



SHAH ABDUL LATIF UNIVERSITY  
KHAIRPUR



## **SELF-ASSESSMENT REPORT (SAR)**

### **DEPARTMENT OF MATHEMATICS**

**Degree Program:**

BS-IV Years

Re-Submitted to:

Quality Enhancement Cell (QEC) Shah Abdul Latif University, Khairpur

By

Program Team (PT) Members:

- 1) Mr. Aijaz Ali Shaikh
- 2) Mr. Abdul Hameed Junejo

**2021-2022**

## TABLE OF CONTENTS

S. NO.	DESCRIPTION	PAGE #
1.	Introduction	01
2.	<b>Criterion 1:</b> Program Mission, Objective and Outcomes.	02
3.	Major Future Improvement Plans	04
4.	Alumni Survey	05
5.	Employer Survey	06
6.	<b>Criterion 2:</b>	07
7.	Program Objective	09
8.	<b>Criterion 3:</b> Laboratories and Computing Facilities	11
9.	<b>Criterion 4:</b> Student Support & Advising	11
10.	<b>Criterion 5:</b> Admission Criteria & Policy, registration, recruiting and retaining highly qualified faculty, faculty evaluation & promotion	13
11.	<b>Criterion 6:</b> Faculty	15
12.	Faculty Resume	15
13.	Faculty Development Program	16
14.	Teacher Evaluation Survey	17
15.	Survey of Graduating Students	18
16.	Student Course Evaluation Questionnaire Survey	19
17.	<b>Criterion 7:</b> Institutional Facilities	20
18.	<b>Criterion 8:</b> Institutional Support	21

## **Introduction**

The Department of Mathematics at Shah Abdul Latif University was established in 1987 and now is one of the fastest growing mathematics departments in the Pakistan. It has an excellent reputation, a strong, demanding program of BS, M.Sc. and MS/M.Phil courses with international syllabi offerings in accordance with the Higher Education Commission of Pakistan (HEC) directives. The department of mathematics has committed faculty members keen for progress and eager to emerge in world mathematics scenario; in this effort every faculty member is busy with their international research collaborators in projects with numerous publications. The department of mathematics has sufficient faculty with varied research interests in applied and pure mathematics which cater about over 300 full-time students in the BS program and 95 students in the MS/M.Phil Program.

Department of Mathematics also offers its services to other departments of the university in the form of teaching mathematics subjects to various faculties and their respective departments ranging from applicable algebra and calculus to decision makings of basic statistics and inferential statistics.

## **Vision**

Mathematics develops computational skills, critical thinking, and problem solving skills. The theory, discipline, and techniques taught in mathematics courses are especially important in today's society. The faculty of the Department of Mathematics recognizes this and strives to ensure that the students obtain this knowledge. At the same time, the faculty contributes to the discipline by fundamental research in pure and applied Mathematics.

## **Mission Statement of the Department:**

The Department of Mathematics offers courses and programs of study that ensure that the student will be able to contribute to the society. The students will obtain abilities to critically assess numerical and graphical information; learn to formulate strategies for solving problems; and acknowledge the importance of being intellectually curious throughout their lives. The Department, through its faculty, will continue to contribute to the body of knowledge of the discipline, whether in traditional research, or applied research.

## **Mission Statement of the University:**

- ✓ To provide affordable and accessible quality Under-Graduate, Graduate and Post-Graduate degree Programs, national and international in scope.
- ✓ To care and promote quality research environment provide consulting faculties to industrial/Business and services sector with a realization of needs of community and national responsibility towards economic growth and welfare.

- ✓ To build national character and put focus on production of quality graduates to contribute in the economic, Industrial and social development of the country.
- ✓ To promote a campus environment that welcomes and honor women and men and an atmosphere that values intellectual curiosity, pursuit of knowledge, and academic freedom and integrity.

**Objectives**

The students after completion of the graduate and post graduate study in Mathematics should be able to:

- Be familiar with that mathematics is an art as well as a dominant initial tool of science with vast applications.
- Validate an understanding of the theoretical concepts and axiomatic foundations of Mathematics and an ability to build proofs at the appropriate level.
- Show competency in mathematical modeling of complex phenomena, problem solving and decision making in life.
- Determine a level of proficiency in quantitative and computing skills adequate to meet the demands of society.

**PROGRAMS OFFERED**

**Criterion 1: Program Mission, Objective and Outcomes.**

**Standards 1.1:** The program must have documented measurable Objectives that support Faculty / Institution Mission Statements.

