

BARANI INSTITUTE OF MANAGEMENT SCIENCES

**AFFILIATED WITH PIR MEHR ALI SHAH
ARID AGRICULTURE UNIVERSITY
RAWALPINDI**



SELF ASSESSMENT REPORT (2016-18)

Department of Mathematics

M.Sc Mathematics

Program Team:

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INTRODUCTION

The Department of Mathematics is one of active departments in Barani Institute of Management Sciences (BIMS) Affiliated with Pir Mehr Ali Shah Arid Agriculture University Rawalpindi. The M.Sc degree program in Mathematics (Morning) was initiated in 2014, after the approval of Scheme of studies by Academic Council of the PMAS Arid Agriculture University Rawalpindi. The first batch consisted of 23 students was enrolled in Fall 2014 and recently, the said batch has been passed out in Spring 2016.

The philosophy and objectives of this program were centered on the aims to provide an advanced understanding of the core principles and topics of mathematics and their experimental basis, and to enable students to acquire a specialized knowledge and understanding of selected aspects by means of a stem/branch lecture series and a research project. It provides students with an advanced integrated knowledge, strength, self-reliance, economic emancipation, and the broadening of opportunities through well-coordinated education of citizens. Currently 20 students are enrolled in this discipline. The core research areas of M.Sc Mathematics are based on Analysis, Algebra, Geometry, Differential equations, Mechanics, Statistics, Operations research etc.

This Self-Assessment Report (SAR) is prepared by following the Higher Education Commissions (HEC) framework based on eight criteria. The first criterion outlines the program mission and objectives. Criterion 2 is relevant with the curriculum development. The computer labs and other relevant information are prescribed in criterion 3. The fourth criterion is pertinent to the information about students' support and advising. The remaining four criteria provide information about process control, faculty characteristics and institutional support.

CRITERION-1

PROGRAMME MISSION, OBJECTIVES AND OUTCOMES

Criteria 1

PROGRAM MISSION OBJECTIVES AND OUTCOMES

Standard 1-1:

MSc Degree Program

Program Mission Statement of MSc

Our mission of MSc Degree Program is to equip students with professional careers in all disciplines which make use of Mathematical sciences and enable them to pursue more advanced studies at research level in Mathematics and related fields.

Objectives

Consequently, the program objectives are generally aimed at:

1. To master the students with subject material in discipline opt by them either pure or applied mathematics.
2. To develop critical and logical thinking in students in order that students may understand theoretical proves.
3. To master them in use of mathematical language and symbols to provide better understanding of Mathematics in all fields.
4. To develop a client-based and practical perspective concerning applied Mathematics with a view towards modeling and solving real-world problems.
5. To groom them as a researcher who can take better decisions on basis of insight to the mathematical knowledge of the subject.
6. Become sufficiently proficient in obtaining core academic material to permit further study at research level in different disciplines of Mathematics, and related fields.

Main Elements of the Strategic Plan to Achieve Program Mission and Objectives:

1. The program is designed to prepare students for successful careers, either in mathematics or a related discipline. The degree is intended to familiarize students with a wide range of areas within the field of mathematics. A variety of practical based courses are provided.
2. Participation and presentation in national or international conferences are necessary for the enhancement of student's professional training and new developments.
3. As per the modern and global trends, inclusions of new courses are required.
4. Highly qualified and talented faculty is required.

PROGRAM OBJECTIVES ASSESSMENT

Table 1: Program Objective Assessment

Sr.#	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	Conceive, develop and execute a study plan that has relevance to current issues in Mathematics	By evaluating the assignments and assessment of the student.	During and at the end of each semester.	Practical based courses should be offered along with the student's opportunities in the field. Teachers should have interaction to local universities and foreign institutes	Practical based courses are included and also coordinated with other universities.
2	Gather information from various study tools and resources specially the information technology.	Through teacher students' discussions.	During and at the end of each semester.	Seminars and special problems courses should be offered in the third and fourth semester.	The teachers have given research-based topics to students and their communication skills have been improved through presentation.
3	Have in depth knowledge of Mathematics and its applications	Through assignments and presentations	During and at the end of each semester.	Courses should be improved and modified	Scheme of study is designed according to HEC.

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.

After completion of the MSc Degree Program in Mathematics, the students shall be able to:

- Compete successfully for internship and employment positions in government, industry, and non-profit organizations.
- Develop a tendency toward applied areas such as physical sciences, financial services, and social sciences and have the knowledge, experience, and motivation to bring the mathematical tools to cope up with real-world problems.
- Collaborate competently with non-expert users of Mathematics and related disciplines.
- Foster an intellectual curiosity and flexibility to grow with developing technology and new methods in current research areas related to Mathematics.
- Perform better in aptitude test of MPhil/PhD in different renowned institutions.

Table 2: Program Outcomes to Their Relationship with Objectives

		Objectives					
		1	2	3	4	5	6
Outcomes	1	+++	+++	+++	++	++	++
	2	+++	++	++	++	++	+++
	3	++	+++	+++	++	++	++
	4	+++	++	+++	++	++	++
	5	++	++	+++	++	++	+++
	6	+++	+++	++	+++	+++	++

- + = Moderately Satisfactory
- ++ = Satisfactory
- +++ = Highly Satisfactory

Standard 1-3.: The results of program's assessment and the extent to which they are used improve the program must be documented.

a) Strengths and Weaknesses of the Program

i) Strengths:

- Diversity in different fields
- Enhance reasoning and critical thinking
- Students perform better in aptitude tests at higher level

ii) Weaknesses

- No significant weakness found

Future Development Plans

There is one-degree program in pipeline which is

- Mathematics (BS Program)

Further, management of Mathematics department has constituted a committee to revise and update the existing curriculum as per need of current trends in Mathematics and to further raise the standard of teaching of Mathematics.

The Results of program's assessment

Teacher evaluation

Barani Institute of Management Sciences (BIMS) offers Masters in Mathematics. The department consists of 04 full time faculty members that teach almost 75% of the course load. All of the faculty holds relevant academic degrees and are qualified in teaching at this level. The courses are carefully formulated and appropriate teaching methodology is adopted. Majority of the full-time faculty holds higher degrees and rest are in the process. Furthermore, the process of improving the level of education for full time faculty is being emphasized and the faculty is encouraged to acquire higher qualifications.

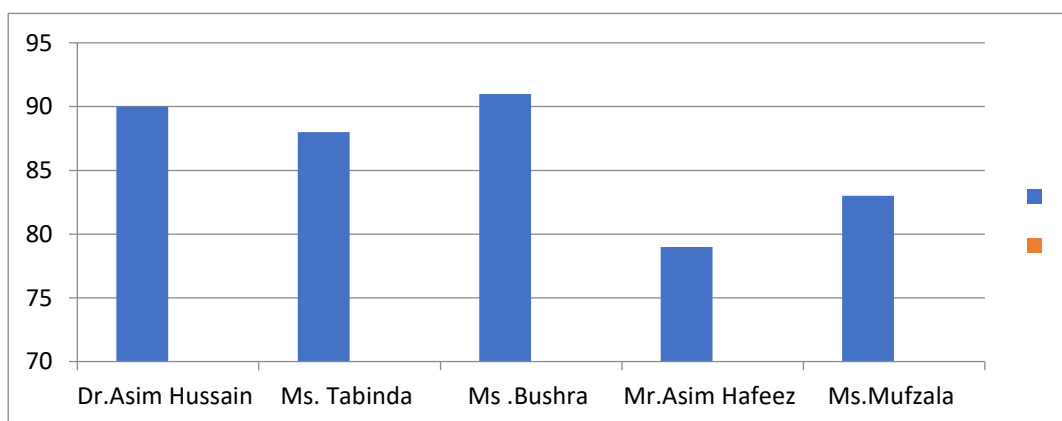
All of these teachers were evaluated by the students at the end of the semesters in accordance with faculty evaluation performa. The results are graphically presented on the following pages. Detail of individual performance of each teacher is illustrated with the help of a bar chart. Following is the list of questions asked in teacher's evaluation Performa. The bar chart describes the teacher's evaluation for each question.

S No.	Questions
Q1	Communication of course break down with students?
Q2	Course coverage according to break down?
Q3	Number of assignments and quizzes taken?
Q4	Timely of assignments and quizzes?
Q5	Instructors effort to maintain discipline?
Q6	Subject matter presented in the course has increased knowledge of subjects?
Q7	How well issues resolved by the teachers?
Q8	Instructor preparedness for each class?
Q9	Additional material apart from text?
Q10	Enviroment for conductive learning?

Teacher Evaluation

This evaluation deal with the student's perspective of the teacher who taught courses of Maths. The summarized results of the teachers who are teaching courses in the Maths degree program are given in the graph below. Dr.Asim Hussain has scored 90%, Ms. Tabinda has scored 88%. Ms .Bushra has scored 91%, Mr.Asim Hafeez has scored 79%, Ms.Mufzala has scored 83%, The comparison of their score is shown below.

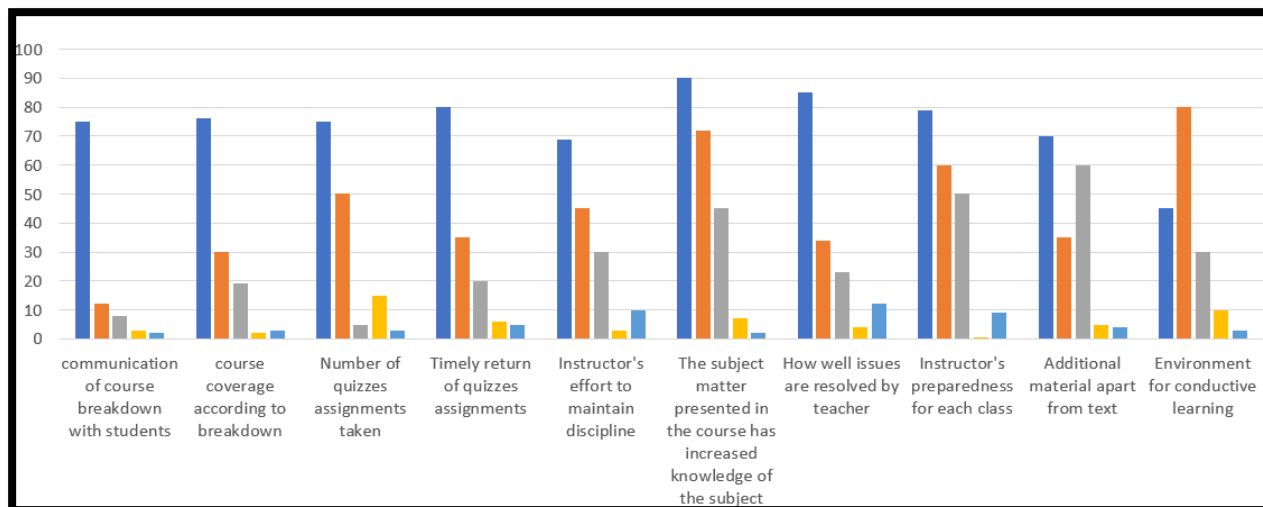
Figure 1: Teacher Evaluation Graph



A detailed evaluation of teachers is given below.

Dr.Asim Hussain

The graph for “The communication of course breakdown with students and coverage of course according to breakdown”, shows that 75% are strongly agreed, 12% are agreed, 8% are uncertain, 2% disagreed and 1% are strongly disagreed. The graph for “Number of quizzes assignments taken with correspondence to course breakdown”, shows that 75% are strongly agreed, 50% are agreed, 5% are uncertain, 12% disagreed and 2% are strongly disagreed. The graph for “The Instructor’s effort to maintain discipline.”, shows that 69% are strongly agreed, 43% are agreed, 30% are uncertain, 2% disagreed and 10% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 90% are strongly agreed, 70% are agreed, 44% are uncertain, 8% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

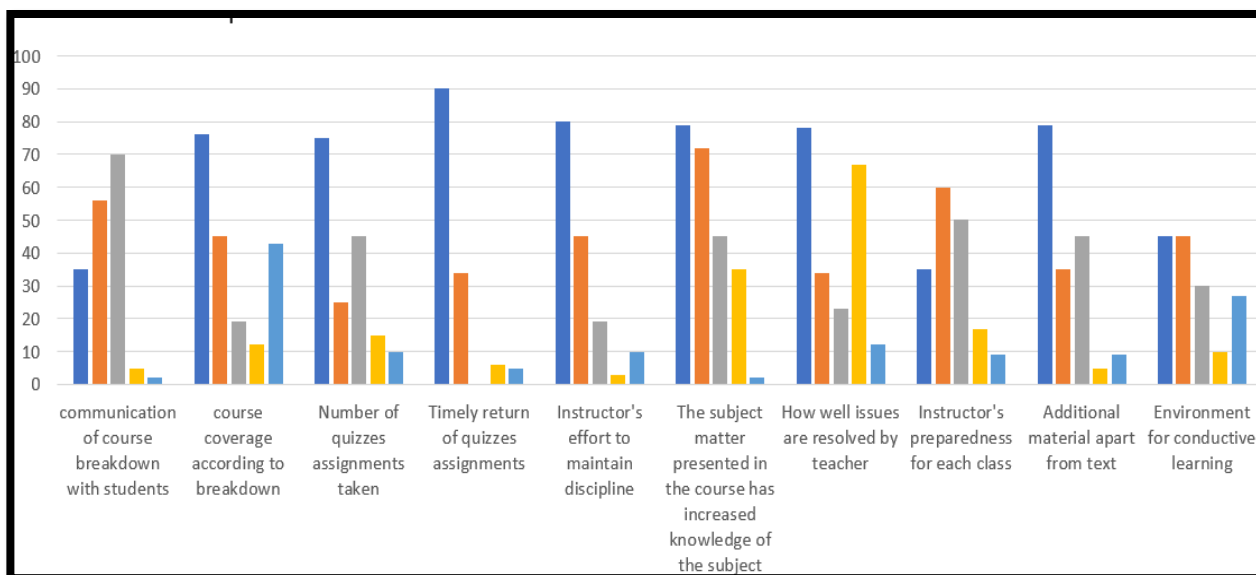
- Good grip at course
- Punctual
- Fair in examination
- Good Teaching method

Weakness:

- No significance weakness was found

Ms. Tabinda Naz

The graph for “The instructor is prepared for each class”, shows that 35% are strongly agreed, 60% are agreed, 50% are uncertain, 17% disagreed and 9% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 79% are strongly agreed, 35% are agreed, 43% are uncertain, 4% disagreed and 5% are strongly disagreed. The graph for “The instructor timely quizzes and assignments.”, shows that 90% are strongly agreed, 32% are agreed, 0% are uncertain, 3% disagreed and 1% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 80% are strongly agreed, 71% are agreed, 44% are uncertain, 35% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

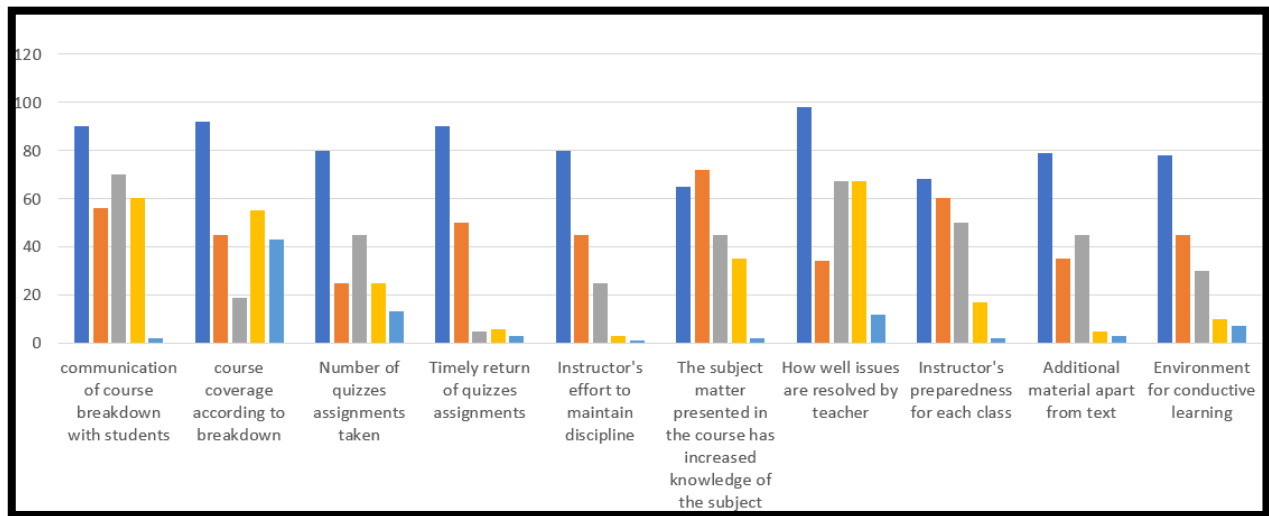
- Well prepared

Weakness:

- No significant weakness was found.

