

PIR MEHR ALI SHAH
ARID AGRICULTURE UNIVERSITY
RAWALPINDI



SELF ASSESSMENT REPORT 7TH CYCLE (2018-20)

Department of Mathematics and Statistics

M.Sc Statistics

Program Team:

Dr. Muhammad Hanif Professor	(Convener)
Dr. Saadia Masood Associate Professor	(Member)
Mr.Nasir Jamal Assistant Professor	(Member)
Dr.Mursala Khan Assistant Professor	(Member)
Dr. Nasir Ali Lecturer	(Member)
Ms. Faryal Lecturer	(Member)

INTRODUCTION

The program started functioning in Agriculture in 1996. It reveals sound output that almost all the post-graduates got jobs in various organizations (provincial departments, universities, research organizations, banks, and private firms).

It has produced eminent Statisticians serving the country in different capacities. The Statistics program is designed to provide the necessary skills to understand Statistical problems. With the latest developments in the field of Statistics, the department regularly revises and updates its curriculum.

This Self Assessment Report (SAR) is based on eight criteria. The first criterion outlines the program's mission and objectives. Criterion 2 provides information about curriculum development. Criterion 3 enlists the computer labs and other relevant information. The fourth criterion is pertinent to the information about students' support and advice. The last four standards provide information about process control, faculty characteristics, and institutional.

- The program provides a variety of courses and research programs to enhance students' professional training and career opportunity in the field of statistics and many other disciplines. Because of its practical nature, the science of statistics has found its use in many different areas and sciences, such as economics, sociology, biological sciences, etc.
- It consists of 5 full-time academic staff members, and the program provides expertise in various activities, including research, teaching, and consulting.
- The program encompasses a broad range of research interests, supporting a variety of options for postgraduate research.
- Undergraduate courses and a range of Master's Courses are available, designed to take advantage of the demands of the modern statistical workplace.
- The current strength of students in the M.Sc. program is 140.
- For the current semester, the program is offering **85** credit hours. Each teacher takes approximately 19 to 20 credit hours and 15 credit hours around.

The program has set up a Computer Lab. The Statistical packages (Like SPSS, Minitab, E.Views, Stata, and R-Language, etc.) are also available on some PCs of this Laboratory.

Future Plans:

- A Ph.D. in statistics is the Highest degree and is the need of the day. Students are working in public and private sectors like education, provincial and federal bureaus of Statistics, the State bank of Pakistan, the Agriculture census, NADRA, etc. with the availability of more Ph.D. teachers, the program will flourish.

- To establish a Data Analysis Centre, where we can offer specific & need based courses for the persons in and outside the university.

Components of Self-Assessment Process: This Self Assessment has been prepared based on the following eight criteria described in the Self-Assessment Manual.

Criterion-1: PROGRAM --MISSION, OBJECTIVES AND OUTCOMES

Mission Statements of the program:

To teach and instruct students not only in the discipline of Statistics but also to educate students in the tools of descriptive and inferential statistics. To equip the students not only at graduate and post-graduate levels and in the discipline of statistics but in other disciplines with essential skills required for the betterment of Pakistan by using statistics, such as collecting, analyzing, and interpreting data and drawing inferences from them.

Objectives:

The program's objective is to apply statistics to all disciplines in practical life, like Experimental Designs, Sampling Techniques, Multivariate Techniques, Estimation and Testing of Hypotheses, Econometrics, Statistical Quality Control, Probability, etc. It makes a milestone for all agricultural disciplines. The program aims to offer primary and applied education to students at all levels of study in all specialized fields.

Standards:

Standards 1-1: The program must have documented measurable objectives to support Faculty/College and institution mission statements

The main objectives are:

- To flourish the program on modern lines by hiring highly qualified teaching faculty.
- To create a healthy research environment both for students and teachers.
- To make students realize the importance of proper knowledge.

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

- Fully facility of internet and computer to all students for the healthy environment for high quality research.
- By hiring highly qualified teachers

- To enlighten the true importance of knowledge to students to become productive citizens.

PROGRAMME OBJECTIVES ASSESSMENT

Table 1: Program Objective Assessment

Sr. #	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	The flourishing of the program on modern lines	By collecting students opinions through surveys.	Throughout the semester.	Active participation of teachers in seminars and workshops.	By hiring highly qualified faculty.
2	Healthy research environment.	Creating interest of students in research by study of different fields generals and research papers	Throughout the semester.	To motivate students for research and for giving presentations and seminars.	Presentations seminars, Communication skill development
3	Importance of true knowledge.	After having feedback through seminars, quizzes and by teachers' personal interest.	Throughout the semester.	Extra circular activities will help in this regard.	Emphasizing on true knowledge by the teacher

PROGRAMME LEARNING OUTCOMES

All the students in Statistics possess the ability of

1. Develop practical communication skills through presentations, oral discussions, and surveys.
2. Curriculum design based upon identification of problems and new analytical, classical, and probabilistic techniques.

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

1. To Produce True Researchers and Professionally Skilled Students:

The foremost aim of the program is to produce students who are skillful in applying their statistical knowledge and computational techniques in practical situations.

2. To Improve the Basic Knowledge and Strengthen the Foundation:

To improve and modernize the students' basic and applied knowledge and skills in a relevant field by employing advanced analytical tools, techniques, and equipments and to strengthen the foundation in statistical sciences.

3. To Make Statistics a Viable science for Other Disciplines:

To minimize the distances between statistics and other sciences with advanced techniques and updated research.

4. Encouraging the Students to Conduct Research in Practical Areas:

The most important thing is to develop a culture of research in teachers and students, not only from the field of statistics but from all the other disciplines, and to motivate them to pursue proper knowledge.

Train and supervise the students while studying and conducting research in practical and economically thematic areas. To strengthen and streamline the department by integrating knowledge in related fields like Mathematics and Economics.

Main elements of strategic plan to achieve mission and objectives

1. A wide variety of the program's core and elective subjects help the students gain a professionally sound and gifted education. A practical and valuable teaching system based on experience and vision gathered from world reviews, literature, innovative proceedings, symposia, workshops, etc., is applied, especially in the initial semesters. The workload should be divided carefully.
2. Increased study tours are helpful in giving an idea of the subject's practical applications. By updating the curriculum by including more applied and professional content. The students are already being offered many courses from other disciplines to have a broader knowledge perspective, e.g., Survey and Research, Computational Analysis, etc.