**Program Objectives:**

<b>Table1.</b> Shows how Objectives are measured and Improvements have been identified			
<b>Program Objectives Assessment</b>			
<b>Objectives</b>	<b>How Measured</b>	<b>When Measured</b>	<b>Improvement Identified</b>
<b>Develop an understanding of the problems.</b>	Excessive teaching of text at length.	Since the start of session.	Students are tested by examination.
<b>Become prepared for careers in mathematics and related field</b>	Transfer of knowledge and practical exercises	Routinely in well-equipped problems	Problems are performed to check the ability.
<b>Develop discipline in their organization</b>	Extra classes are conducted by professors of the field	Throughout BS and M.Sc. problem	Behavior is observed by assigning them related activities

👉 **Note: Improvement Made:** This will be informed after AT visits.

**Standard 1-2:** The program must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.

**Table: 2.** The following Table shows how program outcomes support the Program Outcomes.

Program Objectives	Program Outcomes		
	1.	2.	3.
<b>Develop an understanding of problems and nature of problems to solve it.</b>	Students reached in the field of research and development organization are performing very well	-----	-----
<b>Become prepared for careers in mathematics and related fields</b>	Students quality GRE	Working in research organization	-----
<b>Develop discipline in their personal life to lead organization</b>	Progress reports from supervisors are satisfactory	-----	-----

Program Objectives	Program Outcomes		
	1	2	3
<b>Develop an understanding of mathematical problems and its nature</b>	XXXX	XXX	XXX
<b>Become prepared for careers in mathematics and related fields</b>	XXX	XXX	XXX
<b>Develop discipline in their personal life to lead organization</b>	XXXX	XXX	XXX
X	Relevant & satisfactory to some extent		
XX	Relevant & satisfactory		
XXX	Very relevant & satisfactory		
XXXX	Highly relevant & highly satisfactory		

**Standard 1-3.** The result of program’s assessment and the extent to which they are used to improve the program must be documented.

### Major Future Improvement Plans:

- ☞ To impart quality education in the department using audio visual aids and modern tools along with provision of latest literature, journals, books, reviews and access to internet.
- ☞ To upgrade Graduate & Post Graduate Laboratories with the modern & sophisticated equipments
- ☞ To emphasize problem oriented research work on specific areas related to plants.
- ☞ Overall enhancement of knowledge and skills of faculty members in relation to the latest global advancements in various discipline through exchange programs, short trainings and collaborative research projects within and outside country.

**Table: 4.** Shows Program Strengths & Weakness.

Program Strengths and weaknesses.				
Program	Strengths	Weaknesses	Things to be developed	Activities taken for improvements
BS.I - BS.IV, M.Sc. (Prev.) M.Sc. (Final)	Major Mathematics	Business Communication	1 Class Room 2 Lecture Hall with audiovisual adds	Requests are sent to concerned centers

**Standard 1.4:** The department must assess its overall performance periodically using quantifiable measures.

**Table: 5.** Number of student enrolment during last three years and student faculty ratio:

Program	Year 2014	Students/ Faculty Ratio	Year 2015	Students/ Faculty Ratio	Year 2016	Students/ Faculty Ratio
BS (4-Years) / M.Sc. (2-Y) & BS (2- Years) for Minor	321 Major 153 Minor	153.44:1	320 Major 1108 Minor	158.67:1	368 Major 1144 Minor	168:1
<b>Total</b>	<b>1381</b>		<b>1428</b>		<b>1512</b>	

**Table: 7.** Number of publications, awards, workshops & seminars organized by the faculty:

Publications (HEC recognized only)		Research Projects		Monograph	Awards	Scholars produced		Organized National & International Conferences
National	International	Completed	On-going			M.Phil	Ph.D	
13	1	Completed			Presidential award	1		1

## Alumni Survey

(To be filled by Alumni- after the completion of each academic year)

Department: Mathematics

Year: 2016

A: Excellent      B: Very Good      C: Good      D: Fair      E: Poor

S. NO	QUESTION	PERCENTAGE / STATUS				
1	Knowledge Did you learn?	A	B	C	D	E
1.1	Problem formulation and solving skills.	83%	11%	6%	0%	0%
1.2	Collecting and analyzing appropriate data.	61%	28%	6%	6%	0%
1.3	Ability to link theory to practice.	56%	39%	0%	6%	0%
1.4	Ability to design a system component or process	83%	11%	6%	0%	0%
1.5	IT knowledge	61%	28%	6%	6%	0%
2	Communications Skills					
2.1	Oral communication	72%	17%	11%	0%	0%
2.2	Report writing	78%	17%	0%	6%	0%
2.3	Presentation skills	67%	28%	6%	0%	0%
3	Interpersonal Skills.					
3.1	Ability to work in teams.	78%	17%	6%	0%	0%
3.2	Ability to work in arduous / challenging situation.	72%	22%	0%	6%	0%
3.3	Appreciation of ethical Values.	67%	28%	6%	0%	0%
4	Management / leadership Skills.					
4.1	Resource and Time management skills	78%	17%	6%	0%	0%
4.2	Judgment	61%	22%	11%	6%	0%
4.3	Discipline	72%	22%	6%	0%	0%