Ms .Bushra Bibi

The graph for “Timely return quizzes and assignments” shows that 85% are strongly agreed, 44% are agreed, 4% are uncertain, 5% disagreed and 1% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 79% are strongly agreed, 30% are agreed, 42% are uncertain, 5% disagreed and 1% are strongly disagreed. The graph for “The instructor maintains an environment that is conducive to learning.” shows that 79% are strongly agreed, 42% are agreed, 23% are uncertain, 5% disagreed and 2% are strongly disagreed. The graph for “The instructor is prepared for each class”, shows that 64% are strongly agreed, 60% are agreed, 50% are uncertain, 15% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

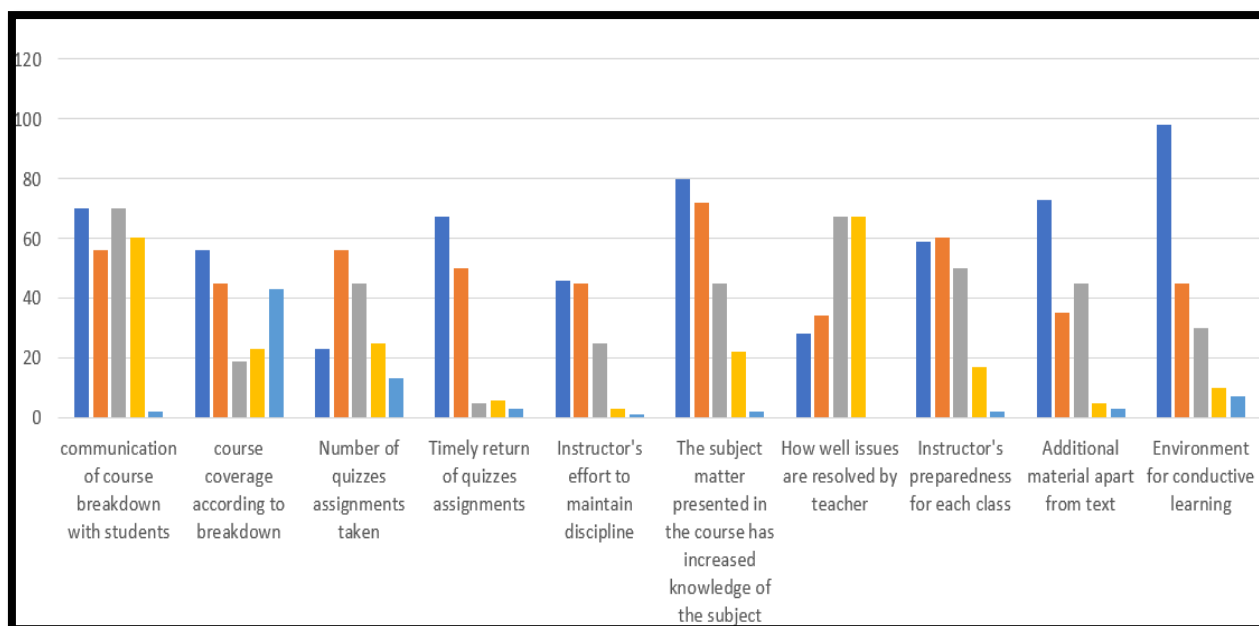
- Handles queries very well
- Understands students' problems
- Makes time for students

Weakness:

- No significant weakness was found.

Mr.Asim Hafeez

The graph for “The communication of course breakdown with students and coverage of course according to breakdown”, shows that 69% are strongly agreed, 55% are agreed, 67% are uncertain, 60% disagreed and 1% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 76% are strongly agreed, 33% are agreed, 43% are uncertain, 4% disagreed and 1% are strongly disagreed. The graph for “The instructor maintains an environment that is conducive to learning.”, shows that 98% are strongly agreed, 42% are agreed, 25% are uncertain, 9% disagreed and 5% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 80% are strongly agreed, 77% are agreed, 41% are uncertain, 21% disagreed and 1% are strongly disagreed. “The instructor is prepared for each class”, shows that 59% are strongly agreed, 60% are agreed, 45% are uncertain, 18% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

- Course intend delivered well
- Instructor demonstrate the knowledge of subject very well
- Instructor provides additional material apart from the text
- Fair marking
- Kind teacher

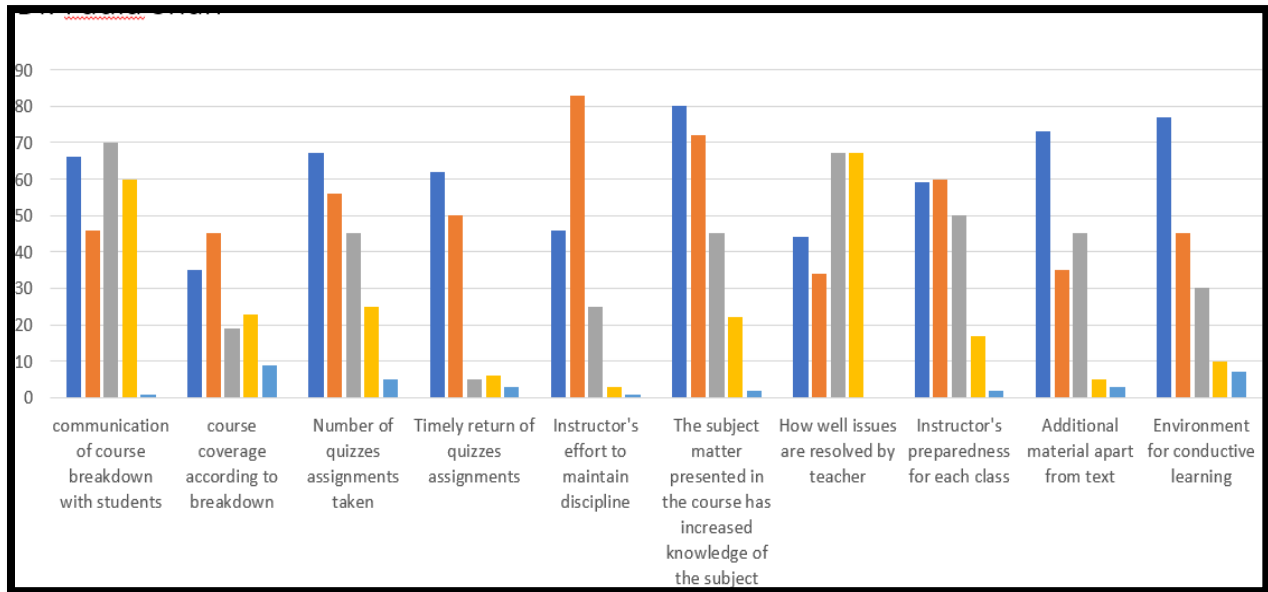
Weakness:

- No significant weakness was found.

Ms.Mufzalla Rahim

The graph for “The instructor maintains an environment that is conducive to learning.” shows that 78% are strongly agreed, 45% are agreed, 30% are uncertain, 10% disagreed and 5% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 71% are strongly agreed, 32% are agreed, 42% are uncertain, 4% disagreed and 1% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” , shows that 80% are strongly agreed, 70% are agreed, 42% are uncertain, 21% disagreed and 1% are strongly disagreed. The graph for “Timely return quizzes and assignments” shows that 61% are strongly agreed, 50% are agreed, 4% are uncertain, 5% disagreed and 1% are strongly disagreed. The graph for “The instructor is

prepared for each class”, shows that 59% are strongly agreed, 60% are agreed, 50% are uncertain, 16% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

- Well prepared
- Punctual
- Instructor demonstrate the knowledge of subject very well
- Instructor provides additional material apart from the text
- Effective lab tasks

Weakness:

- No significant weakness was found.

Student Course Evaluation

The results of course evaluations of MATHS degree program are also summarized. The teacher who taught **MATH-700** has scored 69%, the teacher for course **MATH-702** has scored 70%, the teacher for **MATH-703** has scored 80%, the teacher for **MATH-705** has scored 77%, the teacher for **MATH-709** has scored 73%, the teacher for **MATH-7011** has scored 88%, the teacher for **MATH-712** has scored 82%, the teacher for **MATH-713** has scored 90%, the teacher for **MATH-714** has scored 75%, the teacher who taught **MATH-715** has scored 74%, the teacher for course **MATH-716** has scored 83%, the teacher for **MATH-717** has scored 63%, the teacher for **MATH-718** has scored 66%, the teacher for **MATH-719** has scored 71%, the teacher for **MATH-720** has scored 91%, the teacher for **MATH-721** has scored 65%, the teacher for **MATH-722** has scored 68%, the teacher for **MATH-723** has scored 65%, the teacher for **STAT-700** has scored 70%, the teacher for **STAT-701** has scored 81%, the teacher for **STAT-712** has scored 85%.

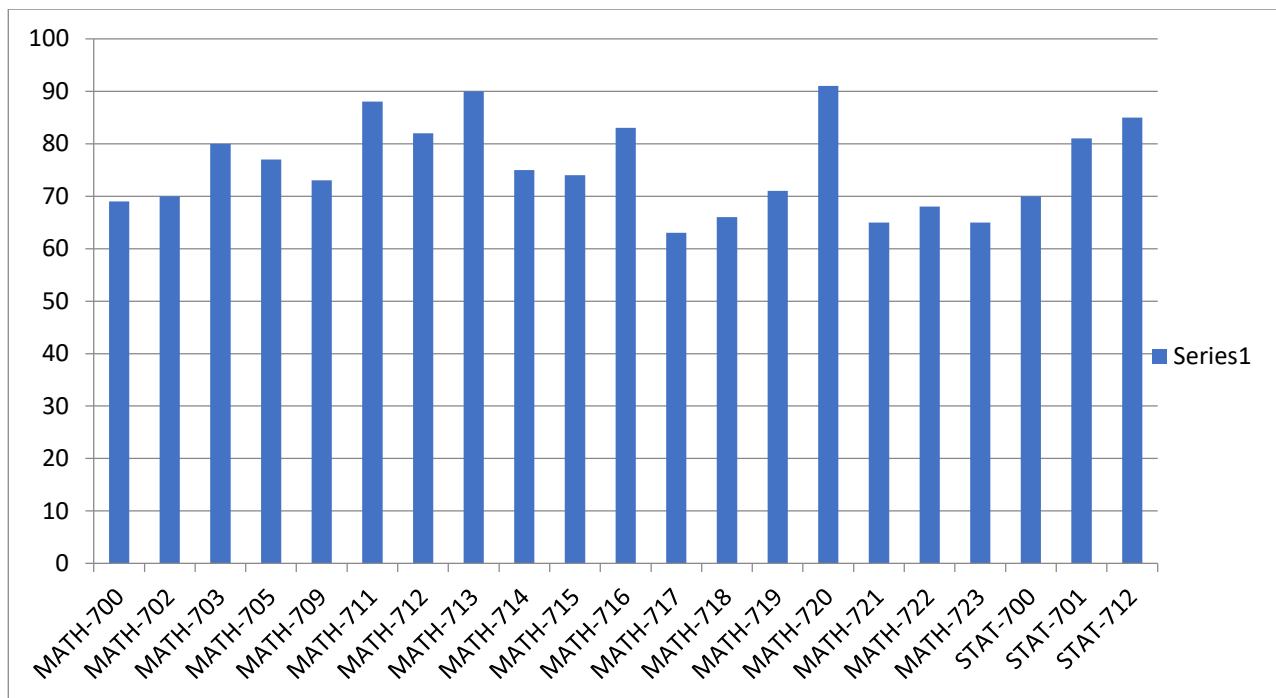
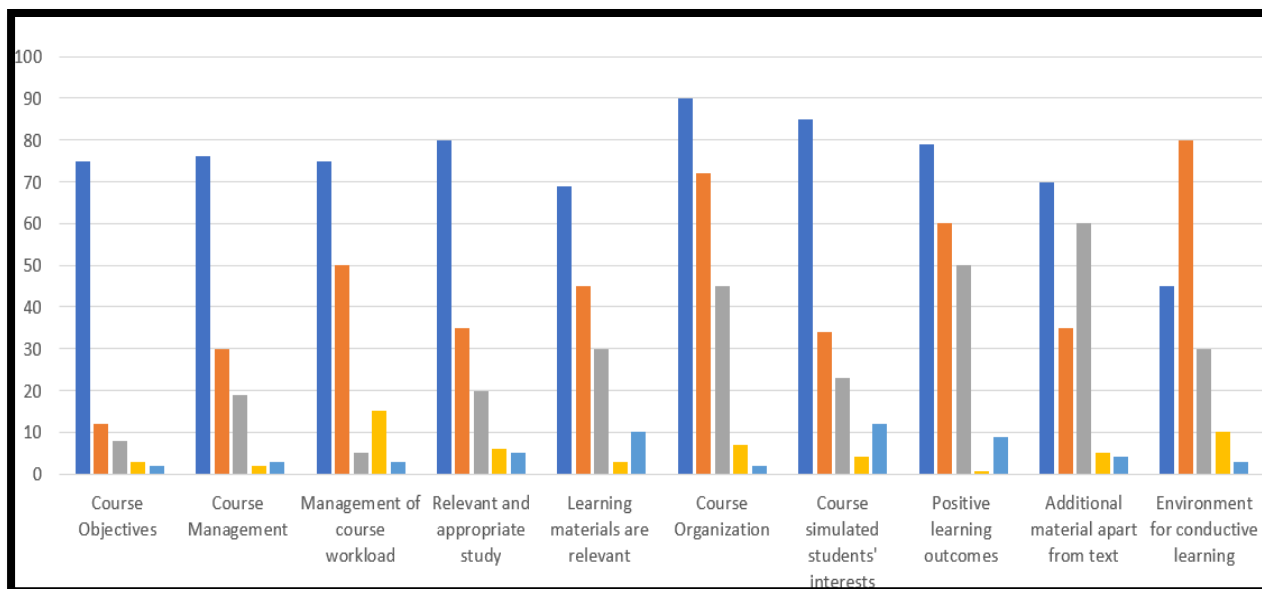


Figure 2: Course Evaluation Graph

Each course evaluation is presented graphically below.

Dr.Asim Hussain (MATH-700)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 73% strongly agreed, 11% agreed, 8% are uncertain, 5% disagreed and 2% strongly disagree. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 73% strongly agreed, 50% agreed, 10% are uncertain, 5% disagreed and 2% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 70% strongly agreed, 34% agreed, 60 are uncertain, 3% disagreed and 2% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 90% strongly agreed, 70% agreed, 42% are uncertain, 5% disagreed and 0% strongly disagree. The graph “The course simulated students interests and thought on the subject” shows that 82% strongly agreed, 32% agreed, 22% are uncertain, 5% disagreed and 11% strongly disagree. The graph “Course was well structured to achieve the learning outcomes” shows that 40% were strongly agreed, 79% agreed, 60% are uncertain, 50% disagreed and 5% strongly disagree.



General Comments by Students about this course:

Strengths:

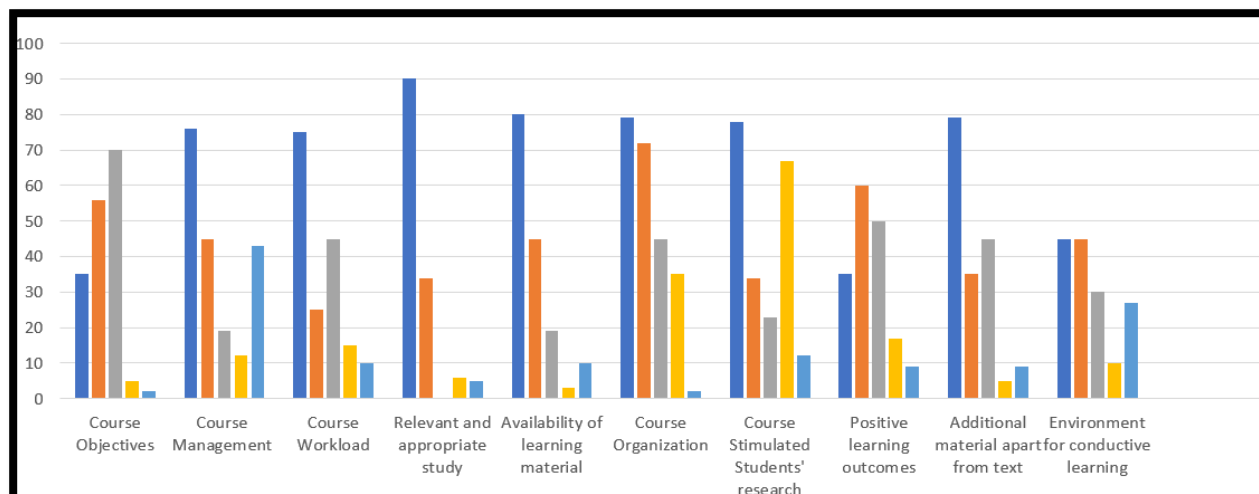
- The Course Objectives were clear
- The Course workload was manageable
- The course was well organized
- The course simulated students interests and thought on the subject

Weaknesses:

- No significant weakness was found

Ms. Tabinda (MATH-702)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 35% strongly agreed, 55% agreed, 70% are uncertain, 5% disagreed and 3% strongly disagree. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 72% strongly agreed, 23% agreed, 42% are uncertain, 15% disagreed and 10% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 42% strongly agreed, 42% agreed, 30% are uncertain, 10% disagreed and 8% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 80% strongly agreed, 71% agreed, 42% are uncertain, 32% disagreed and 1% strongly disagree. The graph “The course simulated students interests and thought on the subject” shows that 79% strongly agreed, 32% agreed, 22% are uncertain, 63% disagreed and 11% strongly disagree.



