Program Learning Outcomes

Measurement Report

1442-1443

Bachelor in Mathematics

Department of I Mathematics

College of Science and Arts, ALmajarda

King Khalid University, KSA

Program Learning Outcomes

Code	Student Outcome	Target	Measured Value
Knowledge and Understanding			
K1	Mentions related mathematical definitions, postulates and theorems.		3.9
K2	Knows the methods of mathematical proofs.		3.4
K3	Describes ways to solve some mathematical problems.		3.6
K4	Explains some applications of mathematics.		3.2
Skills			
S1	Uses definitions and theorems to solve issues.		4
S2	Justifies logically and mathematically the solving steps.		3.3
S3	Links different knowledge and skills in the program.		3.1
S4	Formulates mathematical models for some practical issues.		2.7
Values			
V1	Adheres to Islami`-c values and excellence in professional practices.		2.2
V2	Enhances his ability to self-learning.		2
V3	Acquires effective communication skills.		2.2

Mapping :

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
101math													
1.1	✓											5	3 .0
1.2		✓										5	2.8
1.3			✓									5	3.5
1.4				✓								5	3.0
2.1					✓							5	2.8
2.2						✓						5	4
2.3							✓					5	3.0
2.4								✓				5	2.0
2.5									✓			5	2.5
2.6										✓		5	3.5
3.1											✓	5	5
101math	3 .0	2.8	3.5	3.0	2.8	4	3.0	2.0	2.5	3.5	5		
Calculus 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
202math													
1.1	✓											5	3.4
1.2		✓										5	4.0
1.3			✓										3.2
1.4				✓								5	3.2
2.1					✓							5	3.8
2.2						✓						5	3.4
2.3							✓					5	3.3
2.4								✓				5	3.1
3.1									✓			5	3.3
3.2										✓		5	3.4
3.3											✓	5	3.1
202math	3.4	4.0	3.2	3.2	3.8	3.4	3.3	3.1	3.3	3.4	3.1		
Calculus 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
203math													
1.1	✓											5	3.8
1.2		✓										5	3.4
1.3												5	3.1
1.4				✓								5	4.4
2.1					✓							5	2.6
2.2						✓						5	2.5
2.3							✓					5	4
2.4								✓				5	4.4
3.1									✓			5	4.2
3.2										✓		5	3.9
3.3											✓	5	3.8
203math	3.8	3.4	3.1	4.4	2.6	2.5	4	4.4	4.2	3.9	3.8		
Calculus 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
262math													
1.1	✓											5	4.5
1.2		✓										5	3.1
1.3			✓									5	4.5
1.4				✓								5	4.1
2.1					✓							5	2.9
2.2						✓						5	4
2.3							✓					5	2.7
2.4								✓				5	4.8
3.1									✓			5	3.4
3.2										✓		5	3.4
3.3											✓	5	4.9
263math	4.5	3.1	4.5	4.1	2.9	4	2.7	4.8	3.4	3.4	4.9		
Introduction to differential equation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
242math													
1.1	✓											5	3.6
1.2		✓										5	3.2
1.3			✓									5	3.9
1.4				✓								5	3.8
2.1					✓							5	4
2.2						✓						5	4.5
2.3							✓					5	3.2
2.4								✓				5	2.8
3.1									✓			5	3.7
3.2										✓		5	4.8
3.3											✓		
242math	3.6	3.2	3.9	3.8	4	4.5	3.2	2.8	3.7	4.8	0.00		
Linear Algebra 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
251math													
1.1	✓											5	4
1.2		✓										5	4.4
1.3			✓									5	4.5
1.4				✓								5	4.4
2.1					✓							5	4.9
2.2						✓						5	4.3
2.3							✓					5	4.5
2.4								✓				5	4.3
3.1									✓			5	4.4
3.2										✓			
3.3											✓		
251math	4.00	4.4	4.5	4.4	4.9	4.3	4.5	4.3	4.4	0.00	0.00		
Computer Programming for Mathematics	✓	✓	✓	✓	✓	✓	✓	✓	✓				