## Employer Survey

(To be filled by Employer- after the completion of each academic year)

Department: Mathematics

Year: 2016

A: Excellent

B: Very Good

C: Good

D: Fair

E: Poor

S. NO	QUESTION	PERCENTAGE / STATUS				
1	Knowledge	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
1.1	Math, Science, Humanities and professional discipline, (if applicable)	78%	17%	0%	6%	0%
1.2	Problem formulation and solving skills	72%	22%	0%	6%	0%
1.3	Collecting and analyzing appropriate data	56%	39%	0%	6%	0%
1.4	Ability to link theory to Practice	61%	22%	11%	6%	0%
1.5	Ability to design a system component or process	72%	22%	6%	0%	0%
1.6	Computer knowledge	78%	17%	0%	6%	0%
2	Communications Skills					
2.1	Oral communication	72%	22%	6%	0%	0%
2.2	Report writing	72%	17%	11%	0%	0%
2.3	Presentation skills	56%	39%	0%	6%	0%
3	Interpersonal Skills.					
3.1	Ability to work in teams	72%	22%	0%	6%	0%
3.2	Leadership	78%	17%	0%	6%	0%
3.3	Independent thinking	72%	22%	0%	6%	0%
3.4	Motivation	56%	39%	0%	6%	0%
3.5	Reliability	83%	11%	6%	0%	0%
3.6	Appreciation of ethical values	61%	28%	6%	6%	0%
4	Management / leadership Skills.					
4.1	Resource and Time management skills	72%	17%	11%	0%	0%
4.2	Judgment	72%	17%	11%	0%	0%
4.3	Discipline	56%	39%	0%	6%	0%



**Criterion 2:** The curriculum must be designed and organized to achieve the program's objectives and outcomes. Also course objectives must be in line with the program outcomes.

**Program:**

**BS Degree: (4 Years; 8 Semesters)**

**BS Part-I**

FIRST YEAR					
First Semester			Second Semester		
S. No	Course Title	Cr. Hr	S. No	Course Title	Cr. Hr
01.	Calculus-I	04	01.	Calculus-II	03
02.	Introduction to Pure Mathematics	03	02.	Software Packages	1+2
03.	English-I (Functional English)	03	03.	Statistics	03
04.	Islamic Studies/Ethics	02	04.	English-II (Communication Skills)	03
05.	Physics	03	05.	Pakistan Studies	02
06.	Introduction to Computers	03	06.	Biology	03
<b>TOTAL</b>		<b>18</b>	<b>TOTAL</b>		<b>17</b>

**BS Part-II**

SECOND YEAR					
First Semester			Second Semester		
S. No	Course Title	Cr. Hr	S. No	Course Title	Cr. Hr
01.	Algebra-I (Group Theory)	03	01.	Affine and Euclidean Geometry	03
02.	Calculus-III	04	02.	Liner Algebra	03
03.	Graph Theory	03	03.	Economics	03
04.	English-III (Technical Writing and Presentation Skills)	03	04.	Discrete Mathematics	03
05.	Computer Programming	2+1	05.	English	03
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>15</b>

**BS Part-III**

THIRD YEAR					
First Semester			Second Semester		
S. No	Course Title	Cr. Hr	S. No	Course Title	Cr. Hr
01.	Topology	03	01.	Classical Mechanics	03
02.	Differential Geometry	03	02.	Partial Differential equations	03
03.	Ordinary Differential Equations	03	03.	Complex Analysis	03
04.	Real Analysis-I	03	04.	Functional Analysis	03
05.	Algebra-II (Rings and Fields)	03	05.	Real Analysis-II	03
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>

**Semester-IV**

<b>FOURTH YEAR</b>					
<b>First Semester</b>			<b>Second Semester</b>		
<b>S. No</b>	<b>Course Title</b>	<b>Cr. Hr</b>	<b>S. No</b>	<b>Course Title</b>	<b>Cr. Hr</b>
01.	Numerical Analysis	03	01.	Probability Theory	03
02.	Number Theory	03	02.	Integral Equations	03
03.	Computational Fluid	03	03.	Numerical Solution of Partial Differential Equations	03
04.	Operation Research	03	04.	Business Mathematics	03
05.	Mathematical Methods	03	05.	Project/Viva-Voce	03
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>