General Comments by Students about this course:

Strengths:

- The Course workload was manageable
- The course was well organized

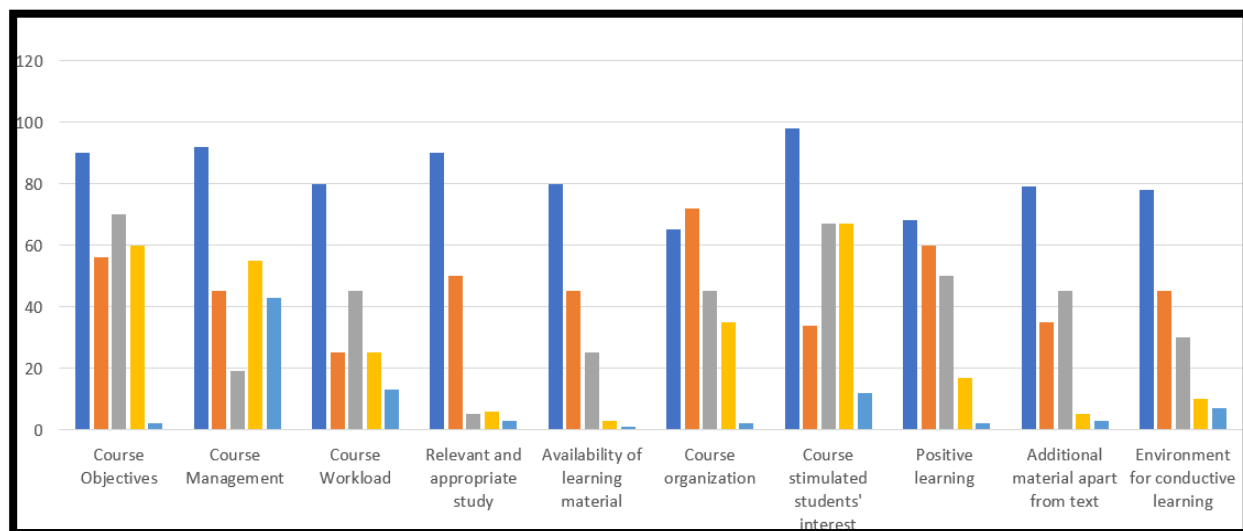
Weaknesses:

- The course objective should be clear.
- The course needs to be well structured to achieve the learning outcome.

Ms .Bushra (MATH-703)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 85% strongly agreed, 48% agreed, 65% are uncertain, 60% disagreed and 0% strongly disagree. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 80% strongly agreed, 23% agreed, 42% are uncertain, 10% disagreed and 3% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 80% strongly agreed, 43% agreed, 23% are uncertain, 2% disagreed and 1% strongly disagree. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 65% strongly agreed, 60% agreed, 50% are uncertain, 10% disagreed and 1% strongly disagree. The course was very well organized. The

graph “Relevant and appropriate study” shows that 90% strongly agreed, 50% agreed, 3% are uncertain, 5% disagreed and 1% strongly disagree.



General Comments by Students about this course:

Strengths:

- The Course workload was manageable
- Clear Objectives
- Well organized material

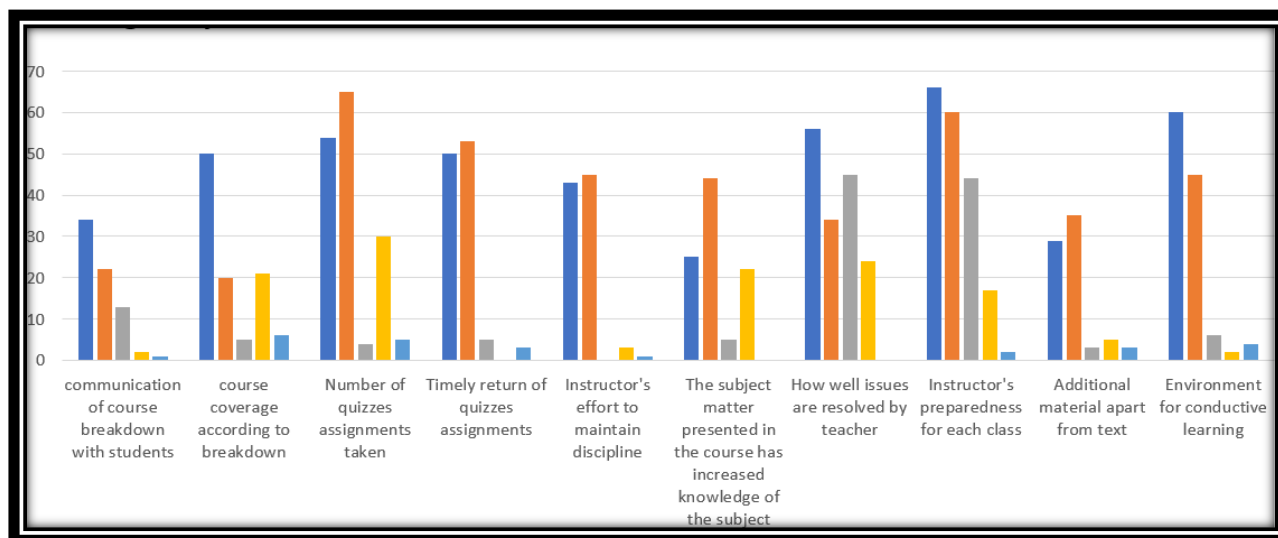
Weaknesses:

- Course need to be well structured to achieve the learning outcomes

Mr.Asim Hafeez (MATH-705)

The graph for “The instructor is prepared for each class”, shows that 68% are strongly agreed, 60% are agreed, 45% are uncertain, 15% disagreed and 12% are strongly disagreed. The graph for “The Instructor maintains an environment that is conducive to learning.”, shows that 60% are strongly agreed, 45% are agreed, 8% are uncertain, 2% disagreed and 5% are strongly disagreed. The graph for “Coverage of course according to breakdown” shows that 50% are strongly agreed, 20% are agreed, 5% are uncertain, 20% disagreed and 5% are strongly disagreed. The graph for “The communication of course breakdown with students and coverage of course according to breakdown”, shows that 50% are strongly agreed, 20% are agreed, 4% are uncertain, 20%

disagreed and 5% are strongly disagreed. “Number of quizzes assignments taken with correspondence to course breakdown” , shows that 55% are strongly agreed, 68% are agreed, 5% are uncertain, 30% disagreed and 6% are strongly disagreed.



General Comments by Students about this course:

Strengths:

- Understanding of the course
- Clear Objectives
- Well organized material

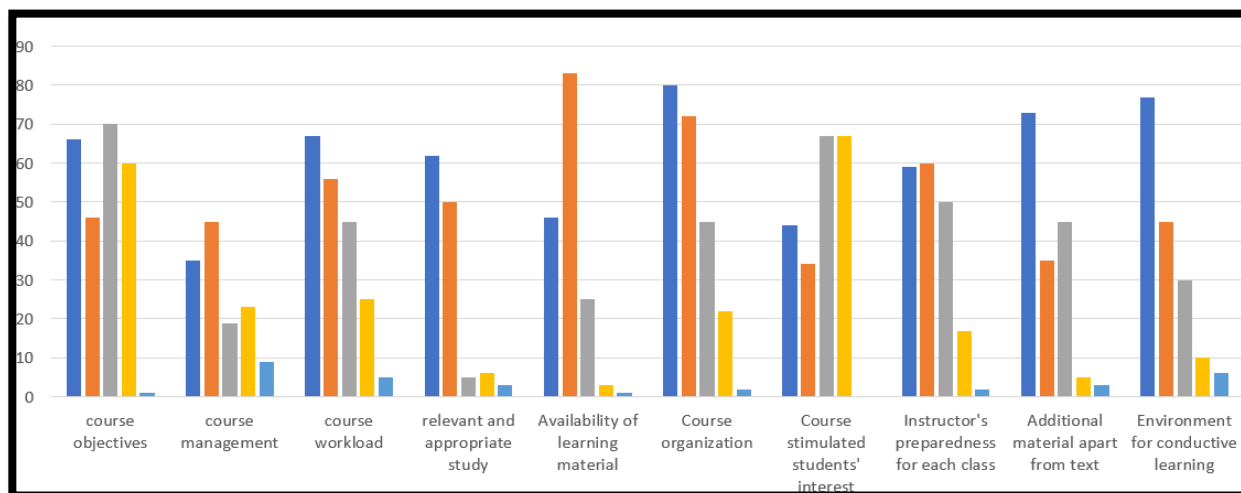
Weaknesses:

- More practical material should be added

Ms. Tabinda (MATH-709)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 68% strongly agreed, 45% agreed, 70% are uncertain, 60% disagreed and 0% strongly disagreed. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 68% strongly agreed, 55% agreed, 42% are uncertain, 22% disagreed and 3% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 45% strongly agreed, 82% agreed, 23% are uncertain, 3% disagreed and 1% strongly disagreed. The

course was very well organized. This can be seen in the graph “The course was well organized” , 80% strongly agreed, 71% agreed, 45% are uncertain, 20% disagreed and 1% strongly disagree. The graph “The instructor maintains an environment that is conducive to learning.” shows that 78% were strongly agreed, 45% agreed, 30% are uncertain, 10% disagreed and 5% strongly disagree.



General Comments by Students about this course:

Strengths:

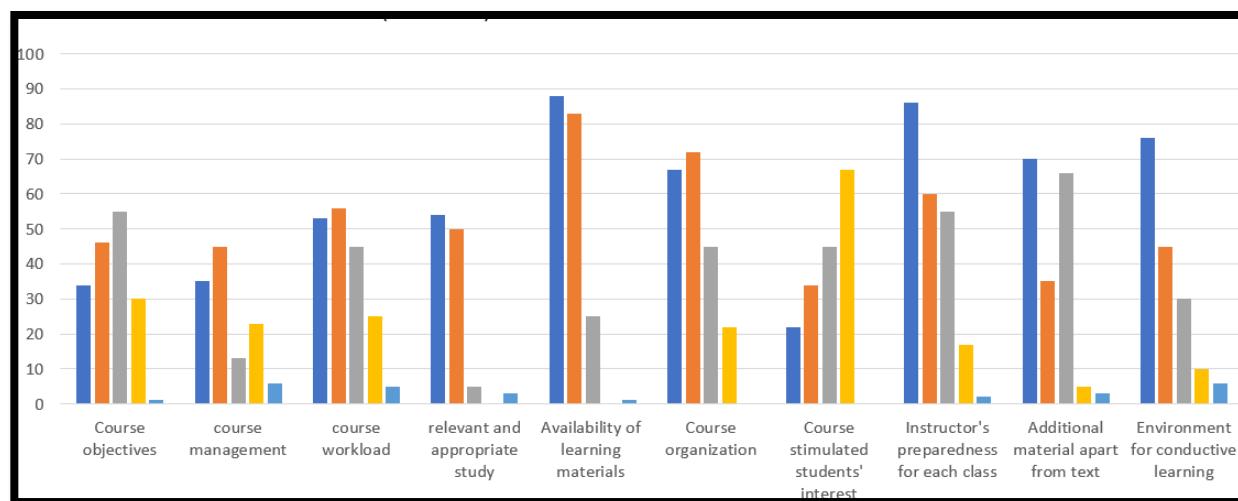
- The Course Objectives were clear
- The Course workload was manageable
- Learning materials (lesson plans, course notes etc.) were relevant and useful
- The course was well organized
- The course simulated students interests and thought on the subject
- Course was well structured to achieve the learning outcomes

Weaknesses:

- No significant weakness was found

Ms. Tabinda (MATH-712)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 52% strongly agreed, 55% agreed, 45% are uncertain, 25% disagreed and 5% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 88% strongly agreed, 82% agreed, 25% are uncertain, 0% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 68% strongly agreed, 71% agreed, 45% are uncertain, 20% disagreed and 0% strongly disagree. The graph “The Instructor provides additional material apart from text” shows that 70% strongly agreed, 35% agreed, 65% are uncertain, 4% disagreed and 2% strongly disagree. The graph “The Instructor maintains an environment that is conducive to learning” shows that 75% are strongly agreed, 45% are agreed, 30% are uncertain, 10% disagreed and 5% are strongly disagreed.



General Comments by Students about this course:

Strengths:

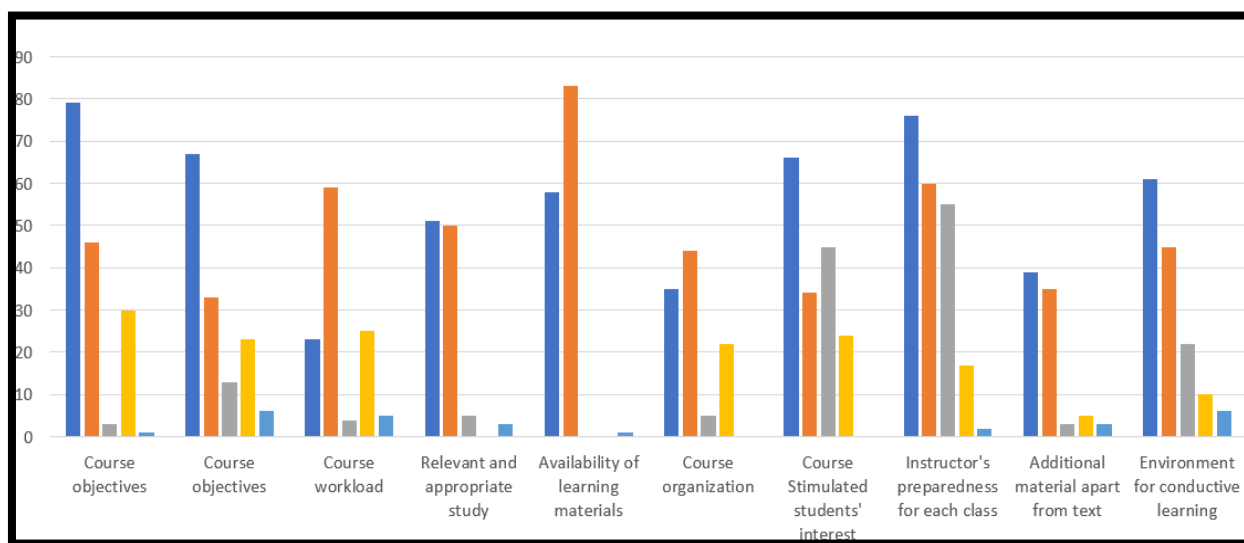
- Course was well structured to achieve the learning outcomes
- Clear Objectives
- The Course workload was manageable
-

Weaknesses:

- No significance weakness was found.

Ms .Bushra (MATH-713)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 79% strongly agreed, 46% agreed, 1% are uncertain, 30% disagreed and 1% strongly disagree. The teacher has managed the course workload very well. The graph “additional material a part from text” show this, 42% strongly agreed, 37% agreed, 5% are uncertain, 6% disagreed and 5% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 58% strongly agreed, 82% agreed, 0% are uncertain, 0% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 39% strongly agreed, 43% agreed, 5% are uncertain, 20% disagreed and 0% strongly disagree. The graph “The course simulated students interests and thought on the subject” shows that 66% strongly agreed, 33% agreed, 42% are uncertain, 21% disagreed and 0% strongly disagree. The graph “availability of learning material” shows that 59% were strongly agreed, 81% agreed, 0% are uncertain, 0% disagreed and 1% strongly disagree.



General Comments by Students about this course:

Strengths:

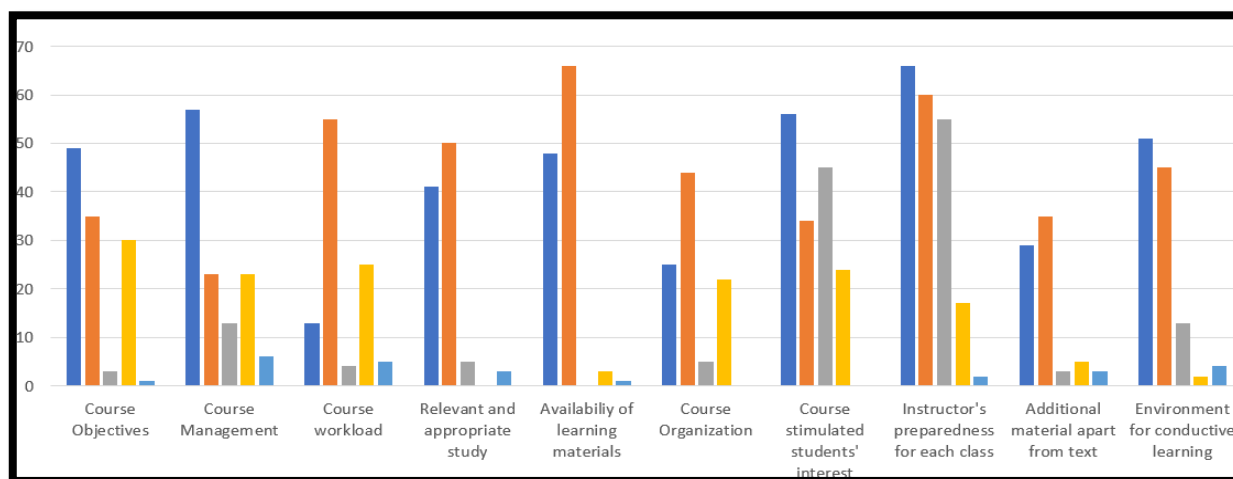
- Understanding of the course
- Clear Objectives
- The Course workload was manageable
- Course was well structured to achieve the learning outcomes

Weaknesses:

- No significance weakness was found

Dr.Asim Hussain (MATH-714)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 49% strongly agreed, 35% agreed, 5% are uncertain, 30% disagreed and 1% strongly disagree. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 12% strongly agreed, 55% agreed, 5% are uncertain, 25% disagreed and 6% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 49% strongly agreed, 66% agreed, 0% are uncertain, 4% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “The instructor is prepared for each class” , 65% strongly agreed, 60% agreed, 55% are uncertain, 16% disagreed and 1% strongly disagree. The graph “The course simulated students interests and thought on the subject” shows that 55% strongly agreed, 35% agreed, 45% are uncertain, 22% disagreed and 0% strongly disagree.