Table: 2 Program Objectives and Outcomes

Program Objectives	1	2
1	× × × ×	× ×
2	× × × ×	× × × ×
3	× ×	× × × ×

The cells with the sign × × × × shows the achievement of that particular program objective with **highly relevant highly satisfactory level**.

× × × shows **very relevant and satisfactory**

× × shows **relevant and satisfactory**

× shows **relevant**

Outcomes are based on actual data.

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

Following actions have been taken on the basis of program assessment results.

Actions taken based on the Results of Program Assessment

- The main strength of this program is the availability of highly qualified teachers with the full acquaintance of their respective subjects. As mentioned before, half of the faculty members are on their study leaves, completing their Ph.D. degrees and improving their qualifications.
- The curricula are being updated by including more applied and professionally sound courses.
- Different assessment questionnaires and surveys play a significant role in identifying and removing weaknesses detected in the teaching methodologies.

Skills and Capabilities Reflected in performance as Statisticians:

- Students develop the ability to apply knowledge of Statistics and to work as professionals, build confidence and communicate effectively in writing, oral, and demonstration by using modern tools, techniques, and skills for their profession. To formulate and design the experiments and to work effectively in a team, to manage Data Analysis problems, and improve the ability to recognize future needs.

Major Future Improvement Plans

- Overall enhancement of knowledge and skills of faculty members concerning the latest global advancements in the discipline is going on through different Ph.D. research programs and collaborative research projects within Pakistan. Most of the teachers in the department are busy improving their qualifications.
- To increase the number of faculty members by employing highly qualified teachers and researchers.
- To provide a quality education through audio-visual aids and modern tools along with providing the latest literature, journals, books, reviews, and access to the internet.

Standard 1-4: The program must assess its overall performance periodically using quantifiable measure

Table 3: Quantitative Assessment of the Department (Last Two Years)

Sr. #	Particular	No	Remarks
1.	M. Sc. Degree awarded	140	Mostly got employment and currently holding various positions.
2.	Students : Faculty ratio	1:4	Does not fulfill HEC criteria
3.	Technical : Non Technical ratio	1:2	Fulfills HEC criteria
4.	Research activities, short courses, workshops and seminars		Seminar, Special Problem

Table 3 contains information about any research done by the students by report writing through particular problems and seminars. In 4th semester, the students of M.Sc have to study the courses of research and seminar each of one credit hour. They complete the research work and submit the project reports.

The evaluation process indicated the high efficiency of the system and the satisfactory impact of outcomes. Almost all the graduates and post-graduates got jobs in various organizations (provincial departments, universities, research organizations, banks, and private firms.).

Table 5: Degree Requirements

Degree	Pre-requisites
M.Sc.	B.Sc. with 45% marks from a recognized intuition.

Program Assessment Results:

The program assessment results by the SAR results are presented in Annexure II (summarized in Tables and Figures). The overall effect, however, shows that the students are satisfied with the Programmed method of teaching as well as delivery (See Annexures II & III).

Many surveys based on the SAR questionnaires were initiated to evaluate the Program outcomes/graduates of the department; since most of the Statistics graduates enter research institutes and universities, questionnaires were sent to them for their feedback. Maximum students filled out the survey forms.

The evaluation process indicated the high efficiency of the system and the satisfactory impact of outcomes. The following are evaluation survey reports of different semesters (2018-2020), which the students evaluate.

Program Assessment Results

Fall 2018-19

According to the Performa 1 and Performa 10, the teachers have been evaluated by the students for the semester Fall 2018-19.

1. Dr. Muhammad Hanif
2. Dr. Saadia Masood
3. Mr. Nasir Jamal

Performa 1 titled **Student Course Evaluation.**

Performa 10 titled **Teacher Course Evaluation.**

Individual statements of the Performa's are also summarized in the following Figures.



Pir Mehr Ali Shah
Arid Agriculture University

Print Date: Dec. 19, 2022

Performa 1

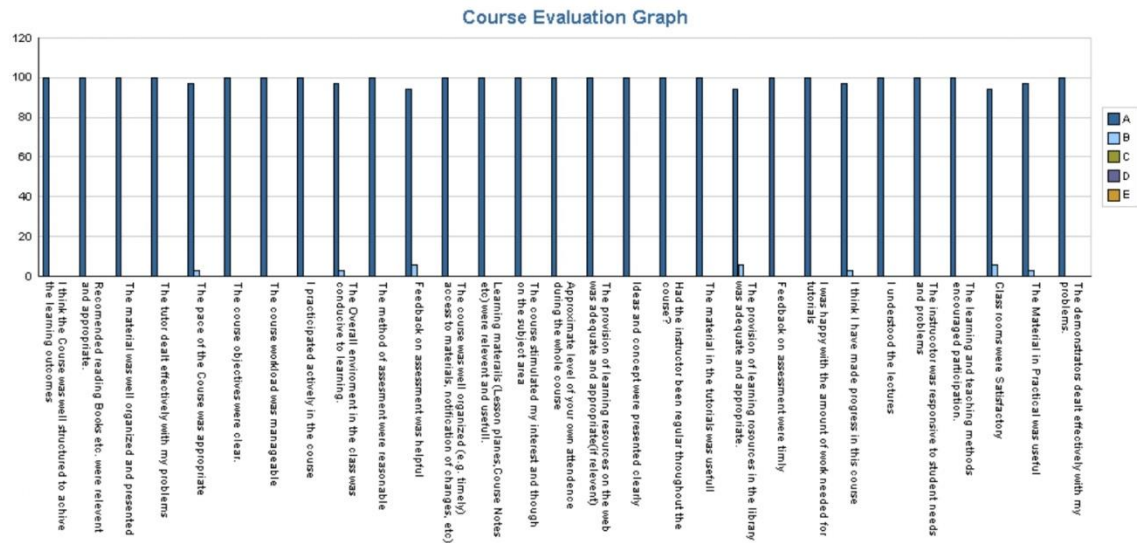
Session Name: FALL-18

Teacher Name: Muhammad Hanif

Course Name: Probability-I

Section: A M/E: M Semester# 1

Class: M.Sc (Statistics)



The data has collected from 40 students of M.Sc. Statistics about 95% were strongly agreed and 5% agreed about the course organization.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