**Total Credit Hours 127****M.Sc. Degree (2-Years 04 Semesters)****M.Sc. (Previous)**

<b>FIRST YEAR</b>					
<b>First Semester</b>			<b>Second Semester</b>		
<b>S. No</b>	<b>Course Title</b>	<b>Cr. Hr</b>	<b>S. No</b>	<b>Course Title</b>	<b>Cr. Hr</b>
01.	Topology	03	01.	Classical Mechanics	03
02.	Differential Geometry	03	02.	Partial Differential Equations	03
03.	Ordinary Differential Equations	03	03.	Complex Analysis	03
04.	Real Analysis-I	03	04.	Functional Analysis	03
05.	Algebra-II (Rings and Fields)	03	05.	Real Analysis-II	03
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>

**M.Sc. Final**

<b>SECOND FIRST YEAR</b>					
<b>First Semester</b>			<b>Second Semester</b>		
<b>S. No</b>	<b>Course Title</b>	<b>Cr. Hr</b>	<b>S. No</b>	<b>Course Title</b>	<b>Cr. Hr</b>
01.	Numerical Analysis	03	01.	Probability Theory	03
02.	Number Theory	03	02.	Integral Equations	03
03.	Computational Fluid Dinamentions	03	03.	Numerical Solution of Partial Differential Equations	03
04.	Operation Research	03	04.	Business Mathematics	03
05.	Mathematical Methods	03	05.	Project/Viva-Voce	03
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>

**Total Credit Hours 60**

**Standard: 2.1:** The curriculum must be consistent and support the program’s documented objectives.

**Table: 8 Courses versus program outcomes**

Courses/Group of Courses	Objectives		
	1	2	3
Research methodology and report writing	The knowledge to develop small projects	Completion of project is excellent outcomes	
Fluid dynamics	Students are motivated to work in daily life and how it measures		
Current trends to solve problems	Students are given the latest knowledge of the subject	Motivated for the studies in new fields of studies	

Program Learning Outcomes	Program Objectives				
	Skills in critical thinking, Program solving and communication	Initiate and manage change	Understand Professional ethics and responsibility	Employ I. S. Technology	Enable organization to make optimal decision
Students can be able to work individually as well as in team	x	x	x		x
Research oriented graduates	x		x		x
Self-determent and reliance graduates		x	x		
The graduates produce to render their services mathematical modeling and conservation	x	x	x		x
Capable to manage the renewable resources	x	x	x		x
Use up to date tolls			x		
Lifelong learning	x				
Professional ethics and responsibility	x		x		x

**Standard: 2.2.** Theoretical background, problems analysis and solution design must be stressed within the program’s core material.

<b>Table: 8.</b> Shows Theoretical background, problem analysis and solution of the courses.	
<b>Elements</b>	<b>Courses</b>
Theoretical background	Subject Codes
Problems analysis	
Solution design	

**Standard: 2.3:** The curriculum must satisfy the core requirements for the program, as specified by the respective accreditation body. Examples of such requirements are given in Table A.1, Appendix A.

**Standard 2-4:** The curriculum must satisfy the major requirements for the program as specified by HEC, the respective accreditation body / councils. Examples of such requirements are given in Table A.1, Appendix A.

**Standard 2-5:** The curriculum must satisfy general education, arts, and professional and other discipline requirements for the program, as specified by the respective accreditation body / council. Examples of such requirements are given in Table A.1, Appendix A.

**Minimum Requirements for Each Program**  
(Program Semester Credit Hours)

<b>Program</b>	<b>Math &amp; Basic Science</b>	<b>Engineering Topics</b>	<b>General Education</b>	<b>Others</b>
B.S – 4 Years	120	Applied Maths	16	-----

**Standard 2-6:** Information technology component of the curriculum must be integrated throughout the program.

**Has the IT program been included in the course:**      Yes                       No

**Standard 2-7:** Oral and written communication skills of the student must be developed and applied in the program.

Is there any oral/written communication skills have been included in the program: **Yes**                       No

**Criterion 3: Laboratories and Computing Facilities:**

**Standards: 3-1.** Laboratories and computing facilities must be adequately available and accessible to faculty members and students to support teaching and research activities.

**Criterion 4: Student Support and Advising:**

Students must have adequate support to complete the program in a timely manner and must have ample opportunity to interact with their instructors and receive timely advice about program requirements and career alternatives.

**Standard: 4:1.** Courses must be offered with sufficient frequency and number for students to complete the program in timely manner.

