD 115	English Listening and speaking skills	Required		3	Program
	MTHS 121	Differential Calculus	Required		3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 2	MTHS 122	Discrete Mathematics	Required		3	Program
	STS 121	Introduction of Statistics	Required		3	Program
	DSC 121	Introduction to data science	Required		3	Program
	MTHS 131	Integral Calculus	Required	Differential Calculus MTHS 121	3	Program
	-----	University required	Required		2	University
	MTHS 212	Mathematical Programming 1	Required		3	Program
Level 3	STS 132	Statistical Methods	Required	Introduction of Statistics STS 121	3	Program
	STS 133	Introduction to Probability	Required	Introduction of Statistics STS 121	3	Program
	MTHS 214	Mathematical Programming 2	Required	Mathematical Programming 1 MTHS 212	3	Program
	----	University Required	Required		2	University
	MTHS 213	Advanced Integral and Differential Calculus	Required	Integral Calculus MTHS 131	3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	DSC 211	**Algorithms and Data Structures**	**Required**	**Mathematical Programming 1 MTHS 212**	**3**	**Program**
	DSC 232	**Data Engineering**	**Required**	**Mathematical Programming 1 MTHS 212**	**3**	**Program**
	MTHS 211	**Linear Algebra 1**	**Required**	**Discrete Mathematics MTHS 122**	**3**	**Program**
Level 4	STS 222	**Statistical programming languages**	**Required**	**Introduction of Statistics STS 121+ Statistical Methods STS 132**	**3**	**Program**
	STS 211	**Probability and Statistics**	**Required**	**Probability and Statistics 1 STS 133**	**3**	**Program**
	STS 223	**Regression analysis**	**Required**	**Statistical Methods STS 132**	**3**	**Program**
	STS 224	**Time series and forecasting**	**Required**	**Probability and Statistics STS 211**	**3**	**Program**
Level 5	STS 311	**Linear models**	**Required**	**Linear Algebra**	**2**	**Program**

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
				MTHS 211		
	DSC 233	Data analysis	Required	Introduction to data science DSC 121	3	Program
	DSC 234	Database	Required	Mathematical Programming 1 MTHS 212	3	Program
	-----	University required	Required		2	University
	STS 235	Sampling and non-parametric methods	Required	Time series and forecasting STS 223	3	Program
	STS 322	Statistical Inference	Required	Time series and forecasting STS 223	3	Program
	DSC 311	Machine learning I	Required	Introduction of Statistics STS 121	3	Program
Level 6	DSC 312	Data Mining	Required	Data analysis DSC 233	3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	DSC 323	Machine learning II	Required	Machine learning I DSC 311	3	Program
	DSC 334	Big Data and Data Warehouse	Required	Data Mining DSC 312	3	Program
	STS 333	Survival analysis	Required	Linear models STS 322+ Introduction to Statistical Inference STS 311	3	Program
	MTHS 232	Linear programing	Required	Linear Algebra MTHS 211	3	program
	-----	University elective	Elective		2	University
	----	Department elective	Elective		2	program
Level 7	ASDM 421	Graduate project 1	Required		2	Program
	DSC 411	Application in Bioinformatics	Required	Machine learning II DSC 323	3	Program
	STS 411	Multivariate analysis	Required	Sampling and non-parametric methods STS 235+ Time series and	3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
				forecasting STS 224		
	STS 422	**Statistical decision theory**	**Required**	**Statistical Inference STS 322**	**4**	**Program**
	----	**Department elective**	**Elective**		**2**	**Program**
	----	**Department elective**	**Elective**		**2**	**Program**
	-------	**University elective**	**Required**		**2**	**University**
Level 8	**STS 423**	**Design Experiments**	**Required**	**Probability and Statistics STS 211**	**4**	**program**
	ASDM 432	**Graduate project 2**		**Graduate project 1 ASDM 421**	**2**	**Program**
	ASDM 433	**Training field**	**Required**	**Pass in the preceding 11 levels**	**3**	**Program**
	DSC 432	**Deep learning**	**Required**	**Machine learning II DSC 323**	**3**	**Program**
	-----	**University elective**	**Required**		**2**	**University**
	----	**Department elective**	**Elective**		**2**	**Department**