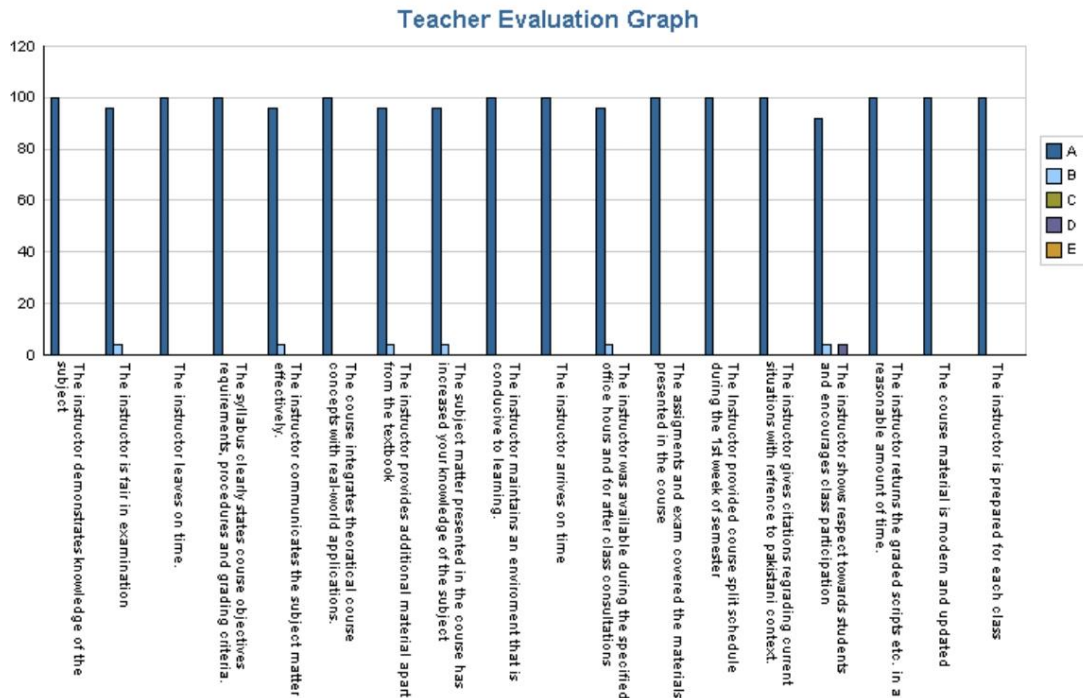
Print Date: Dec. 19, 2022

Session Name: FALL-18

Teacher Name: Muhammad Hanif

Course Name: Probability-I

Section: A M/E: M Semester#: 1



Data is collected from 40 students of M.Sc. Statistics about 95% were strongly agreed 5% agreed, 2% were fair about the teaching method.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-18

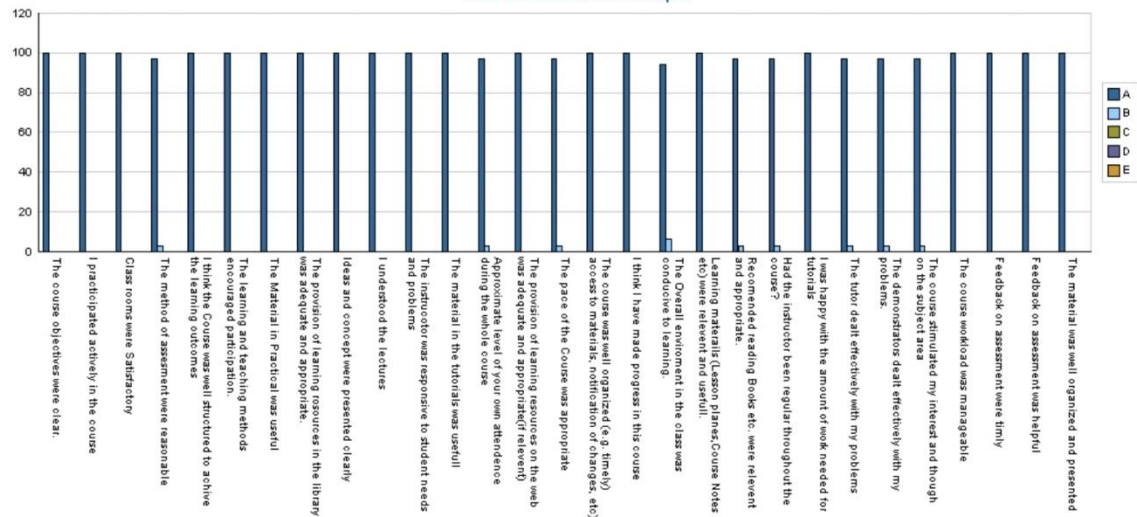
Teacher Name: Saadia Masood

Course Name: Statistical Methods

Section: A M/E: M Semester# 1

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 96% were strongly agreed 4% agreed about the course organization.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