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
304math													
1.1	✓											5	4.3
1.2		✓										5	2.8
1.3			✓									5	2.8
1.4				✓								5	2.8
2.1					✓							5	
2.2						✓						5	
2.3							✓						
2.4								✓					
3.1									✓			5	3.5
3.2										✓		5	3.4
3.3											✓	5	3.5
304math	4.3	2.8	2.8	2.8	0.00	0.00	0.00	0.00	3.5	3.4	3.5		
Vector Calculus	✓	✓	✓	✓					✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
313stat													
1.1	✓											5	3.6
1.2		✓										5	3.6
1.3			✓									5	3.3
1.4				✓								5	3.7
2.1					✓							5	4.9
2.2						✓						5	3.1
2.3							✓					5	3.6
2.4								✓					
3.1									✓				
3.2										✓			
3.3											✓		
313stat	3.6	3.6	3.3	3.7	4.9	3.1	3.6	0.00	0.00	0.00	0.00		
Probabilities Theory 1	✓	✓	✓	✓	✓	✓	✓						

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
322math													
1.1	✓											5	3.5
1.2		✓										5	3.5
1.3			✓									5	3.5
1.4				✓								5	3.5
2.1					✓							5	3.5
2.2						✓						5	3.5
2.3							✓					5	3.5
2.4								✓				5	3.5
3.1									✓				
3.2										✓			
3.3											✓		
322math	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.00	0.00	0.00		
Real Analysis 1	✓	✓	✓	✓	✓	✓	✓	✓					

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
323math													
1.1	✓											5	3.7
1.2		✓										5	3.9
1.3			✓									5	3.1
1.4				✓								5	2.8
2.1					✓							5	3.5
2.2						✓						5	2.8
2.3							✓					5	2.8
2.4								✓				5	3.4
3.1									✓			5	3.4
3.2										✓		5	3.7
3.3											✓	5	2.7
323math	3.7	3.9	3.1	2.8	3.5	2.8	2.8	3.4	3.4	3.7	2.7		
Real Analysis 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
344math													
1.1	✓											5	3.5
1.2		✓										5	3.5
1.3			✓									5	3.5
1.4				✓								5	3.5
2.1					✓							5	3.5
2.2						✓						5	3.5
2.3							✓					5	3.5
2.4								✓				5	3.4
2.5									✓			5	3.5
3.1									✓			5	3.4
3.2										✓			
3.3													
344math	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.4	0.00	0.00		
Number Theory	✓	✓	✓	✓	✓	✓	✓	✓	✓				

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
345math													
1.1	✓											5	4.1
1.2		✓										5	3.1
1.3			✓									5	3.1
1.4				✓								5	3.9
2.1					✓							5	3.7
2.2						✓						5	4
2.3							✓					5	3.9
2.4								✓				5	3.2
3.1									✓			5	4.8
3.2										✓			
3.3											✓		
345math	4.1	3.1	3.1	3.9	3.7	3.9	3.2	4.8	0.00	0.00	0.00		
Group Theory	✓	✓	✓	✓	✓	✓	✓	✓					

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
352math													
1.1	✓											5	4.5
1.2		✓										5	4.5
1.3			✓									5	4.5
1.4				✓								5	3.7
2.1					✓							5	3.6
2.2						✓						5	3.1
2.3							✓					5	3
2.4								✓				5	3.4
3.1									✓			5	2.8
3.2										✓		5	4.8
3.3													
352math	4.5	4.5	4.5	3.7	3.7	3.6	3.1	3.4	2.8	4.8	0.00		
Numerical Analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
363math													
1.1	✓											5	3.7
1.2		✓										5	3.9
1.3			✓									5	3.1
1.4				✓								5	2.8
2.1					✓							5	3.5
2.2						✓						5	2.8
2.3							✓					5	2.8
2.4								✓				5	3.4
3.1									✓			5	3.7
3.2										✓		5	2.7
3.3											✓	5	3.9
363math	3.7	3.9	3.1	2.8	2.8	3.5	2.8	3.4	3.7	2.7	3.9		
Mathematical Methods	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
414stat													
1.1	✓											5	3.8
1.2		✓										5	3.1
1.3			✓									5	3.9
1.4				✓								5	4.6
2.1					✓							5	4.4
2.2						✓						5	4.8
2.3							✓					5	3.1
2.4								✓					
3.1									✓				
3.2										✓			
3.3											✓		
414stat	3.8	3.1	3.9	4.6	4.4	4.8	3.1	0.00	0.00	0.00	0.00		
Probabilities Theory 2	✓	✓	✓	✓	✓	✓	✓						