* Include additional levels (for three semesters option or if needed).
** Add a table for the courses of each track (if any)

The Elective Program Courses Requirements:

course code	Course name	Credit Hour	Pre-Requisite	Co-Requisite
STS 121	**Population study Demography**	**2**	**STS 121**	
STS 424	**Reliability Theory**	**2**	**STS 211**	
STS 425	**Stochastic Processes**	**2**	STS 211	
MTHS 231	**Applied Ordinary Differential Equations**	**2**	**MTHS 213**	
MTHS 232	**Linear Algebra 2**	**2**	**MTHS 211**	
MTHS 224	**Optimization Techniques**	**2**	**MTHS 232**	
MTHS 225	**Graph Theory**	**2**	**MTHS 122**	
MTHS 412	**Game Theory**	**2**	**MTHS 122**	
MTHS 413	**Numerical Methods**	**2**	**MTHS 211**	
MTHS 445	Cryptography Theory	2	MTHS 214	

First exist point: Training certificate (in English Language)

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	**ENGD 111**	**English Reading skills**	**Required**		**3**	**Program**
	ENGD 112	**English Writing skills**	**Required**		**3**	**Program**
	ENGD 113	**English Grammar**	**Required**		**3**	**Program**
	ENGD 114	**English Vocabulary Building**	**Required**		**3**	**Program**
	ENGD 115	**English Listening and speaking skills**	**Required**		**3**	**Program**

Second exist point: Associate Diploma in Statistics

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	ENGD 111	English Reading skills	Required		3	Program
	ENGD 112	English Writing skills	Required		3	Program
	ENGD 113	English Grammar	Required		3	Program
	ENGD 114	English Vocabulary Building	Required		3	Program
	ENGD 115	English Listening and speaking skills	Required		3	Program
Level 2	MTHS 121	Differential Calculus	Required		3	Program
	MTHS 122	Discrete Mathematics	Required		3	Program
	STS 121	Introduction of Statistics	Required		3	Program
	DSC 121	Introduction to data science	Required		3	Program
Level 3	MTHS 131	Integral Calculus	Required	Differential Calculus MTHS 121	3	Program
	STS 132	Statistical Methods	Required	Introduction of Statistics STS 121	3	Program
	STS 133	Introduction to Probability	Required	Introduction of Statistics STS 121	3	Program
	MTHS	Mathematical	Required		3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	212	**Programming 1**				

Third exist point: Intermediate Diploma in Applied Statistics and data sciences

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	ENGD 111	**English Reading skills**	**Required**		**3**	**Program**
	ENGD 112	**English Writing skills**	**Required**		**3**	**Program**
	ENGD 113	**English Grammar**	**Required**		**3**	**Program**
	ENGD 114	**English Vocabulary Building**	**Required**		**3**	**Program**
	ENGD 115	**English Listening and speaking skills**	**Required**		**3**	**Program**
Level 2	MTHS 121	**Differential Calculus**	**Required**		**3**	**Program**
	MTHS 122	**Discrete Mathematics**	**Required**		**3**	**Program**
	STS 121	**Introduction of Statistics**	**Required**		**3**	**Program**
	DSC 121	**Introduction to data science**	**Required**		**3**	**Program**
Level 3	MTHS 131	**Integral Calculus**	**Required**	**Differential Calculus MTHS 121**	**3**	**Program**

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	STS 132	**Statistical Methods**	**Required**	**Introduction of Statistics STS 121**	**3**	**Program**
	STS 133	**Introduction to Probability**	**Required**	**Introduction of Statistics STS 121**	**3**	**Program**
	MTHS 212	**Mathematical Programming 1**	**Required**		**3**	**Program**
Level 4	MTHS 213	**Advanced Integral and Differential Calculus**	**Required**	**Integral Calculus MTHS 131**	**3**	**Program**
	DSC 211	**Algorithms and Data Structures**	**Required**	**Mathematical Programming 1 MTHS 212**	**3**	**Program**
	MTHS 214	**Mathematical Programming 2**	**Required**	**Mathematical Programming 1 MTHS 212**	**3**	**Program**
	STS 211	**Probability and Statistics**	**Required**	**Introduction to Probability STS 133**	**3**	**Program**
Level 5	STS 222	**Statistical programming languages**	**Required**	**Introduction of Statistics STS 121+ Statistical Methods STS 132**	**3**	**Program**