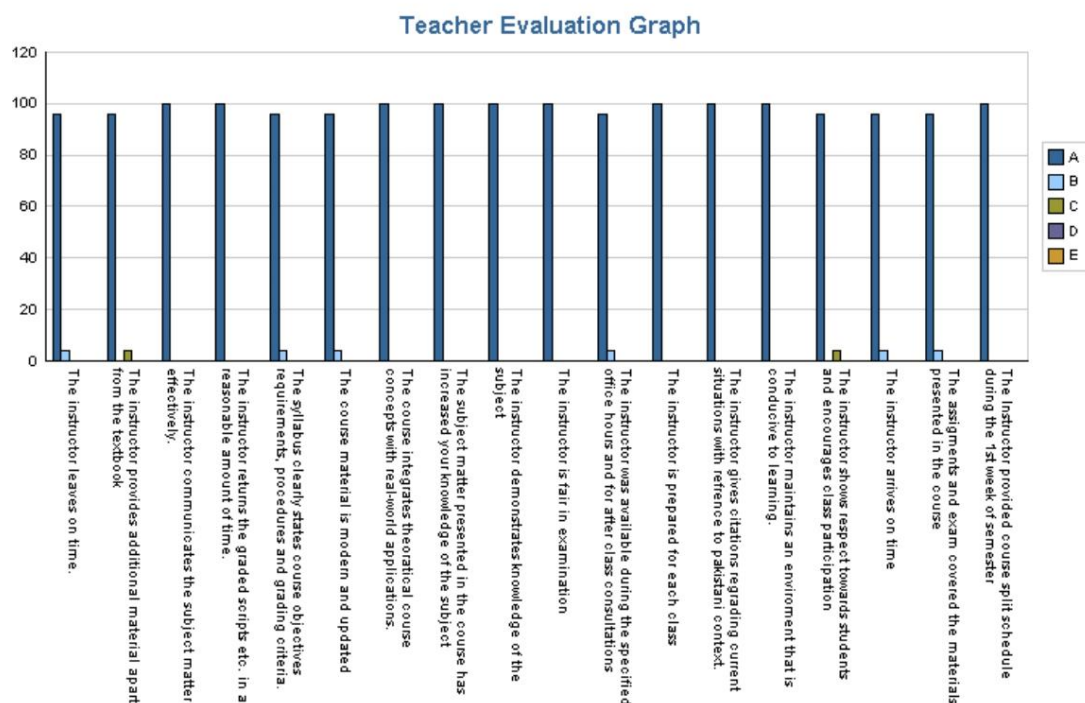
Print Date: Dec. 19, 2022

Session Name: FALL-18

Teacher Name: Saadia Masood

Course Name: Statistical Methods

Section: A M/E: M Semester#: 1



Data is collected from 40 students of M.Sc. Statistics. About 95% were excellent 4% good and 1% appropriate regarding the questions that preparation for each class and delivery of lecture and examination was fair.



Pir Mehr Ali Shah
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Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-18

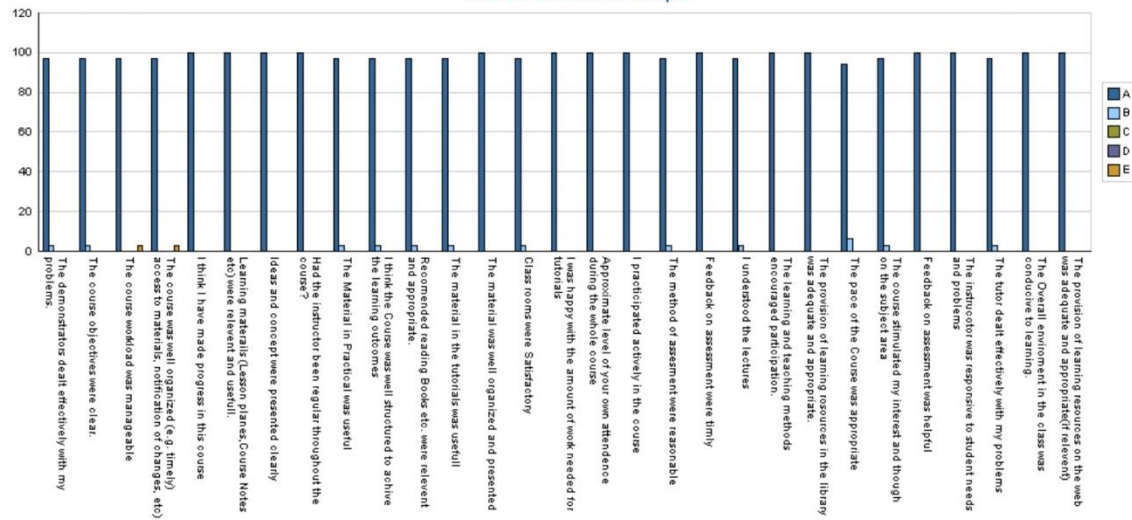
Teacher Name: Nasir Jamal

Course Name: Sampling Techniques-I

Section: A M/E: M Semester# 1

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 98% were strongly agreed and 2% were disagree about the course organization and simulation of interest.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

Print Date: Dec. 19, 2022

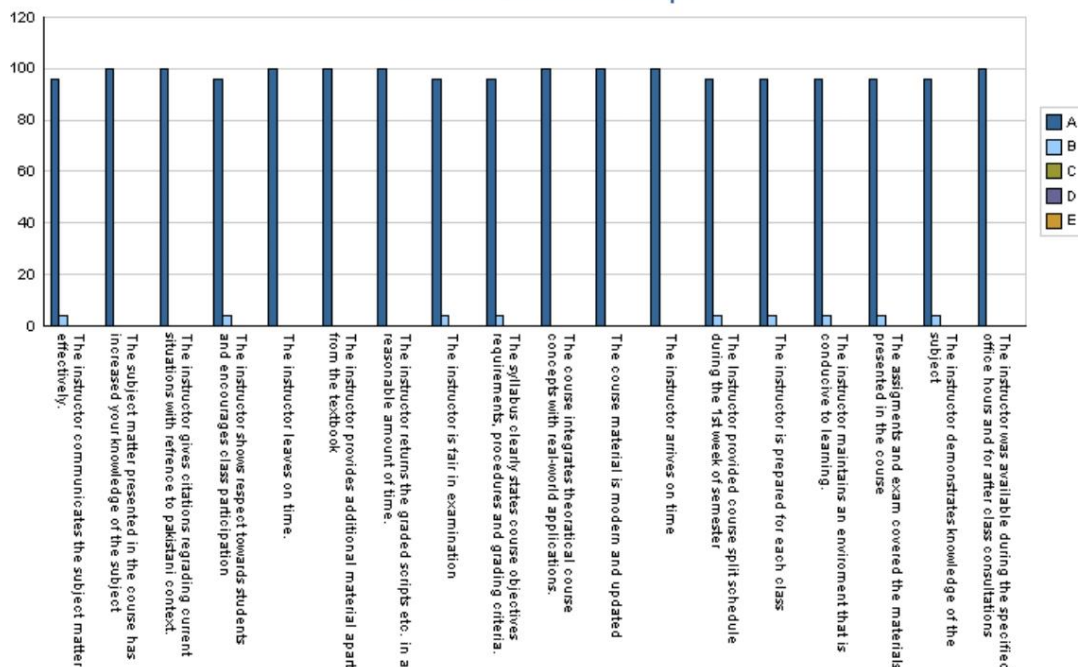
Session Name: FALL-18

Teacher Name: Nasir Jamal

Course Name: Sampling Techniques-I

Section: A M/E: M Semester#: 1

Teacher Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics. About 96% were excellent and 4% good regarding the questions that preparation for each class and delivery of lecture and examination was fair.