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
424math													
1.1	✓											5	4.5
1.2		✓										5	2.9
1.3			✓									5	3.6
1.4				✓								5	4.5
2.1					✓							5	3.4
2.2						✓						5	2.6
2.3							✓					5	4.6
2.4								✓					
3.1									✓				
3.2										✓			
3.3											✓		
424math	4.5	2.9	3.6	4.5	3.4	2.6	4.6	0.00	0.00	0.00	0.00		
Multivariable Real Analysis	✓	✓	✓	✓	✓	✓	✓						

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
432math													
1.1	✓											5	4.7
1.2		✓										5	4.3
1.3			✓									5	4.8
1.4				✓								5	4.6
2.1					✓							5	4.6
2.2						✓						5	4.7
2.3							✓					5	4.5
2.4								✓				5	4.7
3.1									✓			5	4.7
3.2										✓			
3.3											✓		
432math	4.7	4.3	4.8	4.6	4.6	4.7	4.5	4.7	4.7	0.00	0.00		
Graph Theory and Combinatory	✓	✓	✓	✓	✓	✓	✓	✓					

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
445math													
1.1	✓											5	3.5
1.2		✓										5	3.5
1.3			✓									5	3.5
1.4				✓								5	3.5
2.1					✓							5	3.5
2.2						✓						5	3.5
2.3							✓					5	3.5
2.4								✓				5	3.5
3.1									✓			5	3.5
3.2										✓		5	3.5
3.3											✓	5	3.5
445math	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		
Rings and Fields	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
464math													
1.1	✓											5	3.7
1.2		✓										5	3.9
1.3			✓									5	3.1
1.4				✓								5	2.8
2.1					✓							5	3.5
2.2						✓						5	2.8
2.3							✓					5	2.8
2.4								✓				5	3.4
3.1									✓			5	3.7
3.2										✓		5	2.7
3.3											✓	5	3.9
464math	3.7	3.9	3.1	2.8	3.5	2.8	2.8	3.4	3.7	2.7	3.9		
Theory of Differential Equations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
453math													
1.1	✓											5	4
1.2		✓										5	4.1
1.3			✓									5	3.4
1.4				✓								5	4
2.1					✓							5	3.7
2.2						✓						5	3.7
2.3							✓					5	3.7
2.4								✓				5	3.7
3.1									✓				
3.2										✓			
3.3											✓		
453math	4.00	4.1	4.00	3.4	4	3.7	3.7	3.7	3.7	0.00	0.00		
Mathematical Programming	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
472math													
1.1	✓											5	4.2
1.2		✓										5	4.3
1.3			✓									5	4.4
1.4				✓								5	4.3
2.1					✓							5	4.2
2.2						✓						5	4.7
2.3							✓					5	4.5
2.4								✓				5	4.7
3.1									✓			5	4.7
3.2										✓			
3.3											✓		
472math	4.2	4.3	4.4	4.3	4.2	4.7	4.5	4.7	4.7	0.00	0.00		
Differential Geometry	✓	✓	✓	✓	✓	✓	✓	✓	✓				

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
481math													
1.1	✓											5	3.8
1.2		✓										5	4.2
3.7			✓									5	3.7
1.4				✓								5	3.9
2.1					✓							5	3.9
2.2						✓						5	4.6
2.3							✓					5	3.2
2.4								✓					
3.1									✓				
3.2										✓			
3.3											✓		
481math	3.8	4.2	3.7	3.9	3.9	4.6	3.2	0.00	0.00	0.00	0.00		
Introduction to Topology	✓	✓	✓	✓	✓	✓	✓						

4.2

Courses	Student Outcomes											Target	Measured Value
	K1	K2	K3	K4	S1	S2	S3	S4	V1	V2	V3		
490math													
1.1	✓											5	3.7
1.2		✓										5	3.4
1.3			✓									5	3.3
1.4				✓								5	2.9
2.1					✓							5	3.7
2.2						✓						5	2.6
2.3							✓					5	3.3
2.4								✓				5	3.9
3.1									✓				
3.2										✓			
3.3											✓		
490math	3.7	3.4	3.3	2.9	3,7	2.6	3.3	3.9	0.00	0.00	0.00		
Special Topics	✓	✓	✓	✓	✓	✓	✓	✓					