General Comments by Students about this course:

Strengths:

- Course objectives are clear.
- Learning materials (lesson plans, course notes etc.) were relevant and useful
- Course was well structured to achieve the learning outcomes
- The Course workload was manageable

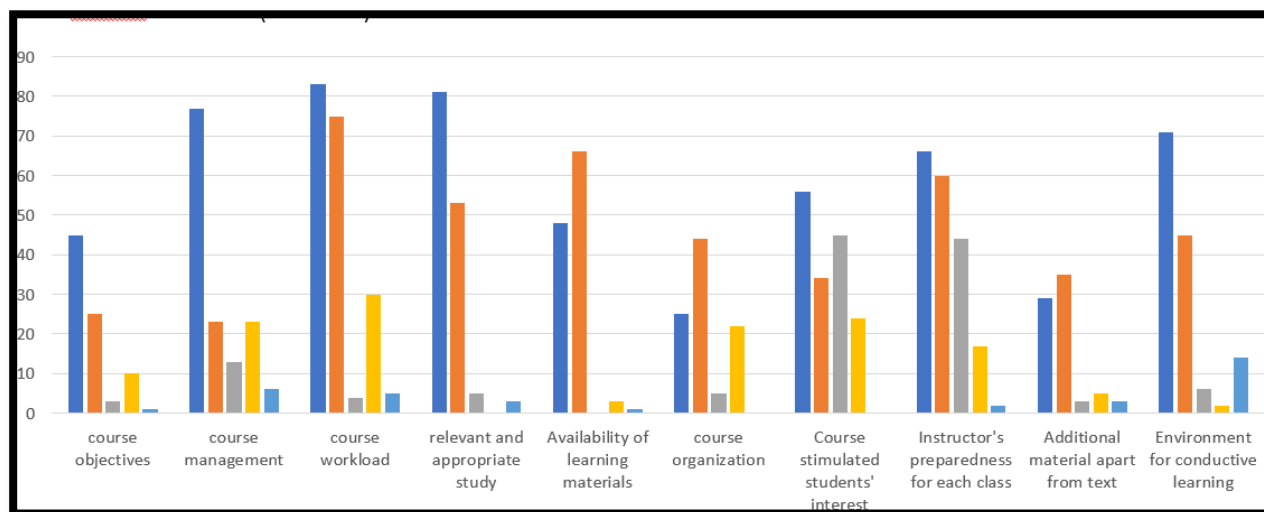
Weaknesses:

- No significance weakness was found

Ms .Bushra (MATH-715)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 43% strongly agreed, 25% agreed, 5% are uncertain, 10% disagreed and 1% strongly disagree. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 82% strongly agreed, 75% agreed, 5% are uncertain, 30% disagreed and 6% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 48% strongly agreed, 65% agreed, 0% are uncertain, 3% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 25% strongly agreed, 43% agreed, 5% are uncertain, 21% disagreed and 0% strongly disagree. The graph “The course simulated students interests and

thought on the subject” shows that 56% strongly agreed, 32% agreed, 41% are uncertain, 21% disagreed and 0% strongly disagree. The graph “Course was well structured to achieve the learning outcomes” shows that 78% were strongly agreed, 22% agreed, 11% are uncertain, 22% disagreed and 5% strongly disagree.



General Comments by Students about this course:

Strengths:

- The Course workload was manageable
- Clear Objectives
- Well organized material

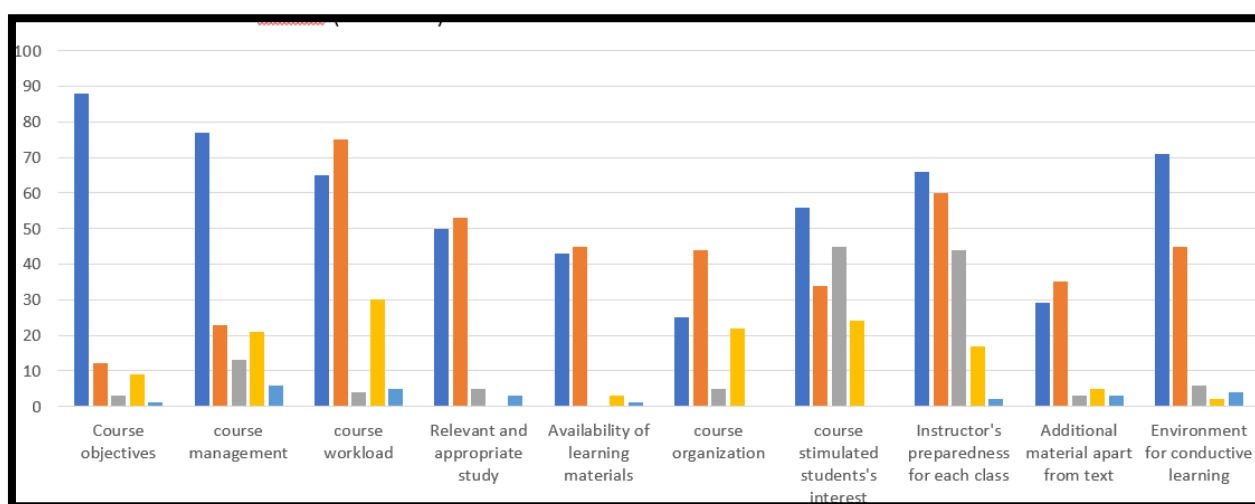
Weaknesses:

- No significance weakness was found

Dr.Asim Hussain (MATH-716)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 89% strongly agreed, 11% agreed, 5% are uncertain, 8% disagreed and 1% strongly disagree. The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 62% strongly agreed, 73% agreed, 5% are uncertain, 30% disagreed and 6% strongly disagree. The instructor recommended relevant and appropriate study

material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 43% strongly agreed, 44% agreed, 0% are uncertain, 2% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “For Course management” ,77% strongly agreed, 22% agreed, 11% are uncertain, 6% disagreed and 5% strongly disagree. The graph “The course simulated students interests and thought on the subject” shows that 55% strongly agreed, 33% agreed, 42% are uncertain, 21% disagreed and 0% strongly disagree.



General Comments by Students about this course:

Strengths:

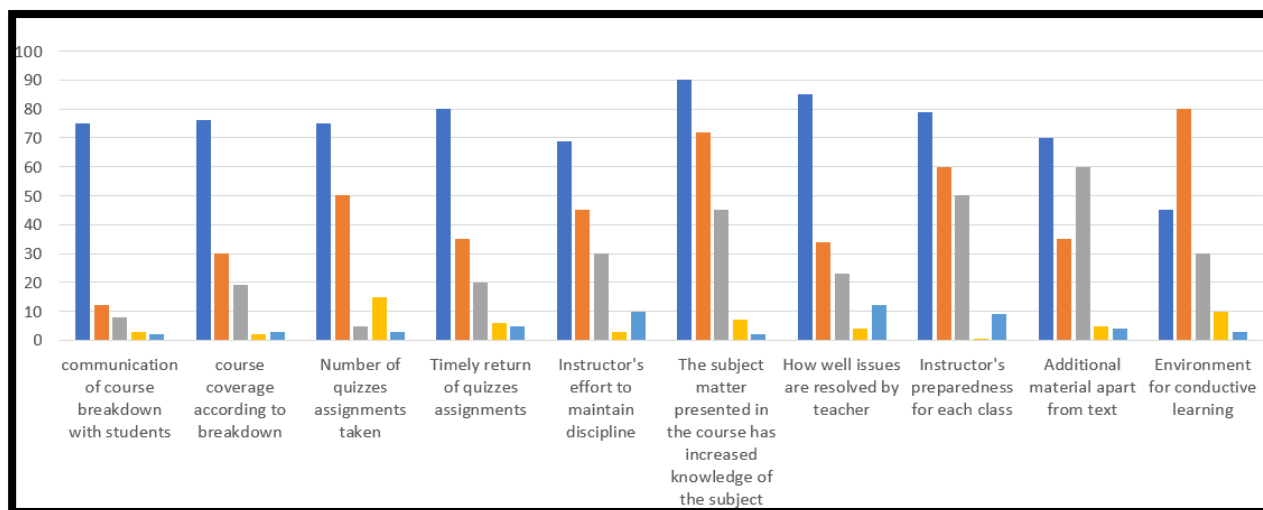
- Active participation
- Course objectives not clear
- Learning material (lesson plans, course notes etc.) was not relevant and useful
- Course needs to be well structured to achieve the learning outcomes
- The Course workload should be manageable
- The course should simulate students interests and thought on the subject

Weaknesses:

- No significance weakness was found

Dr.Asim Hussain (MATH-717)

The graph for “The communication of course breakdown with students and coverage of course according to breakdown”, shows that 75% are strongly agreed, 12% are agreed, 8% are uncertain, 2% disagreed and 1% are strongly disagreed. The graph for “Number of quizzes assignments taken with correspondence to course breakdown”, shows that 75% are strongly agreed, 50% are agreed, 5% are uncertain, 12% disagreed and 2% are strongly disagreed. The graph for “The Instructor’s effort to maintain discipline.”, shows that 69% are strongly agreed, 43% are agreed, 30% are uncertain, 2% disagreed and 10% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 90% are strongly agreed, 70% are agreed, 44% are uncertain, 8% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

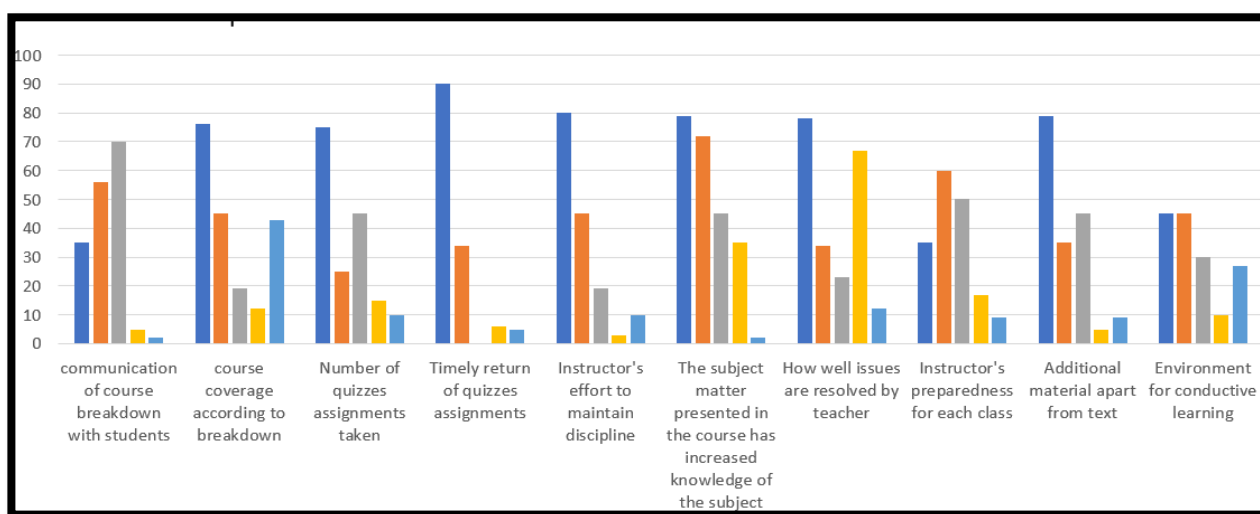
- Good grip at course
- Punctual
- Fair in examination
- Good Teaching method

Weakness:

- No significance weakness was found

Ms. Tabinda (MATH-718)

The graph for “The instructor is prepared for each class”, shows that 35% are strongly agreed, 60% are agreed, 50% are uncertain, 17% disagreed and 9% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 79% are strongly agreed, 35% are agreed, 43% are uncertain, 4% disagreed and 5% are strongly disagreed. The graph for “The instructor timely quizzes and assignments.”, shows that 90% are strongly agreed, 32% are agreed, 0% are uncertain, 3% disagreed and 1% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 80% are strongly agreed, 71% are agreed, 44% are uncertain, 35% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

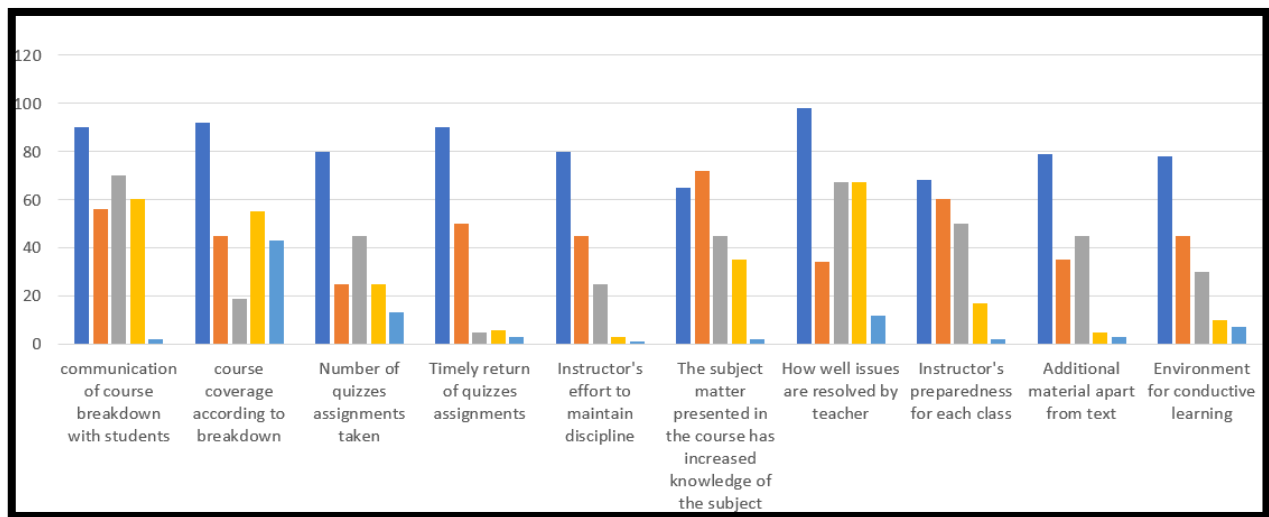
- Well prepared

Weakness:

- No significant weakness was found.

Ms .Bushra (MATH-719)

The graph for “Timely return quizzes and assignments” shows that 85% are strongly agreed, 44% are agreed, 4% are uncertain, 5% disagreed and 1% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 79% are strongly agreed, 30% are agreed, 42% are uncertain, 5% disagreed and 1% are strongly disagreed. The graph for “The instructor maintains an environment that is conducive to learning.” shows that 79% are strongly agreed, 42% are agreed, 23% are uncertain, 5% disagreed and 2% are strongly disagreed. The graph for “The instructor is prepared for each class”, shows that 64% are strongly agreed, 60% are agreed, 50% are uncertain, 15% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher

Strengths:

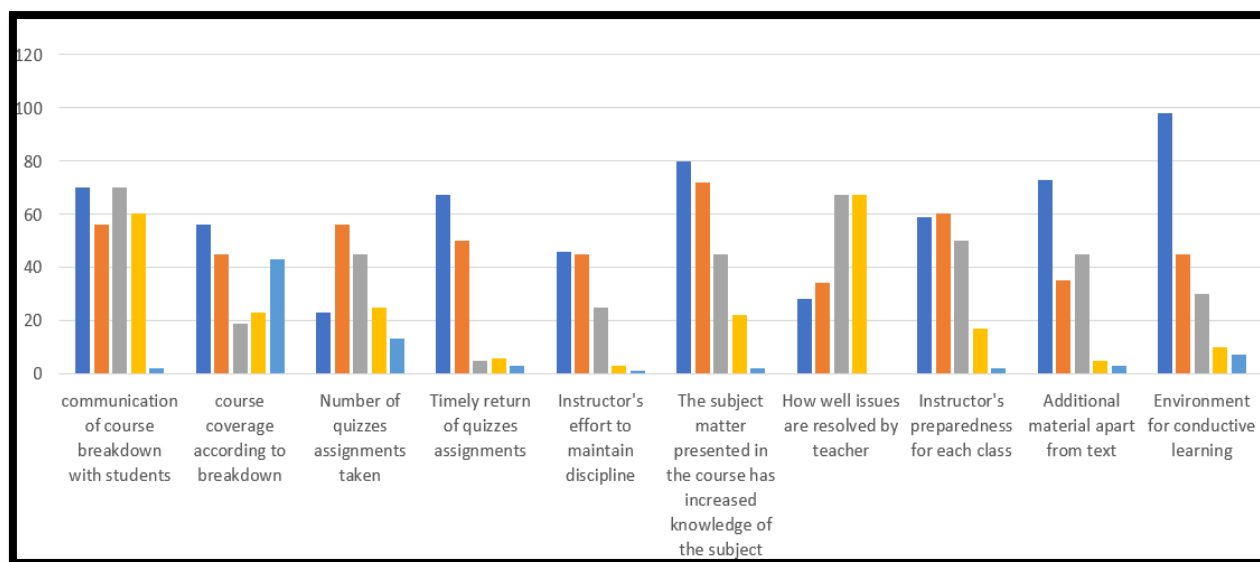
- Handles queries very well
- Understands students' problems
- Makes time for students

Weakness:

- No significant weakness was found.