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Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-18

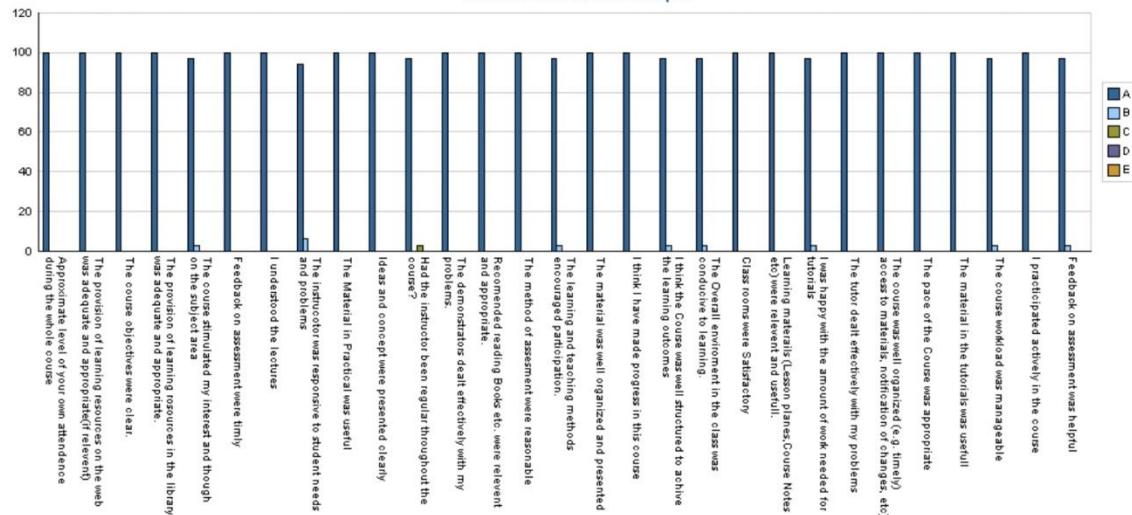
Teacher Name: Nasir Ali

Course Name: Experimental Design-I

Section: A M/E: M Semester# 1

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 96% were strongly agreed and 4% agreed about the course organization and simulation of interest.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

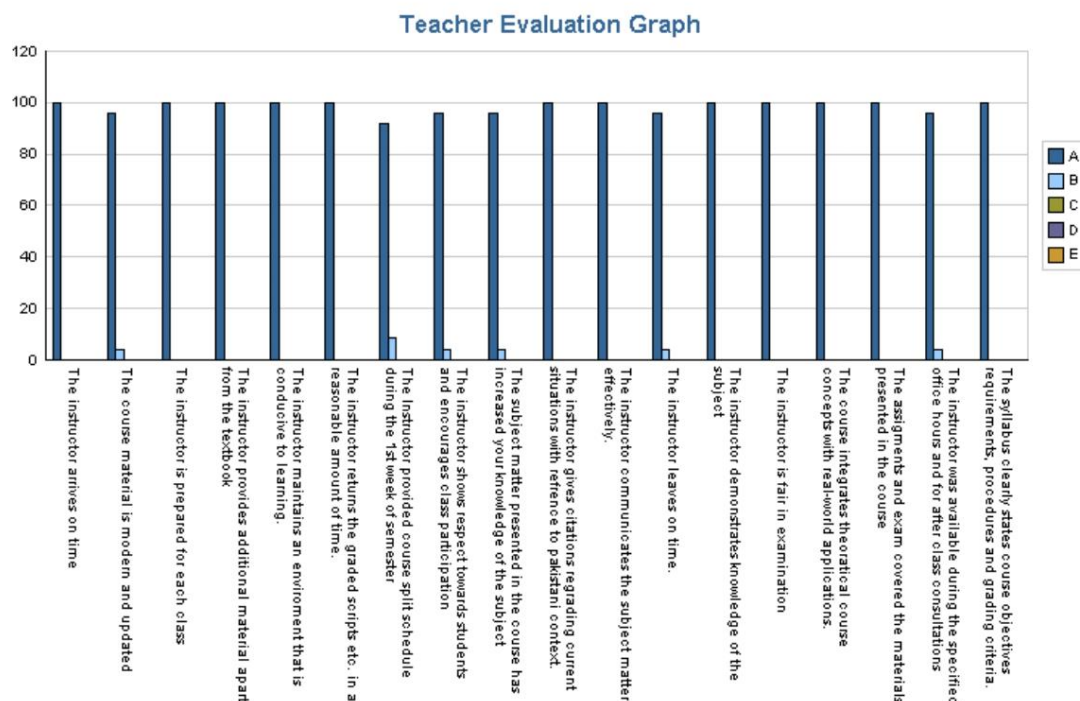
Print Date: Dec. 19, 2022

Session Name: FALL-18

Teacher Name: Nasir Ali

Course Name: Experimental Design-I

Section: A M/E: M Semester#: 1



Data is collected from 40 students of M.Sc. Statistics. About 95% were excellent and 5% good regarding the questions that preparation for each class and delivery of lecture and examination was fair.



Pir Mehr Ali Shah
Arid Agriculture University
Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-18

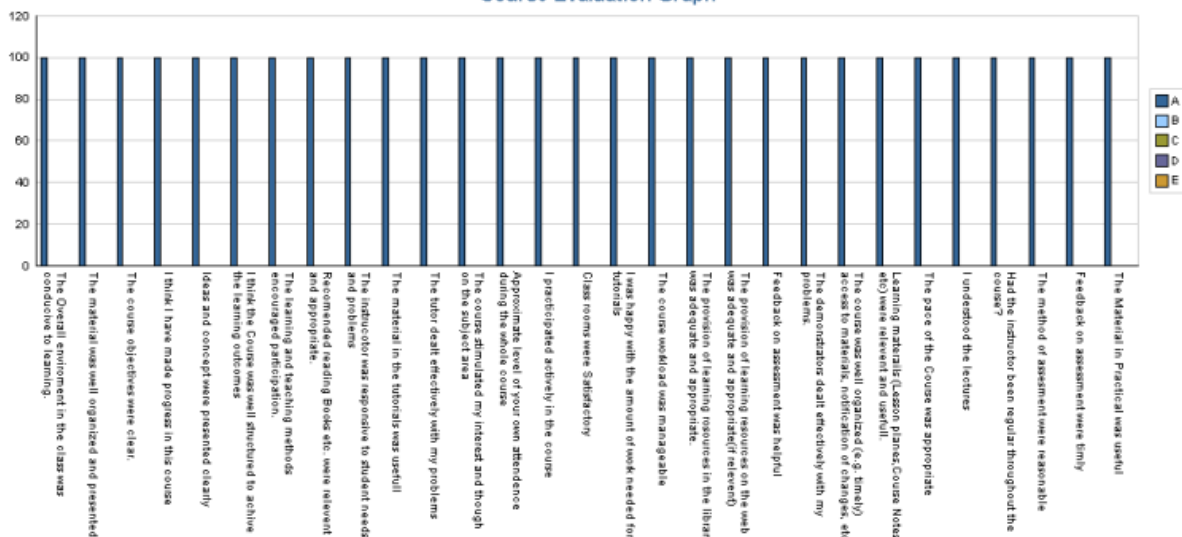
Teacher Name: Muhammad Hanif

Course Name: Statistical Methods

Section: A M/E: E Semester# 1

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



Pir Mehr Ali Shah
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Performa 10