**Table: 9.** Shows classes/week of Major Courses offered in 4 –Year program.

<b>Major Courses offered: BS. 4 Year Program, M.Sc. (Prev.), &amp; M.Phil/Ph.D.@ the Ratio of 4:3</b>		
<b>Course offered/Year</b>	<b>Classes/week /Cr Hs</b>	<b>Practical/week/Cr Hs</b>
BS.I.1 <sup>st</sup> Semester	17	01
BS.I.2 <sup>nd</sup> Semester	16	02
BS. II. 1 <sup>st</sup> Semester	13	02
BS. II. 2 <sup>nd</sup> Semester	15	--
BS. III. / M.Sc. (Previous) 1 <sup>st</sup> Semester	15	--
BS. III. / M.Sc. (Previous) 2 <sup>nd</sup> Semester	15	--
BS. IV. / M.Sc. (Final) 1 <sup>st</sup> Semester	15	--
BS. IV/ M.Sc. (Final) 2 <sup>nd</sup> Semester	15	--

☞ The above mentioned classes are strictly followed throughout the academic year. The core courses, optional can be easily completed under the favorable environment.

☞ The Compulsory courses managed by the Mathematics department, however, other compulsory disciplines and optional subjects are managed by the related departments. The details of the compulsory subjects other than the offered by the Mathematics department are following

<b>4-Year BS: Program</b>					
<b>Subject:</b>	<b>Managed by:</b>	<b>Theory: Cr Hs/ Class.</b>		<b>Practical: Cr Hs/ Class.</b>	
English	Institute of English	BS.I	1 <sup>st</sup> Semester	BS.I	1 <sup>st</sup> Semester
			4		--
		BS.II	2 <sup>nd</sup> Semester	BS.II	2 <sup>nd</sup> Semester
			3		--
BS.II	1 <sup>st</sup> Semester	BS.II	1 <sup>st</sup> Semester		
	4		--		

			2 <sup>nd</sup> Semester		2 <sup>nd</sup> Semester
			3		
Principal of accounting	Department of Public Administration	BS.I	1 <sup>st</sup> Semester	BS.I	1 <sup>st</sup> Semester
			4		3
			2 <sup>nd</sup> Semester		2 <sup>nd</sup> Semester
		BS.II	3	3	
			1 <sup>st</sup> Semester	1 <sup>st</sup> Semester	
			4	3	
BS.II	2 <sup>nd</sup> Semester	2 <sup>nd</sup> Semester			
	2	3			
Computer	Deptt: of Computer Science	BS.I	1 <sup>st</sup> Semester	BS.I	1 <sup>st</sup> Semester
			4		3
			2 <sup>nd</sup> Semester		2 <sup>nd</sup> Semester
		BS.II	3	3	
			1 <sup>st</sup> Semester	1 <sup>st</sup> Semester	
			3	3	
BS.II	2 <sup>nd</sup> Semester	2 <sup>nd</sup> Semester			
	3	3			
Mathematics (Major)	Department of Mathematics	BS.I	1 <sup>st</sup> Semester	BS.I	1 <sup>st</sup> Semester
			3		--
			2 <sup>nd</sup> Semester		2 <sup>nd</sup> Semester
		BS.II	3	--	
			1 <sup>st</sup> Semester	1 <sup>st</sup> Semester	
			3	--	
BS.II	2 <sup>nd</sup> Semester	2 <sup>nd</sup> Semester			
	4	--			
Physics	Department of Physics and Electronics	BS.I	1 <sup>st</sup> Semester	BS.I	1 <sup>st</sup> Semester
			--		--
			2 <sup>nd</sup> Semester		2 <sup>nd</sup> Semester
		BS.II	--	--	
			1 <sup>st</sup> Semester	1 <sup>st</sup> Semester	
			4	--	
BS.II	2 <sup>nd</sup> Semester	2 <sup>nd</sup> Semester			
	--	--			

**Standard: 4:2.** Courses in the major are must be structured to ensure effective interaction between students and faculty and teaching and teaching assistance?

(1) **Well structured** ✓

**Standard: 4:3.** Guidance on how to complete the program must be available to all students and access to academic advising must be available to make course decisions and career choices.

**Are students informed about program requirements?**

(1) No

(2) **To some extent** ✓

(3) Fully

**Does there student advising system exist and how effective it is?**

(1) No ✓ (2) To some extent (3) Completely

**Have students access to professional counseling?**

(1) No ✓ (2) To some extent (3) Full

**Do the students have interacted with practitioners and to have membership in technical & professional societies?**

(1) No (2) To some extent ✓ (3) Full

**Criterion 5:** The processes by which major functions are delivered must be in place, controlled, periodically reviewed, evaluated and continuously improved. To meet this criterion a set of standards must be satisfied.