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	STS 223	**Regression analysis**	Required	**Statistical Methods STS 132**	3	Program
	STS 224	**Time series and forecasting**	Required	**Probability and Statistics STS 211**	3	Program
	MTHS 211	**Linear Algebra 1**	Required	**Discrete Mathematics MTHS 122**	3	Program
Level 6	DSC 232	**Data Engineering**	Required	**Mathematical Programming 1 MTHS 212**	3	Program
	DSC 233	**Data analysis**	Required	**Introduction to data science DSC 121**	3	Program
	DSC 234	**Database**	Required	**Mathematical Programming 1 MTHS 212**	3	Program
	STS 235	**Sampling and non-parametric methods**	Required	**Time series and forecasting STS 223**	3	Program

3. Course Specifications:

◆◆◆◆

Insert hyperlink for all course specifications using NCAAA template (T-104)

Department webpage
https://www.mu.edu.sa/en/colleges/college-of-science-al-zulfi/19827

4. Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses, according to the following desired levels of performance
(I = Introduced & P = Practiced & M = Mastered).

Course code & No.	Program Learning Outcomes											
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility			
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3	V4
MTHS 121	I 40%		I 30%		I 30%							
MTHS 122	I 45%		I 40%		I 15%							
STS 121		I 30%		I 30%							I 40%	
DSC121		I 30%		I 30%							I 40%	
MTHS 131	I 30%		I 30%							I 40%		
STS 132	I 30%		I 30%							I 40%		
STS 133	M 30%				M 30%					P 40%		
MTHS 212	P			M	P		M					
MTHS 213	I 30%		P 30%				M 40%					
DSC 211	I 30%		M 40%				M 30%					
MTHS 214			M 30%			P 40%				P 30%		
STS 211			P 30%				M 30%			P 40%		
STS 222	P 30%		P 40%									I 30%
STS 223				P 40%		P 20%		P 40%				

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| Course code & No. | Program Learning Outcomes ||||||||||||
| | Knowledge and understanding |||| Skills |||| Values, Autonomy, and Responsibility ||||
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3	V4
STS 224			P 40%		P 20%		P 40%					
MTHS 211				P 40%		P 20%		P 40%				
DSC 232			P 30%				M 30%				P 40%	
DSC 233												
DSC 234	M 30%			P 40%								M 30%
STS 235			P 30%				M 30%				P 40%	
DSC 311	P 30%				M 30%				P 40%			
DSC 312		P 30%				M 30%				P 40%		
STS 311			P 30%				M 30%				P 40%	
STS 322	P 30%				M 30%				P 40%			
DSC 323		P 30%				M 30%						
DSC 334	P 30%				M 30%				P 40%			
STS 333	P 40%				P 30%							M 30%
MTHS 232	P 40%				P 30%							M 30%
DSC 411	P 30%				M 30%				P 40%			
STS 411			P 30%				M 30%				P 40%	
ASDM 421	P 40%				P 30%							M 30%
STS 422	P 30%				M 30%				P 40%			

Course code & No.	Program Learning Outcomes											
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility			
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3	V4
STS 423												

* Add a separated table for each track (if any).

Associate Diploma in Statistics

Course code & No.	Program Learning Outcomes											
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility			
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3	V4
MTHS 121	I 40%		I 30%		I 30%							
MTHS 122	I 45%		I 40%		I 15%							
STS 121		I 30%		I 30%							I 40%	
DSC121		I 30%		I 30%							I 40%	
MTHS 131	I 30%		I 30%							I 40%		
STS 131	I 30%		I 30%							I 40%		
STS 133	M 30%				M 30%					P 40%		
MTHS 212	P			M		P		M				
MTHS 213	I 30%		P 30%				M 40%					
DSC 211	I 30%		M 40%				M 30%					
MTHS 214			M 30%			P 40%				P 30%		
STS 211			P 30%				M 30%			P 40%		
STS 222	P 30%		P 40%									I 30%