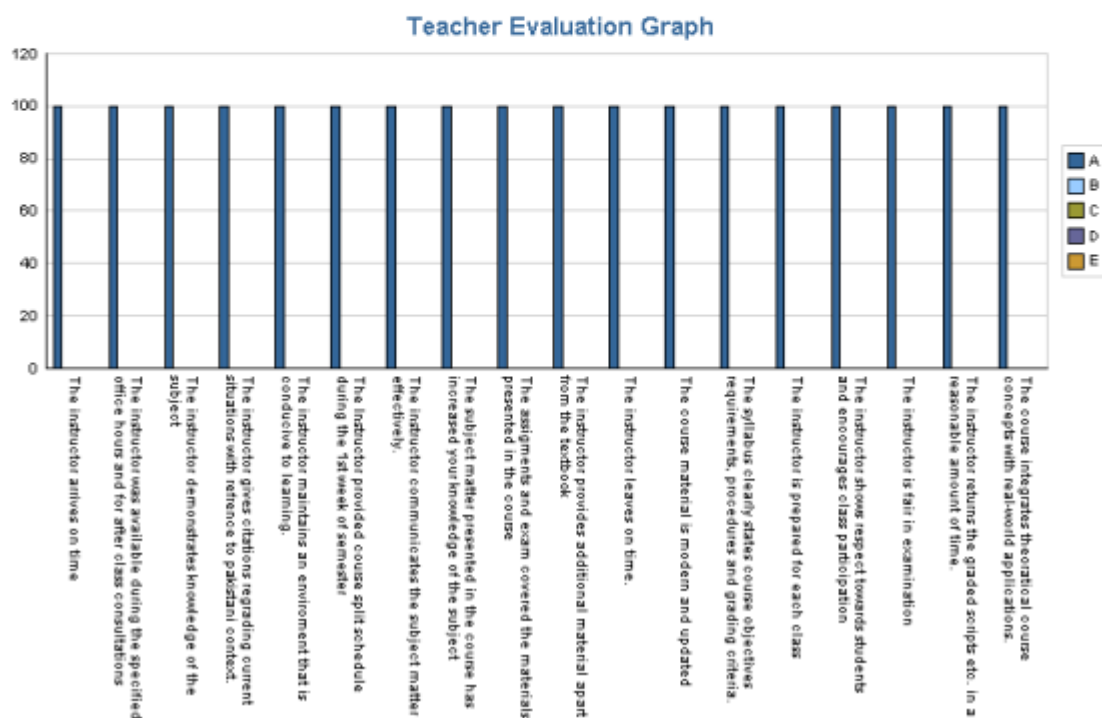
Print Date: Dec. 20, 2022

Session Name: FALL-18

Teacher Name: Muhammad Hanif

Course Name: Statistical Methods

Section: A **M/E:** E **Semester#:** 1



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



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Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-18