Mr.Asim Hafeez (MATH-720)

The graph for “The communication of course breakdown with students and coverage of course according to breakdown”, shows that 69% are strongly agreed, 55% are agreed, 67% are uncertain, 60% disagreed and 1% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 76% are strongly agreed, 33% are agreed, 43% are uncertain, 4% disagreed and 1% are strongly disagreed. The graph for “The instructor maintains an environment that is conducive to learning.”, shows that 98% are strongly agreed, 42% are agreed, 25% are uncertain, 9% disagreed and 5% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 80% are strongly agreed, 77% are agreed, 41% are uncertain, 21% disagreed and 1% are strongly disagreed. “The instructor is prepared for each class”, shows that 59% are strongly agreed, 60% are agreed, 45% are uncertain, 18% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

- Course intend delivered well
- Instructor demonstrate the knowledge of subject very well
- Instructor provides additional material apart from the text
- Fair marking

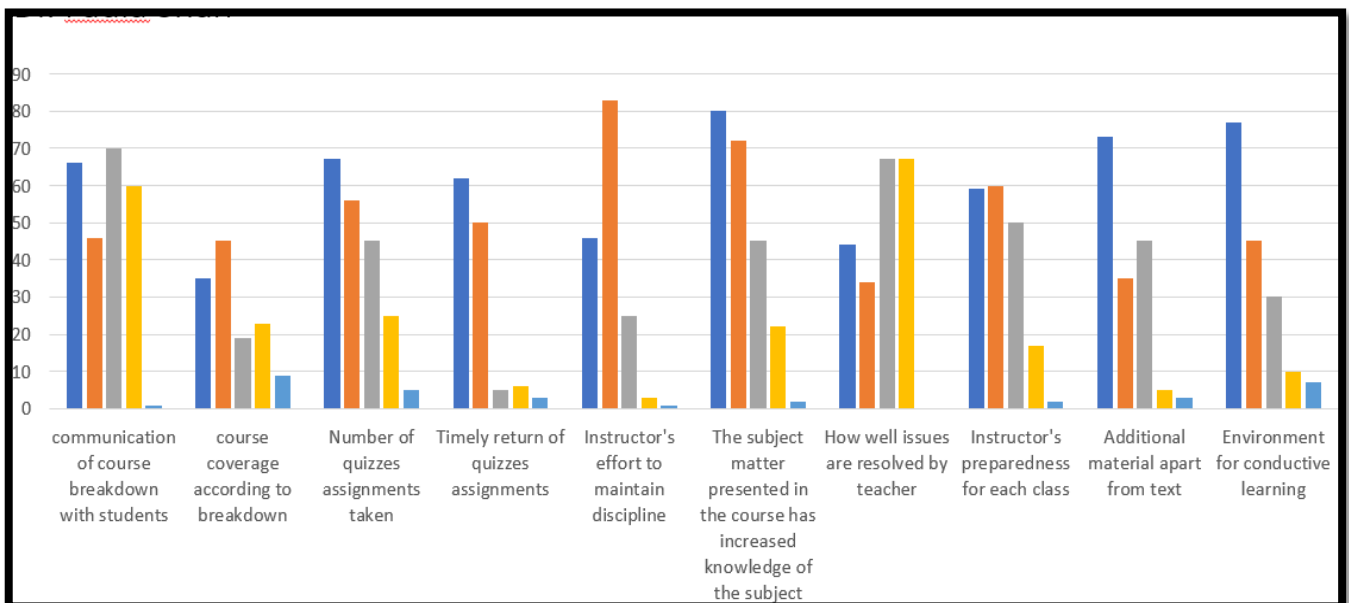
- Kind teacher

Weakness:

- No significant weakness was found.

Mr.Asim Hafeez (MATH-721)

The graph for “The instructor maintains an environment that is conducive to learning.” shows that 78% are strongly agreed, 45% are agreed, 30% are uncertain, 10% disagreed and 5% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 71% are strongly agreed, 32% are agreed, 42% are uncertain, 4% disagreed and 1% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” , shows that 80% are strongly agreed, 70% are agreed, 42% are uncertain, 21% disagreed and 1% are strongly disagreed. The graph for “Timely return quizzes and assignments” shows that 61% are strongly agreed, 50% are agreed, 4% are uncertain, 5% disagreed and 1% are strongly disagreed. The graph for “The instructor is prepared for each class”, shows that 59% are strongly agreed, 60% are agreed, 50% are uncertain,16% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

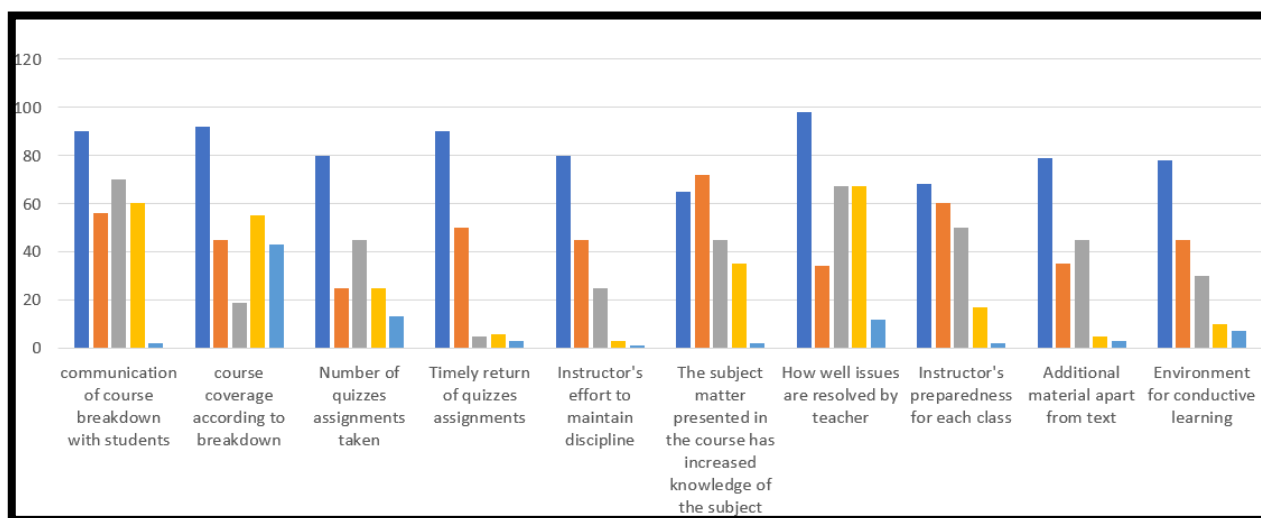
- Well prepared
- Punctual
- Instructor demonstrate the knowledge of subject very well
- Instructor provides additional material apart from the text
- Effective lab tasks

Weakness:

- No significant weakness was found.

Ms .Bushra (MATH-722)

The graph for “Timely return quizzes and assignments” shows that 85% are strongly agreed, 44% are agreed, 4% are uncertain, 5% disagreed and 1% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 79% are strongly agreed, 30% are agreed, 42% are uncertain, 5% disagreed and 1% are strongly disagreed. The graph for “The instructor maintains an environment that is conducive to learning.” shows that 79% are strongly agreed, 42% are agreed, 23% are uncertain, 5% disagreed and 2% are strongly disagreed. The graph for “The instructor is prepared for each class”, shows that 64% are strongly agreed, 60% are agreed, 50% are uncertain, 15% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

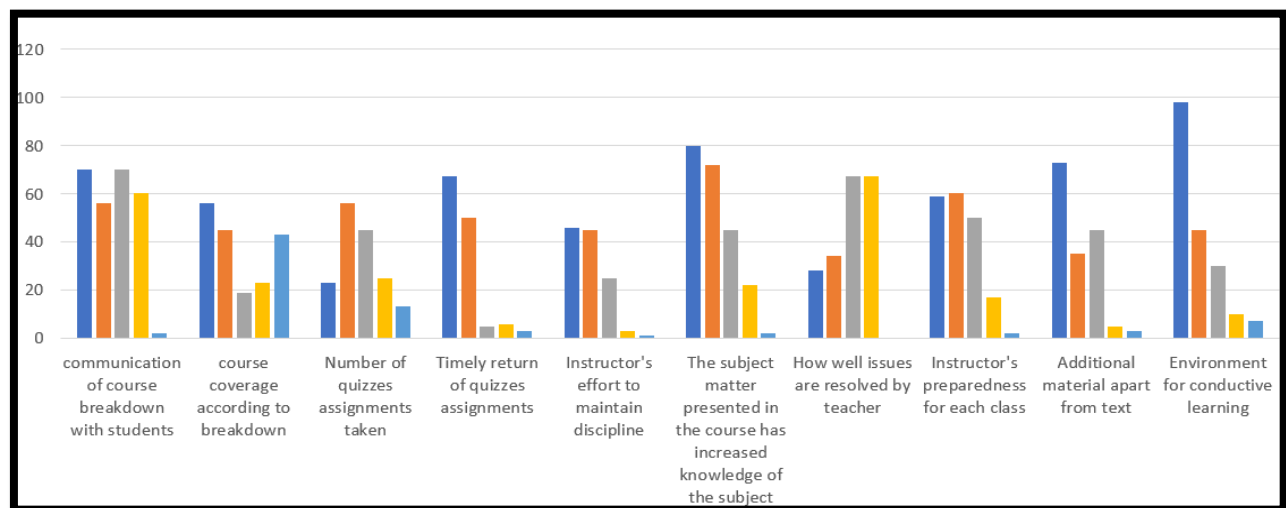
- Handles queries very well
- Understands students' problems
- Makes time for students

Weakness:

- No significant weakness was found.

Mr.Asim Hafeez (MATH-723)

The graph for “The communication of course breakdown with students and coverage of course according to breakdown”, shows that 69% are strongly agreed, 55% are agreed, 67% are uncertain, 60% disagreed and 1% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 76% are strongly agreed, 33% are agreed, 43% are uncertain, 4% disagreed and 1% are strongly disagreed. The graph for “The instructor maintains an environment that is conducive to learning.”, shows that 98% are strongly agreed, 42% are agreed, 25% are uncertain, 9% disagreed and 5% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” shows that 80% are strongly agreed, 77% are agreed, 41% are uncertain, 21% disagreed and 1% are strongly disagreed. “The instructor is prepared for each class”, shows that 59% are strongly agreed, 60% are agreed, 45% are uncertain, 18% disagreed and 1% are strongly disagreed.



General Comments of the Students about the Teacher Strengths:

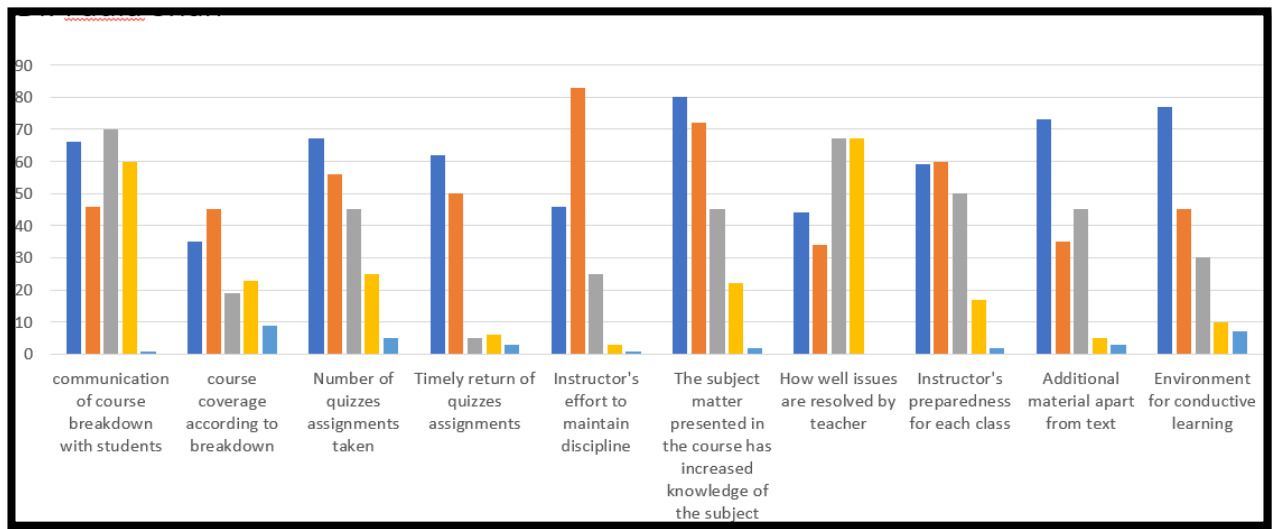
- Course intend delivered well
- Instructor demonstrate the knowledge of subject very well
- Instructor provides additional material apart from the text
- Fair marking
- Kind teacher

Weakness:

- No significant weakness was found.

Ms.Mufzala (STAT-700)

The graph for “The instructor maintains an environment that is conducive to learning.” shows that 78% are strongly agreed, 45% are agreed, 30% are uncertain, 10% disagreed and 5% are strongly disagreed. “The Instructor provides additional material apart from text”, shows that 71% are strongly agreed, 32% are agreed, 42% are uncertain, 4% disagreed and 1% are strongly disagreed. The graph for “The subject matter presented in the course has increased your knowledge of the subject” , shows that 80% are strongly agreed, 70% are agreed, 42% are uncertain, 21% disagreed and 1% are strongly disagreed. The graph for “Timely return quizzes and assignments” shows that 61% are strongly agreed, 50% are agreed, 4% are uncertain, 5% disagreed and 1% are strongly disagreed. The graph for “The instructor is prepared for each class”, shows that 59% are strongly agreed, 60% are agreed, 50% are uncertain,16% disagreed and 1% are strongly disagreed



General Comments of the Students about the Teacher Strengths:

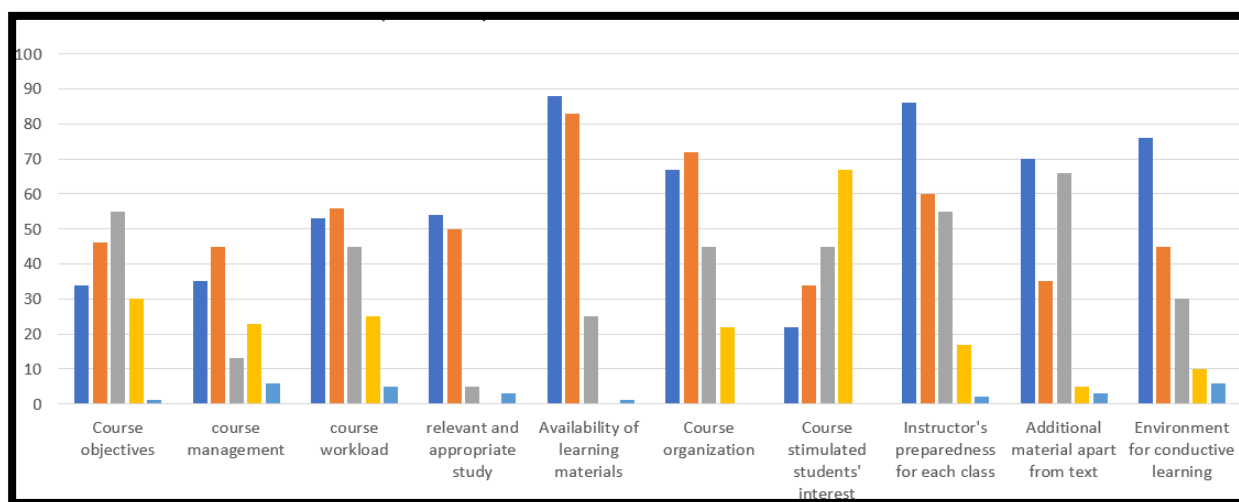
- Handles queries very well
- Understands students' problems
- Makes time for students

Weakness:

- No significant weakness was found.