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Intermediate Diploma in Applied Statistics and data sciences

Course code & No.	Program Learning Outcomes											
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility			
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3	V4
MTHS 121	I 40%		I 30%		I 30%							
MTHS 122	I 45%		I 40%		I 15%							
STS 121		I 30%		I 30%							I 40%	
DSC121		I 30%		I 30%							I 40%	
MTHS 131	I 30%		I 30%							I 40%		
STS 131	I 30%		I 30%							I 40%		
STS 133	M 30%				M 30%					P 40%		
MTHS 212	P			M		P		M				
MTHS 213	I 30%		P 30%				M 40%					
DSC 211	I 30%		M 40%				M 30%					
MTHS 214			M 30%			P 40%				P 30%		
STS 211			P 30%				M 30%			P 40%		
STS 222	P 30%		P 40%									I 30%
STS 223			P 40%		P 20%		P 40%					
STS 224			P 40%		P 20%		P 40%					
SALM 103												
MTHS 211			P 40%		P 20%		P 40%					

Course code & No.	Program Learning Outcomes											
	Knowledge and understanding				Skills				Values, Autonomy, and Responsibility			
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3	V4
DSC 232			P 30%				M 30%				P 40%	
DSC 233												
DSC 234	M 30%			P 40%								M 30%
STS 235			P 30%				M 30%				P 40%	

* Add a separated table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes.

Describe teaching and learning strategies, including curricular and extra-curricular activities, to achieve the program learning outcomes in all areas.

- **Lectures that are considered as direct teaching between the lecturer and students, whether through class rooms or by using e-learning (blackboard). This strategy occupied the most of the time.**
- **Aimed teaching that is a strategy for developing oral discussion, creativity and imagination.**
- **Cooperative learning is a strategy to encourage students to work together by dividing them to small groups for solving and discussion about the topics and class activities.**
- **Promote problem-solving is a strategy involve that students are asked to solve problems related to the given topic individually and within a team.**
- **Writing to learn is an important strategy where students are encouraged to write the lectures to remember more, also they are given assignments to enhance their abilities and thinking skills.**
- **Tutorials Students are attending tutorial lectures, which were mostly done by tutor staff and the lecturers' office to get more information about any topic or discuss certain tasks.**

6. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.

The program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least twice in the bachelor program's cycle and once in other degrees).

- **Oral**
- **Quizzes**
- **Home works**

- **Group Assignments**
- **Midterm**
- **Final Exam**
- **Projects**

D. Student Admission and Support:

1. Student Admission Requirements

The admission process for all students of MU is performed mainly electronically via the Edu-Gate electronic system. Electronic admission starts by student's online application and completed by MU sending an acceptance letter and files of those who are accepted.

The following requirements have been stipulated for the admission of the new student:

- **An applicant for admission must have a Saudi High School Certificate - Science Section (SHSCSS) or its equivalent. The High school certificate should not be more than five years old.**
- **Must have an Aptitude Test Certificate (ATC) administered by the National Center for Assessment in Higher Education.**
- **The minimum qualifying scores in Saudi High School Certificate - Science Section and (ATC) tests are: A total equivalent percentage of 85% (based on 30% from the SHSCSS + 30% from the ATC + 40% from cumulative Basic Science of SHSCSS).**
- **Must not have been dismissed from another university for disciplinary reasons.**
- **When applicants exceed availability, priority is given to the students with higher grades.**

2. Guidance and Orientation Programs for New Students

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

- **At the beginning of the year, there are academic guidance activities help the new students to know the equipment and facilities of the college.**
- **Distribute the new students among the academic guidance lists for all staff members.**
- **The absence of new students is followed by committee of students' affairs in the program.**
- **Some guidance and advices are provided through the university, college and program website.**

3. Student Counseling Services

(Academic, professional, psychological and social)

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

- **The program handbook gives details and all requirements of the program.**
- **List of academic guidance and office hours per week are declared on each faculty member office.**
- **The program shares with its students any important information related to the academic process on educational process through various technical tools such as the blackboard system, the use of official emails and various social media.**

4. Special Support

(Low achievers, disabled, gifted, and talented students).