Selected Courses for PLO Measurement

K1	3.7	K2	3.03	K3	3.5	K4	3.2	S1	3.02	S2	3	S3	3	S4	2.3	V1	2.3	V2	2	V3	2.2
101math	3 .0		2.8		3.5		3.0		2.8		4		3.0		2.0		2.5		3.5		5
202math	3.4		4.0		3.2		3.2		3.8		3.4		3.3		3.1		3.3		3.4		3.1
203math	4.3		2.8		2.8		2.8		0.00		0.00		0.00		0.00		3.5		3.4		3.5
212stat	**4.1**		**4**		**4**		**3.1**		**3.6**		**4.1**		**4.1**		**3.2**		**3.7**				
251math	4.00		4.4		4.5		4.4		4.9		4.3		4.5		4.3		4.4		0.00		0.00
304math	**3.4**		**2.8**		**2.8**		0.00		0.00		0.00		0.00		0.00		**3.4**		**3.5**		**3.5**
263math	4.5		3.1		4.5		4.1		2.9		4		2.7		4.8		3.4		3.4		4.9
242math	4.5		2.9		3.6		4.5		3.4		2.6		4.6		0.00		0.00		0.00		0.00
313stat	3.6		3.6		3.3		3.7		4.9		3.1		3.6		0.00		0.00		0.00		0.00
322math	3.5		3.5		3.5		3.5		3.5		3.5		3.5		3.5		0.00		0.00		0.00
323math	3.7		3.9		3.1		2.8		3.5		2.8		2.8		3.4		3.4		3.7		2.7

K1	4.02	K2	3.7	K3	3.6	K4	3.1	S2	4.8	S2	3.6	S3	3.2	S4	3	V1	2.1	V2	0.7	V3	0
344math	3.5		3.5		3.5		3.5		3.5		3.5		3.4		3.5		3.4		0.00		0.0
345math	4.1		3.1		3.1		3.9		3.7		3.9		3.2		4.8		0.00		0.00		0.00
352math	4.5		4.5		4.5		3.7		3.7		3.6		3.1		3.4		2.8		4.8		0.00
361math	**4**		**4.3**		**4.3**				**2.8**		**3.9**				**4.3**		**4.9**				
363math	3.7		3.9		3.1		2.8		2.8		3.7		2.7		3.9		0.00		0.00		0.00
414stat	3.8		3.1		3.9		4.6		4.4		4.8		3.1		0.00		0.00		0.00		0.00
424math	4.5		2.9		3.6		4.5		3.4		2.6		4.6		0.00		0.00		0.00		0.00
432math	4.7		4.3		4.8		4.6		4.6		4.7		4.5		4.7		4.7		0.00		0.00
445math	3.5		3.5		3.5		3.5		3.5		3.5		3.5		3.5		3.5		3.5		3.5

464math	3.7		3.9		3.1		2.8		3.5		2.8		2.8		3.4		3.7		2.7		3.9
453math	4.00		4.1		4.00		3.4		4		3.7		3.7		3.7		3.7		0.00		0.00
424mqth	4.5		2.9		3.6		4.5		3.4		2.6		4.6		0.00		0.00		0.00		0.00
472math	4.2		4.3		4.4		4.3		4.2		4.7		4.5		4.7		4.7		0.00		0.00
481math	3.8		4.2		3.7		3.9		3.9		4.6		3.2		0.00		0.00		0.00		0.00
490math	3.7		3.4		3.3		2.9		3,7		2.6		3.3		3.9		0.00		0.00		0.00

Analysis of Program Learning Outcomes Assessment

Strengths:
All the outcomeswere achieved comfortably. Students are good at application part of the skills, such as problem analysis, requirements collection, design and implementation, Students have satisfactory soft skills, such as communication, teamwork, leadership, etc. Students show motivation in learning and participation in community service.
Areas for Improvement:
Students retention of knowledge Students awareness of contemporary issues and technologies Students ability to evaluate case-studies
Priorities for Improvement:
Students retention of knowledge Students awareness of contemporary issues and technologies Students ability to evaluate case-studies