Ms.Mufzala (STAT-701)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of The teacher has managed the course workload very well. The graph “The Course workload was manageable” show this, 52% strongly agreed, 55% agreed, 45% are uncertain, 25% disagreed and 5% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 88% strongly agreed, 82% agreed, 25% are uncertain, 0% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 68% strongly agreed, 71% agreed, 45% are uncertain, 20% disagreed and 0% strongly disagree. The graph “The Instructor provides additional material apart from text” shows that 70% strongly agreed, 35% agreed, 65% are uncertain, 4% disagreed and 2% strongly disagree. The graph “The Instructor maintains an environment that is conducive to learning” shows that 75% are strongly agreed, 45% are agreed, 30% are uncertain, 10% disagreed and 5% are strongly disagreed.



General Comments by Students about this course:

Strengths:

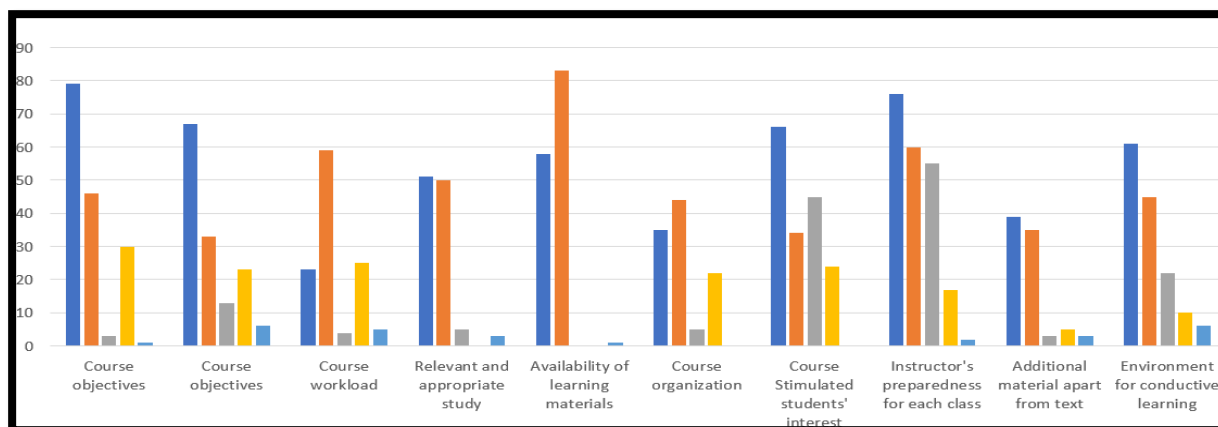
- Course was well structured to achieve the learning outcomes
- Clear Objectives
- The Course workload was manageable

Weaknesses:

- No significance weakness was found.

Ms.Mufzala (STAT-712)

The graph shows the details of the evaluation. The course objectives were clear and course proceeded according to the way of achieving this. The graph of “The Course Objectives were clear” indicates this, 79% strongly agreed, 46% agreed, 1% are uncertain, 30% disagreed and 1% strongly disagree. The teacher has managed the course workload very well. The graph “additional material a part from text” show this, 42% strongly agreed, 37% agreed, 5% are uncertain, 6% disagreed and 5% strongly disagree. The instructor recommended relevant and appropriate study material for this course. The graph “Learning materials (lesson plans, course notes etc.) were relevant and useful” reflects this, 58% strongly agreed, 82% agreed, 0% are uncertain, 0% disagreed and 1% strongly disagree. The course was very well organized. This can be seen in the graph “The course was well organized”, 39% strongly agreed, 43% agreed, 5% are uncertain, 20% disagreed and 0% strongly disagree. The graph “The course simulated students interests and thought on the subject” shows that 66% strongly agreed, 33% agreed, 42% are uncertain, 21% disagreed and 0% strongly disagree. The graph “availability of learning material” shows that 59% were strongly agreed, 81% agreed, 0% are uncertain, 0% disagreed and 1% strongly disagree.



General Comments by Students about this course:

Strengths:

- Understanding of the course
- Clear Objectives
- The Course workload was manageable
- Well organized material
- Course was well structured to achieve the learning outcomes

Weaknesses:

- No significance weakness was found

Standard 1-4: The department must assess its overall performance periodically.

a) Total Numbers of Students

S. No	Year	Degree MSc
1	2016	103
2	2017	100
3	2018	118

b) Student/Faculty Ratio

For about 108 master's students there are around 06 teachers (4 regular and 2 visiting) engaged in MSc level teaching, i.e., $108/6 = 18$ students per teacher approximately.

c) Time for Masters

This is a two-year (minimum of four semesters and maximum of six semesters) duration program after Bachelor's degree in the relevant subject.

d) The average student grade point (CGPA)

The average student grade point is 3.0 CGPA

Table 3: Present performance measures for research activities

Faculty	Publication	Others (Conference proceedings)	Projects
Dr. Asim Hussain	02	-	-
Mr. Asim Hafeez	-	-	-
Ms. Bushra Bibi	-	-	-
Ms. Tabinda Naz	-	-	-
Ms. Mufzalla Rahim	-	-	-

Major Future Improvement Plans

- To impart quality education using audio visual aids along with provision of latest literature, cases, journals, books, reviews and access to digital library.
- To develop business graduates who meet future challenges.
- To emphasize research on specific industrial problems of national as well as international importance.
- Overall enhancement of knowledge and skills of faculty members in relation to the latest global advancements in this discipline through exchange programs, short training and collaborative research projects within and outside Pakistan.

Table 4: Quantitative assessment of the department

Sr. #	Particular	No.	Remarks
I	MSc degree awarded	160	For the year 2016-2018
II	M.Phil degree awarded	-	--
III	Ph.D. degree awarded	-	--
Iv	Post-Doc fellowship	-	--
V	Students: Faculty ratio	-	1: 20
VI	Technical: Nontechnical Ratio	-	Fulfill HEC criteria

Survey of Graduating Students

A survey is conducted for the students of last semester and the results are summarized. The graph from the summarized results shows that 89% students are very satisfied from the program, 76% are satisfied, 54% are uncertain, 5% are dissatisfied and 1% are very dissatisfied.

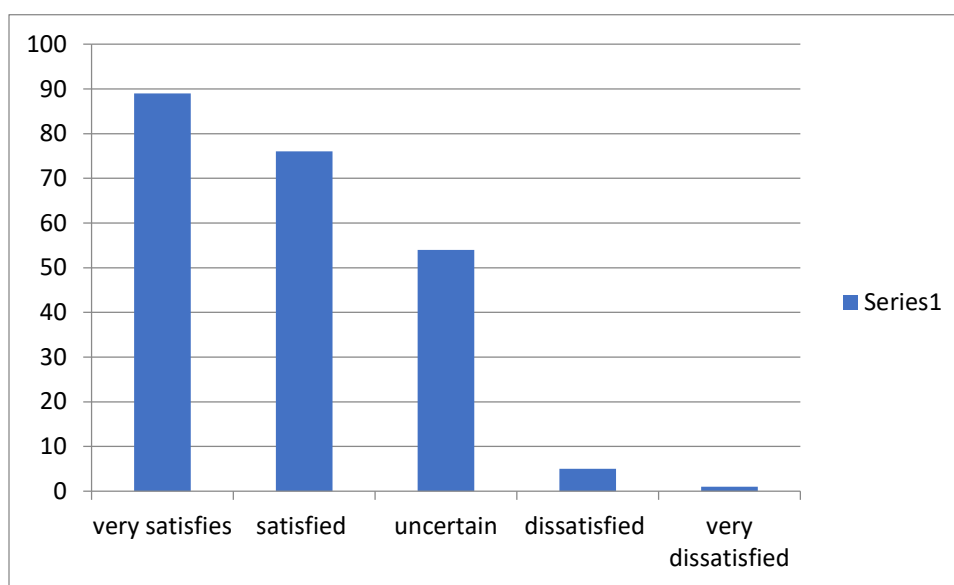


Figure 3: Survey of Graduating Students:

Strength:

- Qualified faculty
- Director helpful and address the student's problem on time
- Introduction to the new technologies
- Much focus on the theoretical concepts which help to continue further studies.

Weaknesses:

- More lab time should be provided which should be independent of the timetable so that students can work what work they want to do.
- More electives should be included.

Performa 7: Alumni Survey

The purpose of this survey was to obtain alumni input on the quality of education, knowledge and communication and Interpersonal skills they received and the level of preparation they had at University. The total of 46 students provided the data. The survey results were shown as follows.

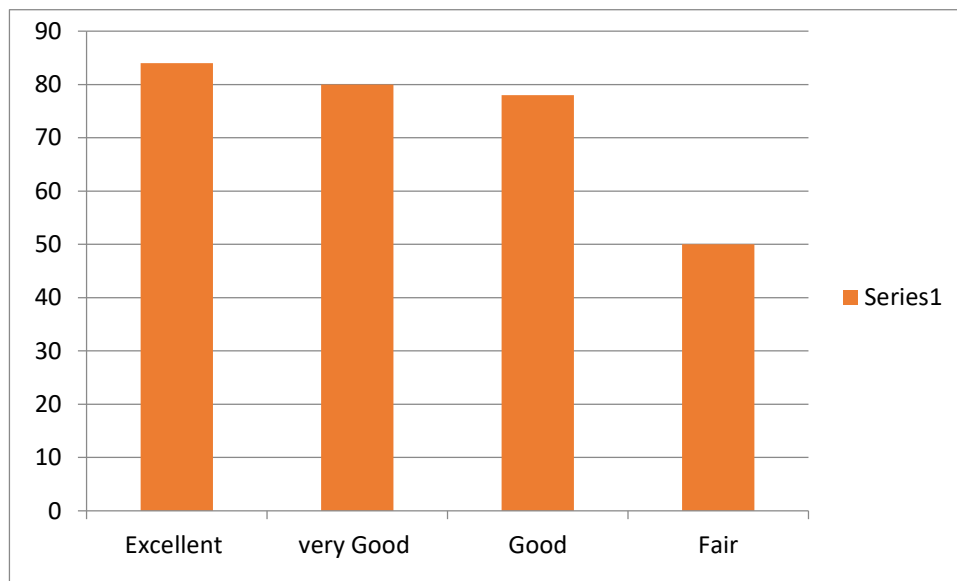


Figure 5: Alumni Survey

It has been observed that 84% responded excellent regarding their abilities to problem formulation work. About 80% has reported excellent on Independent thinking and judgment skills. 78% answered good regarding their abilities to work in team and 20% agreed that department has improved their presentation skills. 50% has shown that their written skills such as report writing are improved.

Employer Survey

A survey has been conducted and feedback has been collected from the employees where students have a MSc Mathematics degree from BIMS are working. The results are summarized in the figure given below.

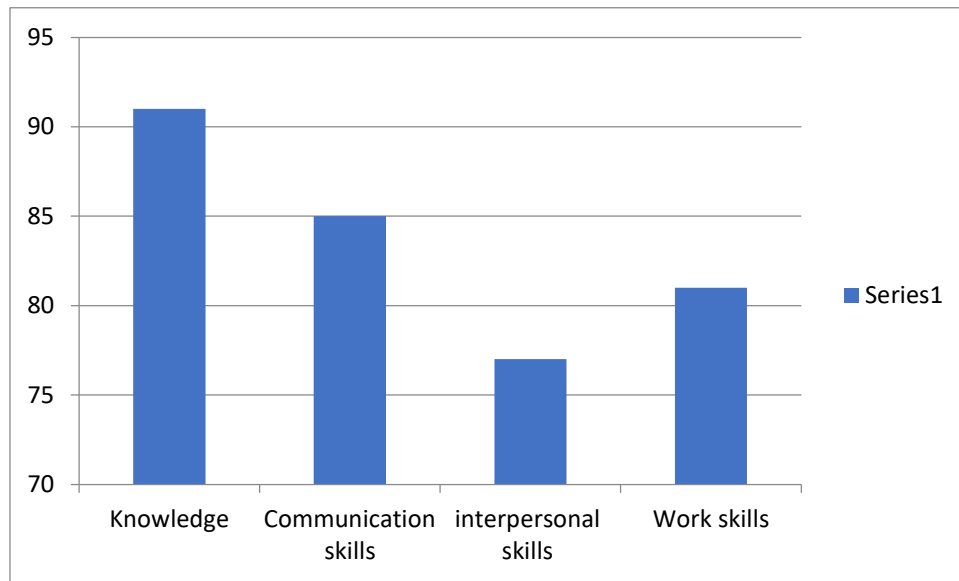


Figure 4: Employer Survey for Determining the Student's Skill Level

The graph shows the employers view regarding the students. The 91% students have enough knowledge regarding their field. The 85% have communication skills to communicate with the people of their own field. The 77% students have Interpersonal skills and 81% students have work skills related to the field. The entire employer was of the view that the students have potential and they can be more productive.

CRITERION-2

CURRICULUM DESIGN AND ORGANIZATION

Criterion-2 Curriculum Design and Organization

MASTER OF SCIENCE IN MATHEMATICS (M.Sc. Mathematics):

All the courses for degree program are developed by Academic Council Committee of PMAS Arid Agriculture University Rawalpindi. BIMS strictly follows the rules and regulations of Parent University. BIMS being an affiliate of PMAS-AAUR follows the curriculum of the Department of Mathematics.

Admission and Registration:

A candidate seeking admission for Degree of Master of Science in Mathematics (M.Sc. Mathematics) must have passed the Bachelor Degree Examination of BSc with two courses Mathematics or Mathematics with physics in aggregate with at least 50% marks from a recognized institution.

Academic Standing:

- (i) Grade Point Average
 - (a) Maximum grade point average: 4.00
 - (b) Minimum grade point average for obtaining Master's Degree: 2.50
- (ii) To remain on the roll of the University a student shall be required to maintain the minimum GPA/ CGPA in each semester, as given below.
- (iii) A student will be required to repeat those courses of the previous semesters in which he /she had failed, at the first available opportunity, provided that his / her maximum workload, including the courses being repeated by him / her, do not exceed the normal workload.
- (iv) A student, who obtains CGPA of 2.00 or above but less than 2.50, upon the completion of entire approved course work or minimum residency, may be allowed to repeat the courses of the previous semesters in which he/she had obtained the lowest grades, in order to improve the CGPA so as to obtain the minimum of 2.50 within the maximum time allowed for the award of degree, failing which he/ she shall be struck off from the university roll.

Semester	GPA/CGPA
1st	1.50
2nd	1.75
3rd	2.00
4th	2.50

**SCHEME OF STUDIES FOR MASTER
OF SCIENCE IN MATHEMATICS (M.Sc Mathematics)**

S. No.	Code Course	Title	Credit Hours
1.	MATH-700	Real Analysis	3(3-0)
2.	MATH-702	Group Theory	3(3-0)
3.	MATH-703	Linear Algebra	3(3-0)
4.	MATH-705	Operations Research	3(3-0)
5.	MATH-709	Computer Programming	3(2-2)
6.	MATH-711	Ordinary Differential Equations	3(3-0)
7.	MATH-712	Numerical Analysis	3(3-0)
8.	MATH-713	Topology	3(3-0)
9.	MATH-714	Complex Analysis	3(3-0)
10.	MATH-715	Mathematical Physics	3(3-0)
11.	MATH-716	Combinatorics	3(3-0)
12.	MATH-717	Special functions	3(3-0)
13.	MATH-718	Modeling and Simulation	3(2-2)
14.	MATH-719	Special Problem	1(1-0)
15.	MATH-720	Seminar	1(1-0)
16.	MATH-721	Functional Analysis	3(3-0)
17.	MATH-722	Partial Differential Equations	3(3-0)

18.	MATH-723	Rings and Fields	3(3-0)
19.	MATH-724	Optimization	3(3-0)
20.	MATH-725	Vector and Tensor Analysis	3(3-0)
21.	MATH-726	Integral Equations and Variational Calculus	3(3-0)
22.	MATH-727	Fluid Mechanics	3(3-0)
23.	MATH-728	Analytical Dynamics	3(3-0)
24.	MATH-729	Quantum Mechanics	3(3-0)
25.	MATH-730	Differential Geometry	3(3-0)
26.	MATH-731	Special Relativity	3(3-0)
27.	MATH-732	Galois Theory	3(3-0)
28.	MATH-733	Measure Theory	3(3-0)

Minor Courses:

S. No.	Code Course	Title	Credit Hours
1.	STAT-725	Mathematical Statistics	3(3-0)
2.	STAT-726	Stochastic Processes	3(3-0)
3.	STAT-700	Elements of Statistics and Biometry	3(3-0)
4.	STAT-701	Experimental Statistics	3(3-0)
5.	STAT-712	Multivariate Analysis	3(3-0)
6.	STAT-713	Statistical Quality Control and Reliability	3(2-2)
7.	STAT-716	Survey and Research Report	4(2-4)
8.	CS-701	Programming Fundamental	4(2-4)
9.	CS-708	Discrete Structures	3(3-0)
10.	AEC-741	Mathematical Economics	3(3-0)

SEMESTER WISE DISTRIBUTION OF COURSES-MSc Maths

SEMESTER I

S.No.	Code	Course Title	Credit
1.	MATH-700	Real Analysis	3(3-0)
2.	MATH-702	Group Theory	3(3-0)
3.	MATH-703	Linear Algebra	3(3-0)
4.	MATH-711	Ordinary Differential Equations	3(3-0)
5.	STAT-700	Elements of Statistics and Biometry	3(3-0)

SEMESTER II

S.No.	Code	Course Title	Credit
1.	MATH-712	Numerical Analysis	3(3-0)
2.	MATH-713	Topology	3(3-0)
3.	MATH-714	Complex Analysis	3(3-0)
4.	MATH-715	Mathematical Physics	3(3-0)
5.	MATH-725	Vector and Tensor Analysis	3(3-0)
6.	STAT-725	Mathematical Statistics	3(3-0)

SEMESTER III

S.No.	Code	Course Title	Credit
1.	MATH-719	Special Problem	1(1-0)
2.	MATH-721	Functional Analysis	3(3-0)
3.	MATH-722	Partial Differential Equations	3(3-0)
4.	MATH-730	Differential Geometry	3(3-0)

5.	STAT-701	Experimental Statistics	3(3-0)
6.	AEC-741	Mathematical Economics	3(3-0)

SEMESTER IV

S.No.	Code	Course Title	Credit
1.	MATH-705	Operations Research	3(3-0)
2.	MATH-720	Seminar	1(1-0)
3.	MATH-723	Rings and Fields	3(3-0)
4.	MATH-727	Fluid Mechanics	3(3-0)
5.	STAT-712	Multivariate Analysis	3(3-0)
6.	CS-701	Programming Fundamental	4(2-4)
7.	CS-708	Discrete Structures	3(3-0)

20

Standard 2-1: The curriculum must be consistent and support the Program's documented objectives.