- **The college's complex is provided all the requirements of disabled students (elevators, car parking, and special paths).**
- **Cooperative learning or other forms of teamwork are an active method to meet the needs of low achievers and gifted students.**
- **Monitoring and helping the low achievers through discussed them, and identify the causes for the low performance. They are asked for extra support in office hours.**
- **Participate the talented students in internal and external activities.**

E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T

Professor	Statistics and probability	Statistics and probability		1	1	2
Associate Professor	Statistics and probability	Statistics and probability		1	1	2
Assistant Professor						
Lecturer						
Teaching Assistant						
Technicians and Laboratory Assistant	Technician of Labs	Technician of Labs		2	1	3
Administrative and Supportive Staff						
Others (specify)						

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

Learning resources required by the Program (textbooks, references, and e-learning resources and web-based resources, etc.)

- **Internal committees determine the references and academic plan reviews these references.**
- **Providing deanship of library affairs annually the required references.**
- **Availability of faculty members and students to access Saudi library digital.**

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

- **There is library in the complex and there is central library at main campus. Electronic library is represented by Saudi library digital.**
- **The program has two computers lab providing with mathematical programs (Mathematica, Matlab, etc.,…).**

- **Class rooms providing smart board, classic board, and availability video conference for female section.**

- **The campus has medical clinic for the faculty members and students.**

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

- **All the labs have clear safety procedures.**

- **There are brochures explain the instructions and rules.**

- **There are no any dangerous materials in the labs and classrooms.**

- **The complex is designed to exist Good ventilation.**

- **There are signs explain the emergency exit and assembly points according the international criteria.**

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.

College Website:
https://www.mu.edu.sa/ar/%D9%83%D9%84%D9%8A%D8%A9-
%D8%A7%D9%84%D8%B9%D9%84%D9%88%D9%85-
%D8%A8%D8%A7%D9%84%D8%B2%D9%84%D9%81%D9%8A/%D8%A7%D9%84
%D9%83%D9%84%D9%8A%D8%A7%D8%AA

Department E-store:
https://majmaah-
my.sharepoint.com/personal/m_omar_mu_edu_sa/_layouts/15/onedrive.aspx?id=%2Fpers
onal%2Fm%5Fomar%5Fmu%5Fedu%5Fsa%2FDocuments%2FMATHS%2E%20DEPT%
2E%20E%2DSTORE&parent=

2. Procedures to Monitor Quality of Courses Taught by other Departments

- **The program sends its suggestions about the contents and learning outcomes of courses taught by other Departments.**
- **The program takes look of these courses files and discusses the results and recommendations with the staff in charge.**
- **Overall improvement plan is prepared by considering the recommendations by**

staff members in their courses reports at the end of each term.

3. Procedures Used to Ensure the Consistency between Main Campus and Branches (including male and female sections).

- By regular communication between them through meeting, telephones and emails.
- Existence coordinator of courses, which perform the following.
- The course coordinator is primarily responsible for everything related to the course (teaching - final exam - etc.).
- Coordinate with the other colleagues in the scientific content of the course being taught.
- Unify the final exam.
- Developing a specific mechanism in coordination with the other colleagues for equal opportunities among all those studying the course.
- Participating the faculty members from both sections in all committees.