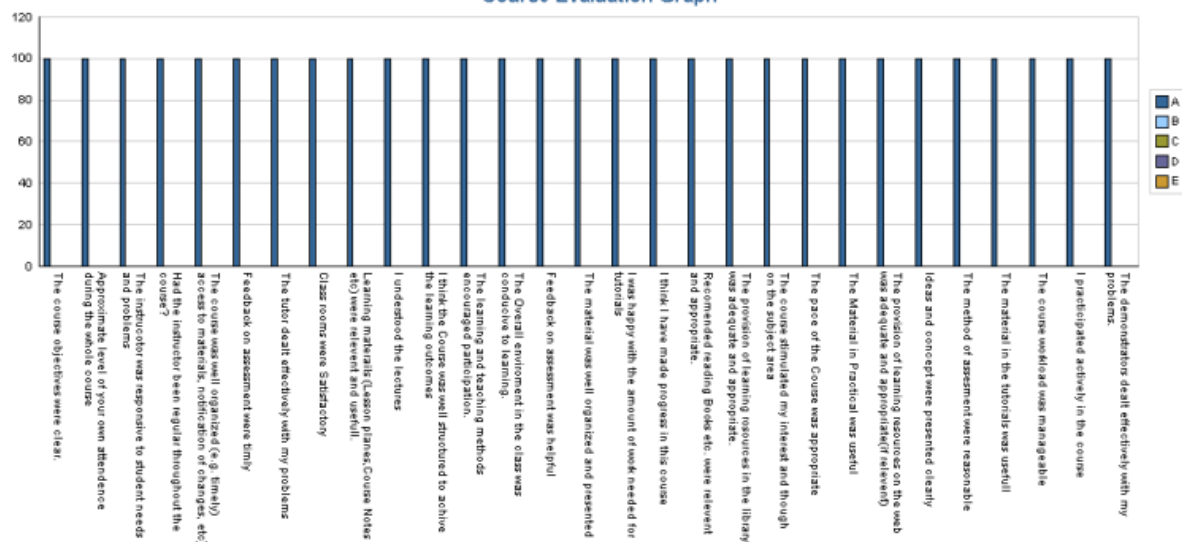
Teacher Name: Muhammad Hanif

Course Name: Probability-I

Section: A M/E: E Semester# 1

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



Pir Mehr Ali Shah
Arid Agriculture University
Performa 10

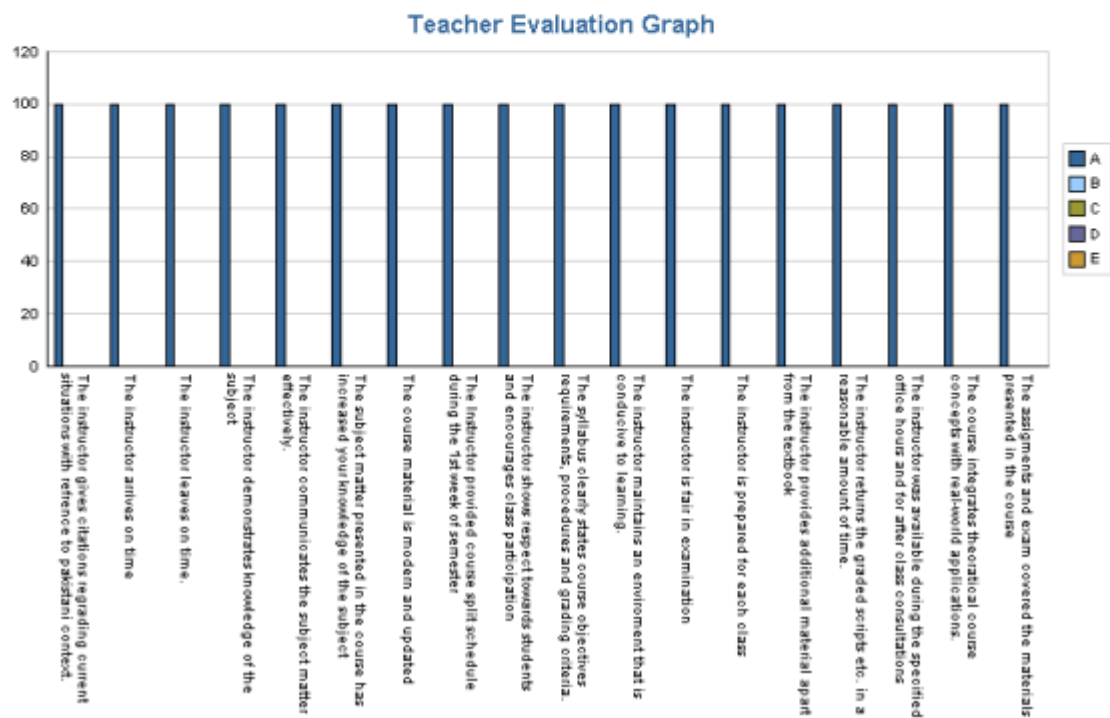
Print Date: Dec. 20, 2022

Session Name: FALL-18

Teacher Name: Muhammad Hanif

Course Name: Probability-I

Section: A **M/E:** E **Semester#:** 1



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



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Performa 1

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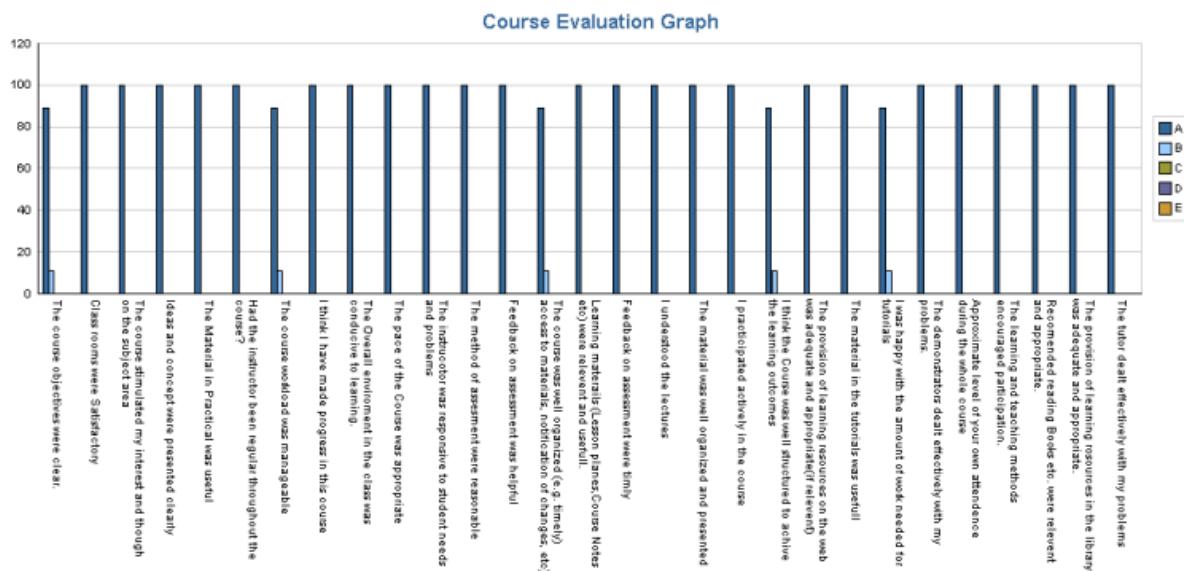
Session Name: FALL-18

Teacher Name: Nasir Jamal

Course Name: Sampling Techniques-I

Section: A M/E: E Semester# 1

Class: M.Sc (Statistics)



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Pir Mehr Ali Shah
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Performa 10

Print Date: Dec. 20, 2022

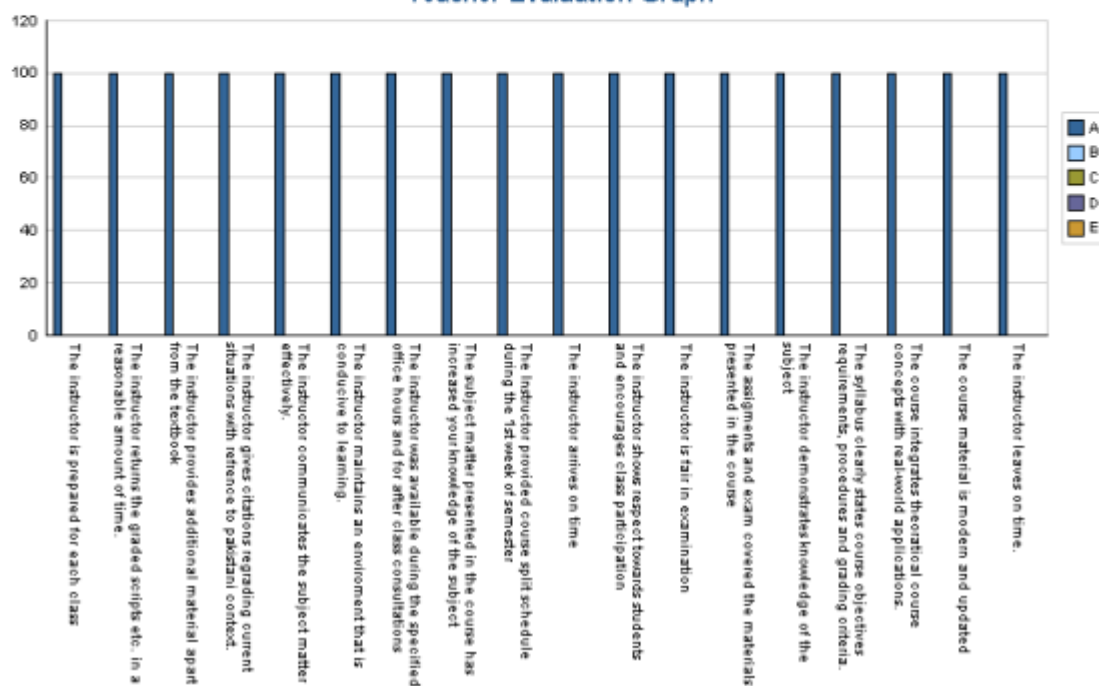
Session Name: FALL-18

Teacher Name: Nasir Jamal

Course Name: Sampling Techniques-I

Section: A M/E: E Semester#: 1

Teacher Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



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Arid Agriculture University
Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-18