The curriculum is designed according to HEC criteria. The Curriculum also fulfilled the general requirements of the degree, it is well updated.

Standard 2-2: The curriculum supports the programs documented Objectives

The curriculum fits very well and satisfies the core requirements for the program's documented objectives.

Standard 2-3: Theoretical backgrounds, problem analysis and solution design must be stressed within the program's core material.

Currently, the department is only offering the master's degree. The requirements for the degree are briefly discussed.

The table given below shows the list of courses those are consistent with the program objectives.

Table 5: Courses versus Outcomes

Courses	Outcomes					
	1	2	3	4	5	6
MATH-700	++	++	+++	++	+++	+
MATH-702	++	++	+	+++	+	++
MATH-703	++	+++	++	++	++	+++
MATH-711	++	+	+++	++	+	+
MATH-712	++	+++	++	++	+++	++
MATH-715	++	++	++	+++	++	++
MATH-713	+++	++	++	++	++	+++
MATH-714	+++	++	+++	++	+++	++
MATH-725	++	++	++	+++	+++	++
STAT-700	++	+	+	++	++	+++
MATH-725	++	++	+	+++	+++	+++
MATH-719	+	++	++	+++	+++	++
MATH-722	++	+++	+++	+	+	++
MATH-730	+++	+	++	+++	++	+++
STAT-701	+++	++	+	+	+++	+
MATH-705	+++	+++	++	+	+	++
STAT-725	+++	+++	++	++	++	+++
MATH-720	+	++	+	+	+++	+
MATH-723	+++	+++	+	+++	++	++
MATH-727	+++	+	++	++	+++	++
STAT-712	+++	+	+++	+	++	++
MATH-724	+	+	+++	+++	+++	+++
MATH-731	+++	++	++	++	+++	+++
MATH-733	+	+++	+++	+++	+	+++
MATH-732	+	+++	+	++	+++	++
MATH-709	+++	+++	++	+	+	+++

+ = Moderately Satisfactory, ++= Satisfactory, +++ = Highly Satisfactory

Standard 2-4: The curriculum satisfied the core requirement laid down by accreditation bodies

Not Applicable

Standard 2-5: The curriculum satisfied the major requirement laid down by HEC.

The curriculum satisfies the major requirement laid down by HEC.

Standard 2-6: The curriculum satisfied the general education, arts and Professional and other discipline requirement as laid by HEC

The important courses that indicate this component are included in the curriculum and are being carried out in all the current disciplines successfully and are being taught by technically qualified teachers. These courses include:

- | | | | |
|---|----------|---|--------|
| • | STAT-726 | Stochastic Processes | 3(3-0) |
| • | STAT-700 | Elements of Statistics and Biometry | 3(3-0) |
| • | STAT-701 | Experimental Statistics | 3(3-0) |
| • | STAT-712 | Multivariate Analysis | 3(3-0) |
| • | STAT-713 | Statistical Quality Control and Reliability | 3(2-2) |
| • | STAT-716 | Survey and Research Report | 4(2-4) |
| • | CS-708 | Discrete Mathematics | 3(3-0) |
| • | STAT-725 | Mathematical Statistics | 3(3-0) |

Standard 2-7: Information technology component of the curriculum must be integrated throughout the program.

The Practical oriented information technology courses are included in the curriculum. Highly qualified teachers teach these courses and help the students to improve their computer and communication skills.

- | | | | |
|---|----------|-------------------------|--------|
| • | MATH-709 | Computer Programming | 3(2-2) |
| • | MATH-718 | Modeling and Simulation | 3(2-2) |
| • | MATH-719 | Special Problem | 1(1-0) |
| • | MATH-720 | Seminar | 1(1-0) |

These courses are practical oriented and help the students to do research not in their major subjects longer but also make them capable to do social research, communicate with the society and describe the issues faced by the people and resolve their issues.

CRITERION-3

LABORATORY AND COMPUTING FACILITIES

CITERION-3: Laboratory and Computing Facilities

A total of 06 lab support staff is available at BIMS. The Lab support staff helps teachers in conducting different labs. Their main responsibilities include the lab maintenance, availability of related software for lab etc. One lab person is available for each of the lab being arranged.

Table 6: Laboratory Facility

Size of campus in Kanals			23 Kanals					
Covered Area			13.5 Kanals (Including 4 Kanal Covered Parking)					
Sizes of lecture rooms			Class Room 22 of different sizes (Avg. 540 sft)			Seminar Hall 50 x 50 ft		
Instructional facilities provided in lecture rooms			Multimedia 16 White Board 33			Sound System 2 Overhead 3		
General computing lab facilities: total number of PCs and lab hours			Approximately 100 hours Per Day Total PCs in Labs: Approx. 250 Labs Open: 8:00 am – 8:00 pm					
Nature and level of networking			40 Mbps Internet Bandwidth - PTCL – 20 MB - Nayatel – 20 MB (Fiber Optic)					
Specialized lab facilities and hours of their availability			CISCO (Router/Switch) GIS (Plotter/Scanner)	Linux Lab Teaching Lab Project Lab The labs are open almost the whole day from 8:00 am to 8:00 pm				
Average lifetime of a PC in computing Labs			3 to 4 years					
Library information		Area	Automated	Total Books	Total Computer Books	Total Journals (Give full details)	IEEE (Give full details)	ACM (Give full details)
		3000 Sft	Automated	Approx. 10,000 In addition to university main library resources	Approx. 1,200	BIMs library subscribes journals/Magazine in different subject such as IT professional	BIMS has an access to digital library services being extended by HEC	

Computer Lab support staff:	6
Multimedia Projector Count:	16
Over Head Projectors Count:	3
Total Lab Computers:	250
Total No. of Labs:	5

The BIMS provides enough computing facilities for students in the Lab. The total numbers of computers available for students use in multiple labs are 50-55 per each lab.

A student to computer ratio mentioned in the year 2016-2018 is 1:1.

Standard 3-1: Laboratory manuals/ documentation instruction for experiments must be available and readily accessible to faculty and students

Labs/Practical's and/or software needs and requirements are already given in course outline/curriculum.

Standard 3-2: There must be adequate support personnel for instruction and maintaining the laboratories.

There is support personnel(s) to provide instruction to the students or to maintain the laboratories or facilitate in computer lab work. These labs have properly trained and technical staff to fulfill the basic needs of students.

Standard 3-3: The University computing infrastructure and facilities must be adequate to support program's objectives

i). Computing Facilities

The department is allowed to use labs and computer facilities on need basis.

ii). Multimedia

There are 90% of the total rooms in which multi-media projectors are fixed.

iii). Internet

The department has internet facility for the faculty and labs provided from main communication network of the university.

- 40 Mbps Internet Bandwidth
 - PTCL – 20 MB
 - Nayatel – 20 MB (Fiber Optic)
- 250 Computers / Laptops
- Printers (10)

CRITERION-4

STUDENT SUPPORT AND ADVISING

Criterion-4 Student Support and Advising

Although there is a disciplinary committee for students to help them at MSc level but there is no student advisory for the research students in our department. The faculty members informally provide support, advice, and mentoring. They can freely discuss their concerns with any of the staff they feel comfortable with.

Standard 4-1: Courses must have been offered with sufficient frequency and number for students to complete the program in a timely manner.

Program	Total Lectures	Practical Classes per Week	Research Guidance
MSc	32	Only for courses with lab.	Course In-charge

Standard 4-2: Course in the major must be structured to ensure effective interaction between students, faculty and teaching assistants.

The MSc is based on structured courses. The department is working to revise the curriculum to fulfill today's need of the subject.

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

In general, all faculty members provide assistance for the selection of course, about various requirements for the completion of the program and career choices. All relevant information is displayed on the departmental notice board and a copy is provided to the course supervisor. The students are regularly updated about the upcoming seminars, workshops and conferences. Some of the workshops are specially organized for them to learn new techniques or software's.

Table 7: Student to Teacher Ratio at BIMS

2014-15	2015-16	2016-17	2017-18
1:24	1:21	1:20	1:20

CRITERION-5

PROCESS CONTROL

Criterion-5: Process Control

Standard 5-1: The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

- The process of admission is well established and is followed as per the rules and criteria set by PMAS-AAUR. For this purpose, an advertisement is published in the national newspapers.
- A candidate seeking admission for Degree of Master of Science in Mathematics (MSc Mathematics) must have passed the Bachelor Degree Examination of BSc with two courses Mathematics or Mathematics with physics in aggregate with at least 50% marks from a recognized institution.
- Admission criteria are revised every year before the announcement of admission.

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.

- The student name, after completion of the admission process, is forwarded to the Registrar's office of PMAS-AAUR for proper registration in the specific program and the registration number is issued to the student.
- Registration is done in one time for each degree but evaluation is done through the result of each semester. Only those students, who fulfill the criteria of the University, are promoted to the next semester

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 institutional mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.

The recruitment policy followed by the BIMS is the same as recommended by the

PMAS- AAUR. Induction of all posts is done as per rule.

- Vacancies and newly created positions are advertised in the national newspapers, applications are received by the Human Resource Office, scrutinized by the scrutiny committee, and call letters are issued to the shortlisted candidates on the basis of experience, qualification, publications and other qualities/activities as determined by the University.
- The candidates are interviewed by the Institute Selection Board, and Principal and alternate candidates are selected.
- Selection of candidates is approved by the Syndicate for issuing orders to join within a specified period.
- Induction of new candidates depends upon the number of approved vacancies.
- The standard set by HEC/PMAS- is followed.
- At present, no procedure exists for retaining highly qualified faculty members. However, the revised pay scale structure is quite attractive.
- HEC also supports the appointment of highly qualified members as foreign faculty Professors, National Professors and deports them to the concerned institutes of the University.

Standard 5-4: The process and procedure 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.

- To provide high quality teaching, institute periodically revises the curriculum in views of field requirements, innovations and new technology.
- With the emergence of new fields, new courses are introduced and included in the curriculum.
- Students usually buy cheap Asian editions of technology books. These are also available in the University library, where documentation, copying and internet facilities are available.
- Notes are also prepared by the teachers and given to the students.
- Most of the lectures are supplemented by overheads, slides and pictures.
- All efforts are made that courses and knowledge imparted meet objectives and outcome. The progress is regularly reviewed at the staff meetings.

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 controller of examinations announces the date regarding commencement of examination. After each semester, the controller's office notifies results of the students. The evaluation procedure consists of quizzes, mid and final examinations, practical, assignments, reports, oral and technical presentations. The minimum pass marks for each course is 40% for undergraduate

CRITERION-6

FACULTY

Criterion-6 Faculty

Standard 6-1: There must be enough full-time faculty 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.

Currently there are 7 faculty members (including 5 regular and 2 visiting) in our department. Our faculty is very competent. We are offering almost all core courses and most of the optional courses are also taught at our department. Applied side is a little bit heavier in terms of number of faculty members as compared to pure side.

Table 8: Faculty Distribution by Faculty Specialization

S. No.	Name	Position	Qualification	Specialization
1	Dr. Asim Hussain	Assistant Professor	Ph.D	Mathematics
2	Mr. Asim Hafeez	Lecturer	M.Phil	Mathematics
3	Ms. Bushra Bibi	Lecturer	M.Phil	Mathematics
4	Ms. Tabinda Naz	Lecturer	M.Phil	Mathematics
5	Ms. Mufzalla Rahim	Lecturer	M.Phil	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 program for faculty development must be in place.

There is always a need to update but our course outline is a little bit outdated and does not fulfill all the present era needs. It must be revised. Also, lack of interest is shown from top management in teachers training and developments. All the teachers should be updated in terms of current mathematical trends and teaching methodology for professional development.

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

Almost all the faculty members are fully satisfied with the workload and the amount they get in the form of salary. Most of the faculty members are satisfied with the mix of research and teaching method. The faculty members are satisfied with the support they are getting from the administration regarding the research and teaching. The faculty members are satisfied with overall climate of the institute. Most of the faculty members are satisfied that the institution is utilizing their capabilities in the good way.

Table 9: Faculty Survey

No	Parameters	Dr.Asim Hussain	Mr.Asim Hafeez	Ms.Tabinda Naz	Ms.Bushra Bibi
1	Your mix of research, teaching and community service	A	A	B	B
2	The intellectual stimulations of your work.	B	B	B	B
3	Type of teaching /research you currently do.	A	B	A	B
4	Your interaction with students.	B	A	A	B
5	Cooperation you receive form colleagues.	B	B	A	B
6	The mentoring available to you.	B	B	B	B
7	Administrative support from the department.	A	A	B	B
8	Providing clarity about the faculty promotion process.	A	A	B	B
9	Your prospects for advancement and progress through ranks.	B	A	B	B

10	Salary and compensation package.	B	B	B	B
11	Job security and stability at the department.	B	A	B	B
12	Amount of time you have for yourself and family.	A	B	A	B
13	The overall climate at the department.	B	B	B	B

4	Whether the department is utilizing your experience and knowledge	B	B	A	B
15	What are the best programs / facts currently available in your department that enhance you motivation and job satisfaction	The Program and MSc math Program	Administrative Support.	MSc Math	MSc Math
16	Suggest programs/factors that could improve your motivation and job satisfaction?	It is better to offer new courses in the existing programs	More research oriented programs should be offered	More research oriented programs should be offered	More research oriented programs should be offered

A= Very Satisfied; B= Satisfied; C=Uncertain; D= Dissatisfied; E= Very Dissatisfied

CRITERION-7

INSTITUTIONAL FACILITIES

Criterion-7 Institutional Facilities

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

a) Departmental library and Internet Facility

The university faculty has access to e-library and internet which is very supportive of the faculty.

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

The institute has its own library which has computer science related books. This library also provides the book related to the latest field and the field in which currently latest results are being conducted.

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

- The office environment is comfortable to work during the summer as well as during winter.
- Classrooms have adequate size white boards that provide enough space to write.
- Multimedia projectors are available in most of the class rooms.

CRITERION-8

INSTITUTIONAL SUPPORT

Criterion-8 Institutional Support

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.

The institute currently has limited resources for the research. However the following funds are provided as financial resources to attract and retain high qualified faculty.

Endowment Fund	52 Million
Tangible Assets	40 Million
Working Capital	62 Million
Total Assets	154 Million

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

The numbers of graduates in the last two years are about 120 in M.Sc program and one batch consisting of 60 students has been passed out.

Table 10: Number of students enrolled in MSc in last few years

2013-14	2014-15	2015-16	2016-17	2017-2018
27	23	27	72	89

Student/Faculty Ratio (for the last three years)

As mentioned earlier for 108 MSc students there are 07 teachers (5 regular and 2 visiting), i.e., $108/07 = 17$ students per teacher approximately.

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

Following is the detail of the institution's budget for library holdings, laboratories, computing facilities and faculty development.

Table 11: Financial Information about the institution and the Program

LIB Holdings	Laboratories + Computer H/W	Computing (Software)	Total Assets
5M	10M	4M	19M

SUMMARY AND CONCLUSION

The Self-Assessment Report (SAR) of the Barani Institute of Management Sciences (BIMS), Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi for Degree Program Masters of Science, Mathematics (MSC Mathematics), began with an introduction of the institute followed by a detailed discussion of the MSc Mathematics degree program including its importance, the main features, objective, outcomes, measures to assess those objectives, teachers and courses evaluation.

Masters of Science in Mathematics (MSC Mathematics), is a two-year degree program, during which a variety of relevant courses are offered to the students. Visiting faculty is also hired to work in collaboration with the full-time faculty members, to balance the faculty academic load and ensure a sufficient justification and fulfillment of the teaching/training requirements. In order to maintain and promote an outstanding quality of learning, a continued assessment of the teaching and courses is conducted, throughout a semester, in accordance with the rules and regulations of the HEC.