4. Assessment Plan for Program Learning Outcomes (PLOs),

- Program Learning Outcomes (PLOs) are regularly assessed through the following mechanisms - Questioning and surveying stakeholders, - Internal and External review process, - Doing some reports and discussions within quality assurance committee.
- Program Learning Outcomes (PLOs) are assessed by several ways like term assignments (midterms-quizzes- presentations, etc. ...), final exams and questionnaires.
- The mechanisms that are used in the development processes are follows:
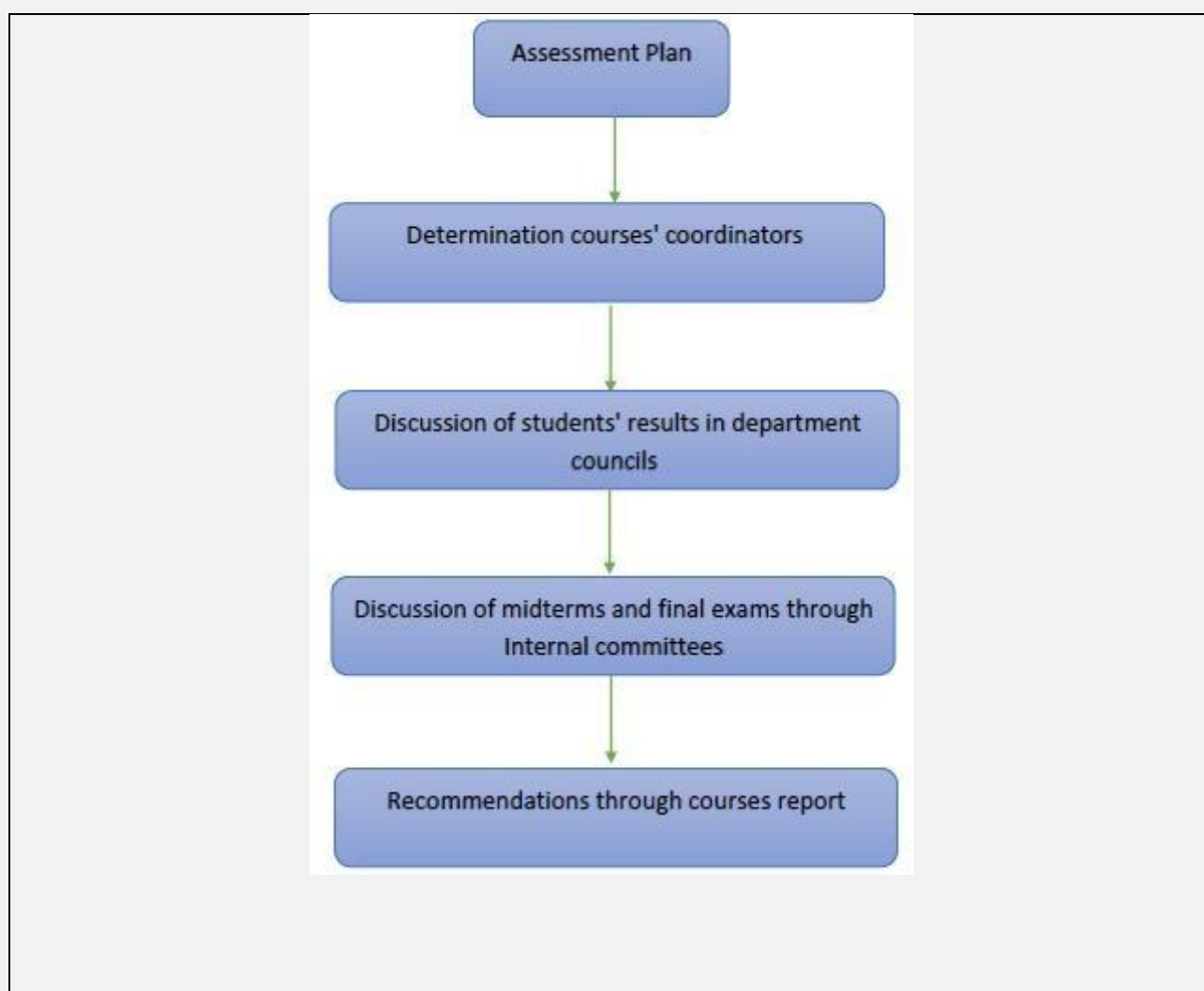
5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of teaching & assessment	Students	Surveys	End of academic year
Learning resources	Students	Surveys	End of academic year
Effectiveness of teaching & assessment	Graduates	Surveys	End of academic year
Learning resources	Graduates	Surveys	End of academic year
Effectiveness of teaching & assessment	Alumni	Surveys	End of academic year
Learning resources	Alumni	Surveys	End of academic

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
			year
Leadership and communication skills	Alumni	Surveys	End of academic year
Leadership, effectiveness of teaching & assessment, learning resources, partnerships	Internal independent evaluation	Visits	End of academic year
Leadership, effectiveness of teaching & assessment, learning resources, partnerships	External independent evaluation	Visits	End of academic year

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.)

Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others.

Evaluation Methods (e.g., Surveys, interviews, visits, etc.)

Evaluation Time (e.g., beginning of semesters, end of the academic year, etc.)

6. Program KPIs*

The period to achieve the target (_____) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-P01	Percentage of achieved indicators of the program operational plan objectives	75%	KPIs report	End of academic year
2	KPI-P02	Students' Evaluation of quality of learning experience in the program	3.75	Survey	End of academic year
3	KPI-P03	Students' evaluation of the quality of the courses	3.75	Survey	End of academic semester
4	KPI-P04	Completion rate	75%	From Deanship of Admission and Registration, annual report of department	Beginning of academic year
5	KPI-P05	Percentage of students entering programs who successfully complete first year.	NA	From Deanship of Admission and Registration, annual report of department	Beginning of academic year
6	KPI 6	Students' performance in the professional and/or national examinations	50%	From Professional licensing system for teaching jobs report	Beginning of academic year
7	KPI-P07	Percentage of graduates from the program who within a year of graduation were: Employability Graduates' employability and Enrolment in postgraduate programs	75%	From Graduation committee report	Beginning of academic year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
8	KPI-P08	Average number of students in the class	10	From Deanship of Admission and Registration: times tables	End of academic year
9	KPI-P9	Employers' evaluation of the program graduates proficiency	75%	Survey	End of academic year
10	KPI-P10	Students' evaluation of the offered services	3.75	Survey	End of academic year
11	KPI-P11	Ratio of students to teaching staff	10	From Deanship of Admission and Registration, annual report of department	Beginning of academic year
12	KPI-P12	Percentage of teaching staff distribution (according holding PHD degree)	70%	From Deanship of Admission and Registration, annual report of department	Beginning of academic year
13	KPI-P13	Proportion of teaching staff leaving the program	0 %	From Deanship of Admission and Registration, annual report of department	End of academic year
14	KPI-P14	Percentage of publications of faculty members	65%	From scientific research committee report	Beginning of academic year
15	KPI 15	Number of refereed publications / member of teaching staff : x/1	2/1	From scientific research committee report	Beginning of academic year
16	KPI 16	Number of citations/ All teaching staff: X/1	200/1	From scientific research committee report	Beginning of academic year
17	KPI-P17.a	Stakeholder evaluation of the learning resources	3.75	Survey	End of academic year
18	KPI-P17.b		3.75	Survey	End of academic year
19	KPI-P17.c		3.75	Survey	End of academic year
20	KPI-P17.d		3.75	Survey	End of academic year
21	KPI-P17.e		3.75	Survey	End of academic year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
22	MU-P1	Stakeholder evaluation of community services	3.75	Survey	End of academic year
23	MU-P2	Proportion of students have one notification or more	2	From student affair committee report	End of academic year
24	MU-P3	Proportion of deprived students.	2	From student affair committee report	End of academic year
25	MU-P4	The number of student researches	2	From scientific research committee report	End of academic year
26	MU-P5	Percentage of teaching staff participating in professional development activities	75%	From Quality Committee of Course specification and reports	End of academic year
27	KPI-MP1	Stakeholder evaluation ratings of the Mission Statement and Objectives	3.75	Survey	End of academic year
28	KPI-MP2	Proportion of courses in which there was independent verification within the institution	75%	From Quality Committee of Course specification and reports	End of academic year
29	KPI-MP3	Proportion of courses in which student evaluations were conducted during the year	75%	From course reports	End of academic year
30	KPI-MP4	Proportion of students participating in extracurricular activities	75%	From student affair committee report	End of academic year
31	KPI-MP5	Number of community education programs provided by the program	5	From community services committee report	End of academic year

*including KPIs required by NCAAA

H. Specification Approval Data:

Council / Committee	THE DEPARTMENT COUNCIL
Reference No.	8TH MEETING
Date	15 /3 / 1444 H