**Standard 5:1.** The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented.

**Program/credit transfer:** N.A.

**Transfer of a student from outside the university:** N.A.

**Admission Criteria:** The admission policy is constituted by the “Admission Committee” consists of Deans, and senior faculty members of the university. The departments have no any role. The departments follow policy made by them which is also mentioned in “**Prospectus of the university**”. However, the admission criteria are evaluated but not regularly.

**Standard 5:2.** The process by which students are registered in the program and monitoring of students progress to ensure timely completion of the program must be documented this process must be periodically evaluated to ensure that it is meeting its objectives:

**How frequently admission criteria are evaluated?**

(1) None (2) Not regularly ✓ (3) Every Year

**Are the evaluated results used to improve the results?**

(1) No (2) To some extent (3) Yes ✓

**Is there any policy regarding program /credit transfer?**

(1) No (2) To some extent (3) Well defined ✓

**Is there any mechanism of student’s registration in the program?**

(1) No (2) To some extent (3) Well defined ✓

**How frequently process of registration is monitored?**

(1) None (2) within 1 year (3) After 1 year (4) **When needed** ✓

**Are the evaluation results used to improve the results?**

(1) No (2) To some extent (3) **Yes** ✓

**Standard 5:3.** The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institution mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.

- Shah Abdul Latif University strictly follows the policy of “Equal Opportunity” regardless religion, race, faith, cast & creed, gender regarding recruiting faculty including admissions, educational programs and employment.
- The University applies standard operating methodology for evaluation, such as Annual Confidential Report (ACR), required research papers, teaching experience and all other conditions as directed by the HEC. Thus
- This process ensures the objectives of the program mission.

**Standard 5:4:** The process and procedures used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.

- It is strictly observed that the time table is followed by the faculty. However, **Weaknesses & Strengths** have been observed through the student feedback for the “Course Evaluation”. The department needs to improve in various aspects.

**Standard 5:5:** The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

The process for the degrees of BS-4 year has been well designed by the Board of Advanced Studies & Research (BASR) followed by the HEC directions. Details are as under.

Degree	GPA/Class/GRE	Interview	
BS-4 Year	Pre-Admission Test (NTS) style	X	

This process must be periodically evaluated to ensure that it is meeting its objectives. **(Yes)** ✓

The department ensures that the graduates actively participate in laboratory work, punctual in the classes, maintaining attendance over **75%**.



**Criterion: 6. Faculty.** Faculty members must be current and active in their discipline and have the necessary technical depth and breadth to support the program. There must be enough faculty members to provide continuity and stability, to cover the curriculum adequately and effectively. To meet this criterion the following standards must be satisfied.

**Standard: 6: 1.** There must be enough full time faculties who are committed to the program to provide adequate coverage of the program areas / courses with continuity and stability. The interest of all faculty members must be sufficient to teach all courses, plan, modify and update courses. The majority must hold a Ph.D. degree in the discipline.

<b>Table: 10. Program areas and number of faculty in each area.</b>			
<b>Program Areas of specialization</b>	<b>Courses in the area.</b>	<b>Number of faculty members in each area</b>	<b>Number of faculty with Ph.D. degree</b>
<b>Total</b>			

\* One visiting professor

### **Faculty Resume:**

**Note:** Faculty resumes are well documented as per policy/criteria of HEC. Names of the faculty members and field of specialization are as under.

<b>Name:</b>	<b>Position</b>	<b>Qualification</b>	<b>Field of specialization</b>
Dr. Ali Dino Jumani	Professor/Chairman	Ph.D	Graph theory, Discrete Mathematics
Dr. Ghulam Qadir Memon	Assistant professor	Ph.D	Differential Equation
Mr. Suhraab Ali Hajano	Assistant professor	M.Phil	Number Theory
Mr. Inayat Soomro	Assistant professor (on study leave)	MS	Applied Mathematics
Mr. Hisam-uddin Shaikh	Lecturer	M.Sc. & (Ph.D.)	Applied Mathematics
Mr. Syed Baqar Shah	Lecturer	M.Sc. & (Ph.D.)	Pure Mathematics
Mr. Aijaz Ali	Lecturer	M.Sc.	Pure Mathematics
Mr. Raza Pahore	Lecturer (on Study Leave)	MS	Applied Mathematics
Mr. Suhail Ahmed Memon	Lecturer (on Study Leave)	MS	Applied Mathematics
Mr. Israr Memon	Lecturer (on Study Leave)	MS	Applied Mathematics
Mr. Abdul Hameed Junejo	Teaching Assistant	BS & (MS)	Mathematics
Mr. Abdul Rehman Soomro	Teaching Assistant	BS & (MS)	Mathematics
Mr. Abdul Naeem Kalhoro	Teaching Assistant	BS & (MS)	Mathematics

**Standard 6:2.** All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place.

- a. Participation in seminars, conferences at National/International levels.
- b. Research proposals for funding and linkage with other Institutions.
- c. Taking classes, involved in research and reading new books in the relevant field.
- d. Publications in HEC recognized journals or journals having impact factors.
- e. Organize workshops, seminars and conferences.
- f. The department arranges lectures from eminent scholars on various topics of the subject for its students and faculty at National level.
- g. Prepare their resume in line with HEC guidelines.