The foundation of the curriculum designed for MSc Mathematics program is according to the market and international standards of computer education guided by the requirements defined by the Higher Education Commission of Pakistan. The curriculum includes an adequate proportion of mathematical and statistical courses to provide a complete skill package for effective professional conduct. It is further supplemented by the inclusion of a number of general courses intended to sharpen the written and oral communication proficiency of the students. Moreover, the faculty members and students are encouraged to arrange workshops and seminars as a part of their academic and practical work to further enhance their professional abilities. BIMS supports the new trends towards education such as e-learning including digital publications, journals, etc. The faculty and students have been provided with a full-time access to the e-library and internet through local area network, so that they have a ready access to many well-known journals relevant to their respective research areas. In addition, a book library is also available. While analyzing Criteria Referenced Self-Assessment, it has been observed that Institute's performance is satisfactory.

Program Team Member

Coordinator: Mr. Asim Hafeez
Convener: Ms. Tabinda Naz
Member: Ms. Bushra Bibi

ANNEXURES

ANNEXURE I: ALUMNI SURVEY

The results of the Alumni survey in tabular form are given below:

		Excellent	Very Good	Good	Fair	Poor
I	Knowledge					
1	Math, Science, Humanities and professional discipline, (if applicable)	73%	13%	10%	3%	2%
2	Problem formulation and solving skills	70%	09%	10%	7%	5%
3	Collecting and analyzing appropriate data	62%	10%	14%	10 %	5%
4	Ability to link theory to practice	52%	19%	15%	10 %	5%
5	Ability to design a system component or process	69%	10%	4%	13 %	5%
6	IT knowledge	81%	5%	4%	6%	5%
II	Communication Skills					
1	Oral communication	40%	40%	10%	5%	5%
2	Report writing	73%	10%	08%	5%	5%
3	Presentation skills	57%	18%	11%	10 %	5%
III	Interpersonal Skills					
1	Ability to work in teams.	69%	17%	5%	5%	5%
2	Ability to work in arduous/Challenging situation	72%	10%	10%	4%	5%
3	Independent thinking	48%	31%	12%	5%	5%
4	Appreciation of ethical Values	78%	10%	4%	4%	5%
IV	Management/Leadership Skills					

1	Resource and Time management skills	49%	32%	10%	5%	5%
2	Judgment	51%	24%	15%	5%	5%
3	Discipline	72%	10%	9%	5%	5%
V	General Comments					
VI	Career Opportunities					
VI I	Department Status					
1	Infrastructure	66%	18%	11%	6%	0%
2	Faculty	70%	25%	7%	0%	0%
3	Repute at national level	58%	35%	6%	0%	0%
4	Repute at International level	12%	45%	15%	5%	24%

ANNEXURE II: GRADUATING STUDENTS SURVEY

The results of Graduating Student Survey in table form are given below:

		Very Satisfied	Satisfied	Uncertain	Dissatisfied	Very Dissatisfied
1	The work in the program is too heavy and induces a lot of pressure.	59%	30%	5%	4%	3%
2	The program is effective in enhancing team-work abilities.	56%	34%	0%	6%	4%
3	The program administration is effective in supportive learning	38%	35%	14%	4%	9%
4	The program is effective in developing analytical and problem-solving skills.	42%	39%	10%	4%	4%
5	The program is effective in developing independent thinking.	51%	20%	17%	4%	8%
6	The program is effective in developing written communication skills.	49%	35%	12%	0%	4%
7	The program is effective in developing planning abilities.	44%	35%	3%	9%	9%

8	The objectives of the program have been fully achieved.	44%	37%	10%	4%	4%
9	Whether the contents of the curriculum are advanced and meet program objectives.	39%	36%	12%	4%	9%
10	The faculty was able to meet the program objectives.	45%	29%	10%	11%	4%
11	The environment was conducive for learning	31%	30%	21%	4%	13%
12	Whether the infrastructure of the department was good	32%	18%	33%	12%	4%
13	Whether the program was comprised of Co-curricular and extra-curricular activities	26%	17%	31%	17%	9%
14	Whether scholarships/grants were available to students in case of hardship.	68%	20%	8%	4%	0%

ANNEXURE III: EMPLOYER SURVEY

The results of Employer Survey in tabular form are given below:

		Excellent	Very Good	Good	Fair	Poor
I	Knowledge					
1	Math, Science, Humanities and professional discipline, (if applicable)	59%	23%	12%	3%	3%
2	Problem formulation and solving skills	52%	29%	6%	9%	3%
3	Collecting and analyzing appropriate data	47%	26%	19%	3%	6%
4	Ability to link theory to practice	39%	33%	17%	11%	0%

5	Ability to design a system component or process	45%	32%	9%	9%	5%
6	Computer knowledge	67%	9%	6%	9%	9%
II	Communication Skills					
1	Oral communication	36%	30%	18%	12%	3%
2	Report writing	39%	26%	17%	4%	13%
3	Presentation skills	39%	29%	17%	3%	12%
III	Interpersonal Skills					
1	Ability to work in teams.	48%	19%	31%	4%	0%
2	Leadership	32%	34%	21%	0%	12%
3	Independent thinking	38%	51%	12%	0%	0%
4	Motivation	41%	31%	12%	9%	8%
5	Reliability	42%	32%	0%	5%	21%
6	Appreciation of ethical values	47%	13%	17%	12%	13%
IV	Work Skills					
1	Time management skills	39%	50%	8%	5%	0%
2	Judgment	40%	29%	15%	12%	3%
3	Discipline	31%	44%	22%	3%	0%

Performa 9: FACULTY RESUME

Name:	Muhammad Asim Hafeez
Personal:	Department of Mathematics, Barani Institute of Management Sciences, Rawalpindi Affiliated with Pir Mehr Ali Shah Arid Agriculture, University Rawalpindi, Pakistan. asim_hafeez2008@yahoo.com 0333-5547285
Experience:	8 years
Honors and Awards	Nil
Memberships	QEC member, Admission Committee member, Department of Mathematics, Barani Institute of Management Sciences, Rawalpindi
Graduate Students	Nil
Postdocs	
Undergraduate Students	
Honor Students	
Service Activity	Teaching
Brief Statement of Research Interest	➤ Numerical Analysis ➤ Vector and Tensor Analysis ➤ Fluid Mechanics ➤ Operations Research
Publications	Nil
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above

Name:	Miss Tabinda Naz
Personal:	Department of Mathematics, Barani Institute of Management Sciences, Rawalpindi Affiliated with Pir Mehr Ali Shah Arid Agriculture, University Rawalpindi, Pakistan. tabi_naz2003@yahoo.com 0333-5342610
Experience:	8 years
Honors and Awards	Nil
Memberships	QEC member, Department of Mathematics, Barani Institute of Management Sciences, Rawalpindi
Graduate Students Postdocs Undergraduate Students Honor Students	Nil
Service Activity	Teaching
Brief Statement of Research Interest	➤ Complex Analysis ➤ Fluid Dynamics ➤ Differential Equations
Publications	Nil
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above
Selected Professional Presentations	-

Name:	Miss Bushra Bibi
Personal:	bablomaths@gmail.com 0306-5699359
Experience:	4 years
Honors and Awards	Nil
Memberships	QEC member, Department of Mathematics Barani Institute of Management Sciences RWP.
Graduate Students Postdocs Undergraduate Students Honor Students	Nil
Service Activity	Teaching
Brief Statement of Research Interest	➤ Fluid Mechanics ➤ Differential Equations ➤ Classical and Relativistic Plasmas
Publications	Nil
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above
Selected Professional Presentations	-

Name:	Miss Mufzala Raheem
Personal:	mofisatti@gmail.com 0320-5342774
Experience:	5 years
Honors and Awards	Nil
Memberships	Nil
Graduate Students Postdocs Undergraduate Students Honor Students	Nil
Service Activity	Teaching
Brief Statement of Research Interest	➤ Statistics and probability ➤ Multivariate Analysis ➤ Mathematical Statistics
Publications	Nil
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above
Selected Professional Presentations	-

ANNEXURE IV: FACULTY COURSE REVIEW REPORT

Faculty course review report for the courses those have been evaluated either in Teacher evaluation or in Student course evaluation.

Performa 2

Faculty Course Review Report

(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline



Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	MTH-700	Title:	Real Analysis		
Session:	2018	Semester:	Fall		
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	none
Name Of Course Instructor:	Dr.Asim Hussain	No. of Students Contact Hours2 hours daily	Lectures(3 hours) Labs (N/A)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)	Quizzes, Assignment, Mid Term, Final term				

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students	65	7.46	14.93	17.91	25.37	26.87	26.87		4	
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students	15	2.43	6.09	29.27	20.7		34.15		9	

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: **Dr. Asim Hussain** Date _____
 (Course Instructor)
 Name: **Dr. Hafeez Ur Rehman** Date _____
 (Director)

Performa 2

Faculty Course Review Report

(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline



Department:	Management Sciences		Faculty:	Barani Institute of Management Sciences		
Course Code	MTH-702	Title:	Group Theory			
Session:	2018	Semester:	Spring			
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	none	
Name Of Course Instructor:	Ms. Tabinda	No. of Students Contact Hours	Lectures (3 hours) Labs (N/A)	3(3-0)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		Quizzes, Assignment, Mid Term, Final term				

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	15	14.19	37.78	24.49	14.29	8.16				
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students	15	3.846%	5.769%	34.62%	9.615%			46.15%		

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: **Ms. Tabinda** Date _____

(Course Instructor)

Name: **Dr. Hafeez Ur Rahman** Date _____

(Director)



Performa 2

Faculty Course Review Report

(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline

Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	MTH-703	Title:	Linear Algebra		
Session:	2018	Semester:	Fall		
Credit Value:	3(3-0)	Level:	MBA	Prerequisites:	none
Name Of Course Instructor:	Ms Bushra	No. of Students Contact Hours	Lectures (3 hours) Labs (N/A)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		Quizzes, Assignment, Mid Term, Final term			

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	13	0	23.08	61.54	7.692		7.692			26
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students	13									

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Ms Bushra Date _____

(Course Instructor)

Name: Dr. Hafeez Ur Rahman Date _____

(Director)

Performa 2

Faculty Course Review Report



(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline

Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	MTH-705	Title:	Operations Research		
Session:	2017	Semester:	Spring		
Credit Value	3(3-0)	Level:	MSC Math	Prerequisites:	None
Name of Course Instructor	Mr. Asim Hafeez	No. of Students Contact Hours	Lectures (3 hours) Labs (1.5 hours)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		Quizzes, Assignment, Mid Term, Final term			

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	15	6.81	36.36	31.82	15.91		6.81			
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students	15									

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Mr.Asim Hafeez Date _____

(Course Instructor)

Name: Dr. Hafeez UR Rahman Date _____

(Director)

Performa 2

Faculty Course Review Report



(To be filed by each teacher at the time of Course Completion)

For completion of the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline

Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	MTH-709	Title:	Computer Programming		
Session:	2016	Semester:	Spring		
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	none
Name Of Course Instructor:	Ms. Tabinda	No. of Students Contact Hours	Lectures (3 hours) Labs (N/A)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc)		Quizzes, Assignment, Mid Term, Final term			

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	16	29.3	34	17	7.3		2.4			
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students	16									

Overview /Evaluation (Course Co-Coordinator's Comments)Feedback: first Summarize, then comment feedback received form:(These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Ms. Tabinda Date (Course Instructor)

Name: Dr. Hafeez Ur Rahman Date _____
(Director)

Performa 2

Faculty Course Review Report

(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline



Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences		
Course Code	MTH-719	Title:	Special Problem			
Session:	2018	Semester:	Spring			
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	NA	
Name Of Course Instructor:	Ms .Bushra	No. of Students Contact Hours (02 hours)	Lectures (03 hours) Labs (N/A)			
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		Quizzes, Assignment, Mid Term, Final term				

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	49	0	17	78	0	3				

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students										

Feedback: first Summarize, then comment feedback received form: (These boxes will expand as you type in your answer.)

- Name: Ms .Bushra Date _____
(Course Instructor)
- Name: Dr. Hafeez Ur Rehman Date _____
(Director)

Performa 2

Faculty Course Review Report

(To be filed by each teacher at the time of Course Completion)

For completion of the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline



Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	MTH-720	Title:	Seminar		
Session:	2016	Semester:	Spring		
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	None
Name Of Course Instructor:	Mr.Asim Hafeez	No. of Students	Lectures hours (03 hours) Labs (N/A)	Contact Hours (02 hours)	
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc)		Quizzes, Assignment, Mid Term, Final term			

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	15	2	9	10	6		9			36

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students										

Overview /Evaluation (Course Co-Coordinator's Comments)Feedback: first Summarize, then comment feedback received form:(These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Mr.Asim Hafeez _ Date _____

(Course Instructor)

Name: Dr. Hafeez Ur Rehman Date _____

(Director General)

Performa 2

Faculty Course Review Report



(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline

Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	MTH-721	Title:	Functional Analysis		
Session:	2016	Semester:	Fall		
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	None
Name Of Course Instructor:	Mr.Asim Hafeez	No. of Students Contact Hours(2 hours)	Lectures (3 hours) Labs (N/A)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		Quizzes, Assignment, Mid Term, Final term			

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	49	14.19	37.78	24.49	14.29	8.16				
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

No. of Students	15	6.9(3)	18.6(8)	25.58(11)	13.95(6)		34.88(15)		43
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Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Mr.Asim Hafeez Date _____
(Course Instructor)
Name: Dr. Hafeez Ur Rahman Date _____
(Director)

Performa 2

Faculty Course Review Report



(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline

Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences	
Course Code	STAT-701	Title:	Experimental statistic		
Session:	2018	Semester:	Spring		
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	None
Name Of Course Instructor:	Ms.Mufz ala	No. of Students Contact Hours (2 hours)	Lectures (3 hours) Labs (N/A)		
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		Quizzes, Assignment, Mid Term, Final term			

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	30	70	23	3.228	0	0	0	-	-	30
Post Graduate	Originally Registered	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No. of Students										

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received
form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Ms.Mufzala Date _____

(Course Instructor)

Name: Dr. Hafeez Ur Rahman Date _____

(Director)

Performa 2

Faculty Course Review Report



(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline

Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences		
Course Code	STAT-712	Title:	Multivariate Analysis			
Session:	2016	Semester:	Fall			
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	None	
Name Of Course Instructor:	Ms.Muf zala	No. of Students Contact Hours (2 hours)	Lectures (3 hours)			
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		• Assignments will be submitted on time. There will be 4% per hour deduction on late assignment submission • Copying/Cheating whole or part of the assignment from anywhere without proper credit/references will not be tolerated. Whether you have copied or your work has been copied by someone else, you will get zero marks in that assignment. • Semester Projects shall be allocated by the instructor in first week of the course. Please decide your group members (atmost 3 members)				

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	33	24.24	27.27	21.21	6.06		21.21	Nil		33
No. of Students										

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received

form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Ms.Mufzala Date _____

(Course Instructor)

Name: Dr. Hafeez Ur Rahman Date _____

(Director)

Performa 2

Faculty Course Review Report

(To be filed by each teacher at the time of Course Completion)

For completion by the course instructor and transmission to Head of Department of his/her nominee (Dept. Quality Officer) together with copies of the Course Syllabus outline



Department:	Humanities and Sciences		Faculty:	Barani Institute of Management Sciences		
Course Code	MTH-722	Title:	Partial Differential Equation			
Session:	2017	Semester:	Spring			
Credit Value:	3(3-0)	Level:	MSC Math	Prerequisites:	None	
Name Of Course Instructor:	Ms .Bushra	No. of Students Contact Hours (2 hours)	Lectures (2 hours) Labs (N/A)			
Assessment Methods: Give precise details (no & length of assignments, exams weightings, etc.)		• Assignments will be submitted on time. There will be 4% per hour deduction on late assignment submission • Copying/Cheating whole or part of the assignment from anywhere without proper credit/references will not be tolerated. Whether you have copied or your work has been copied by someone else, you will get zero marks in that assignment. • Semester Projects shall be allocated by the instructor in first week of the course. Please decide your group members (atmost 3 members)				

Distribution of Grade/ Marks and other Outcomes (adopt the grading system as required)

Undergraduate	Originally	%Grade A	%Grade B	%Grade C	D	E	F	No Grade	Withdrawal	Total
No Of Students	43	4.54	20.45	34.09	18.18		18.18	Nil		43

Overview /Evaluation (Course Co-Coordinator's Comments)

Feedback: first Summarize, then comment feedback received

form: (These boxes will expand as you type in your answer.)

- 1) Student (Course Evaluation) Questionnaires
- 2) External Examiners or Moderators (if any)
- 3) Student/Staff Consultative Committee (SSCC) or equivalent, (if any)
- 4) Curriculum: comments on the continuing appropriateness of the Course curriculum in relation to the intended learning outcomes (course objectives) and its compliance with the HEC Approved/Revised National Curriculum Guidelines. The course curriculum is in accordance with HEC approved guidelines
- 5) Assessment: comment on the continuing effectiveness of method(s) of assessment in relation to the intended learning outcomes (Course Objectives)
- 6) Enhancement: comment on the implementation of changes proposed in earlier Faculty Course Review Reports
- 7) Outline any changes in the future delivery or structure of the Course that this semester/term's experience may prompt.

Name: Ms .Bushra Bibi Date : _____
(Course Instructor)
Name: Dr. Hafeez Ur Rahman Date _____
(Director)