### **Faculty Development Program:**

**Standard 6:3.** All faculty members should be motivated and have job satisfaction to excel in their profession.

The following criteria are under practice in order to satisfy the faculty members in their profession.

- a. Fair, timely selection, appointment / promotion as per HEC policy.
- b. Providing Tenure Track salary package
- c. Excellent working environment.

### **1) General Comments:**

- a) Teachers have expressed their views that seminars, symposiums and conferences, in general, have motivated to impart the new techniques and methods of teaching.

Suggest programs / factors that could improve your motivation and job satisfaction?

- b) More faculty members may be appointed on the regular basis or contract to cover the workload as per HEC policy.

## Teacher Evaluation Form

(To be filled by the student)

Department: Mathematics

Year: 2016

A: Strongly Agree B: Agree C: Uncertain D: Disagree E: Strongly Disagree

<b>Teacher:</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
1	The teacher is prepared for each class	83%	17%	0%	0%	0%
2	The teacher demonstrates knowledge of the subject properly	72%	22%	6%	0%	0%
3	The teacher has completed the whole course	67%	28%	6%	0%	0%
4	The teacher provides additional material apart from the text book	78%	11%	6%	6%	0%
5	The teacher gives citations regarding current situations with reference to Pakistani context.	67%	28%	6%	0%	0%
6	The teacher communicates the subject matter effectively	61%	28%	11%	0%	0%
7	The teacher shows respect towards students and encourages class participation	72%	17%	6%	6%	0%
8	The teacher maintains an environment that is conducive to learning	67%	22%	6%	6%	0%
9	The teacher is punctual & regular.	56%	33%	11%	0%	0%
10	The teacher is fair in examination	83%	11%	6%	0%	0%
11	The teacher returns the checked scripts etc. with his suggestions to the students.	44%	39%	6%	6%	6%
12	The teacher was available for consultations after class hours.	56%	22%	17%	6%	0%
<b>Course:</b>						
13	The matter presented in the course has increased the knowledge of the subject.	67%	22%	6%	6%	0%
14	The syllabus clearly states course objectives requirements, procedures and grading criteria	67%	28%	6%	0%	0%
15	The subject integrates theoretical course concepts with real world.	61%	33%	6%	0%	0%
16	The assignments and exams taken by the teacher were according to course and syllabi.	78%	17%	6%	0%	0%

## Survey of Graduating Students

(To be filled out by graduating students in last semester / year before the award of degree)

Department: Mathematics

Year: 2016

A: Very satisfied   B: Satisfied   C: Uncertain   D: Dissatisfied   E: Very dissatisfied

S. No.	Question	Percentage/Status				
		A	B	C	D	E
1	The work in the program is too heavy and induces a lot of pressure.	64%	27%	9%	0%	0%
2	The program is effective in enhancing team-working abilities.	55%	45%	0%	0%	0%
3	The program is effective in developing analytical and problem solving skills.	64%	27%	9%	0%	0%
4	The program is effective in developing written communication skills.	64%	36%	0%	0%	0%
5	The program is effective in developing planning abilities.	55%	36%	9%	0%	0%
6	The objectives of the program have been fully achieved	45%	45%	9%	0%	0%
7	Faculty was able to meet the program objectives	45%	45%	0%	9%	0%
8	Environment was conducive for learning	45%	45%	0%	9%	0%
9	Whether the Infrastructure of the department was good.	64%	27%	9%	0%	0%
10	Whether the program was comprised of Co-curricular and extra-curricular activities	55%	36%	9%	0%	0%
11	Whether scholarships/ grants were available to students in case of hardship	45%	36%	18%	0%	0%

**Answer question, if applicable.**

The internship experience is effective in enhancing.

S. No.	Question	Percentage/Status				
		A	B	C	D	E
A.	Ability to work in teams.	55%	36%	0%	9%	0%
B.	Independent thinking.	55%	36%	9%	0%	0%
C.	Appreciation of ethical Values.	64%	36%	0%	0%	0%
D.	Professional development.	73%	18%	9%	0%	0%
E.	Time management skills.	55%	36%	9%	0%	0%
F.	Judgment.	64%	27%	9%	0%	0%
G.	Discipline.	73%	18%	9%	0%	0%
H.	The link between theory and practice.	55%	27%	18%	0%	0%

## Student Course Evaluation Questionnaire

(To be filled by each student at the time of Course Completion)

Department: Mathematics

Year: 2016

### CORE QUESTIONS

<b>Course Content and Organization</b>		<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
1	The course objectives were clear.	55%	36%	9%	0%	0%
2	The Course workload was manageable.	64%	36%	0%	0%	0%
3	The Course was well organized (e.g. timely access to materials, notification of changes, etc.)	55%	36%	9%	0%	0%
<b>Student Contribution</b>		<b>&gt;81%</b>	<b>&gt;81%</b>	<b>80%</b>	<b>60%</b>	<b>40%</b>
4	Approximate level of your own attendance during the whole Course.	36%	45%	18%	0%	0%
5	I participated actively in the Course.	64%	36%	0%	0%	0%
6	I think I have made progress in this Course.	64%	27%	9%	0%	0%
<b>Learning Environment and Teaching Methods</b>		<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
7	I think the Course was well structured to achieve the learning outcomes.	73%	27%	9%	0%	0%
8	The learning and teaching methods encouraged participation.	82%	18%	0%	0%	0%
9	The overall environment in the class was academic & friendly.	82%	9%	9%	0%	0%
10	Classrooms environment were satisfactory.	55%	36%	9%	0%	0%
<b>Learning Resources</b>		<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
11	Learn materials provided by teacher were relevant and useful.	64%	27%	0%	9%	0%
12	Recommended reading Books etc. were relevant and appropriate	64%	27%	0%	0%	9%
13	The provision of learning resources in the library was adequate and appropriate.	55%	36%	9%	0%	0%
14	The provision of learning resources on the Web was adequate and appropriate ( if relevant)	27%	45%	9%	18%	0%
<b>Quality of Delivery</b>		<b>Strongly Agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
15	The Course stimulated my interest and thought on the subject area Teaching techniques of the teacher were interesting and conducive.	36%	55%	9%	0%	0%
16	The pace of the Course was appropriate	64%	18%	18%	0%	0%
17	Ideas and concepts were presented by the teacher were clear.	64%	27%	9%	0%	0%

Assessment		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
18	The method of assessment were reasonable.	45%	45%	0%	0%	9%
19	Feedback on assessment was timely.	36%	55%	9%	0%	0%
20	Feedback on assessment was helpful.	36%	55%	9%	0%	0%
<b>Additional Core Questions</b>		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
<b>Teaching Assistant Evaluation</b>						
21	I understood the lectures.	73%	18%	0%	9%	0%
22	The material was well organized and presented.	64%	27%	0%	9%	0%
23	The teacher was responsive to student needs and problems.	55%	27%	9%	0%	9%
24	Had the teacher been regular throughout the course?	64%	27%	0%	9%	0%
<b>Practical</b>		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
25	The material in the practicals was useful.	55%	36%	0%	9%	0%
26	The demonstrators dealt effectively with my problems.	55%	27%	0%	0%	18%

**Criterion: 7. Institutional Facilities.** Institutional facilities, including library, clean rooms and offices must be adequate to support the objectives of the program. To satisfy this criterion, the following standards must be met.

**Standard 7:1.** The Institution must have the infrastructure to support new trends in learning such as E-learning.

**Standard 7:2.** The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel.

**Standard 7:3.** Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibility.

**Details of facilities available in the department:**

Item	Position	Remarks
Seminar Library & Books/Journals	Good Number of Books Available	Needs more books including research journals
Computer Labs	One	At least 5 computers needed for research scholar
Class Rooms	Only two Class Rooms are Available	At least two class rooms needed
Girls Common Room	No	Needed
Faculty Offices	08	At least 3 offices needed
Internet & Digital Library	No	Needed
Computers	03	At least 5 computers needed for BS Students and M.Phil Scholar Students

**Criterion: 8. Institutional Support.** The institution's support and the financial resources for the program must be sufficient to provide an environment in which the program can achieve its objectives and retain its strength.

**Standard 8:1.** There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teacher and scholars.



**Standard 8:2.** There must be an adequate number of high quality graduate students, research assistants and Ph.D. students.

**Standard 8-3:** Financial resources must be provided to acquire and maintain library holding, laboratories and computing facilities.

- The University provides resources to maintain library& laboratories.

**Does the department provide opportunities to the faculty members to attend international / national conferences?**

(1) No                      (2) To some extent                      (3) **Full** ✓

<b>PT Members</b>	Date-02-5-2022
(1) Mr. Aijaz Ali Shiakh	 <b>Signature</b>
(2) Mr. Abdul Hameed Junejo	 <b>Signature</b>