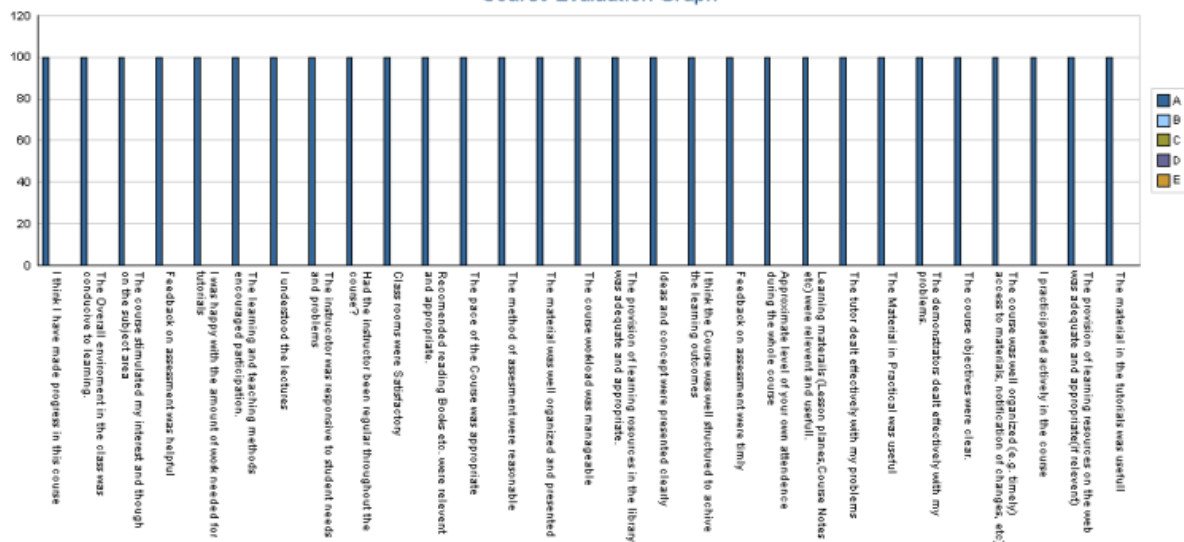
Teacher Name: Nasir Ali

Course Name: Experimental Design-I

Section: A M/E: E Semester# 1

Class: M.Sc (Statistics)

Course Evaluation Graph



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Pir Mehr Ali Shah
Arid Agriculture University
Performa 10

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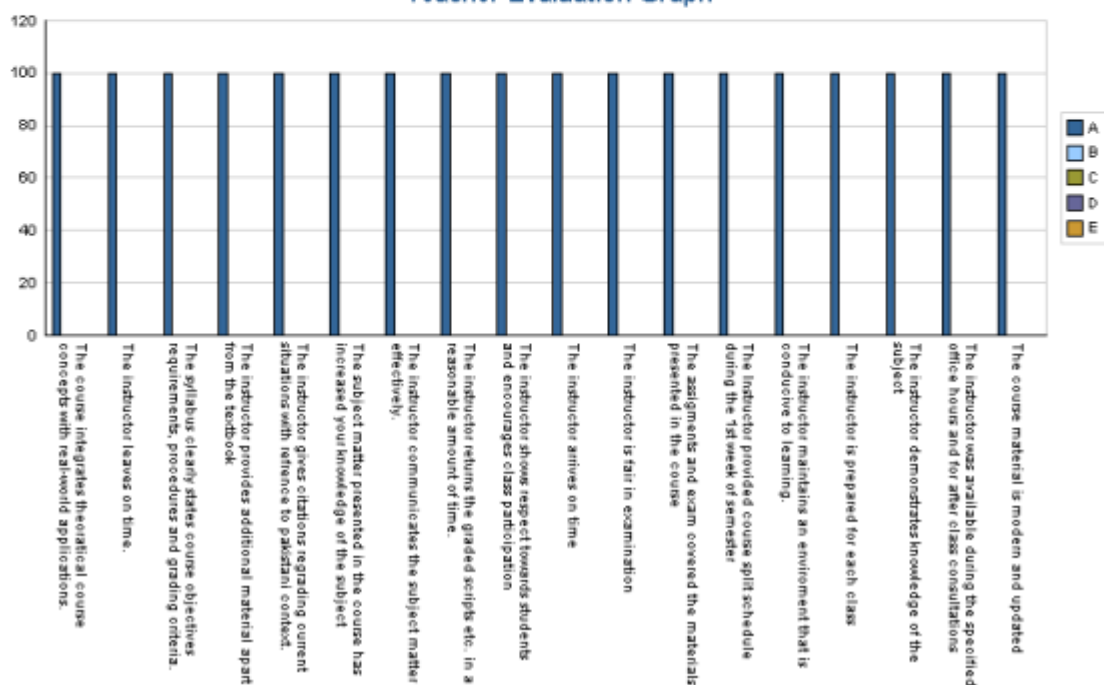
Session Name: FALL-18

Teacher Name: Nasir Ali

Course Name: Experimental Design-I

Section: A M/E: E Semester#: 1

Teacher Evaluation Graph



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Program Assessment Results

Spring 2018

According to the Performa 1 and Performa 10, the teachers have been evaluated by the students for the semester Spring 2018.

1. Dr Muhammad Hanif
2. Dr Saadia Masood
3. Mr. Nasir Jamal
4. Mr. Nasir Ali

Performa 1 titled **Student Course Evaluation.**

Performa 10 titled **Teacher Course Evaluation.**

Individual statements of the Performa's are also summarized in the following Figures.

Program Assessment Results

Fall 2019

According to the Performa 1 and Performa 10, the teachers have been evaluated by the students for the semester Spring 2018.

1. Dr Muhammad Hanif
2. Dr Saadia masood
3. Mr. Nasir Jamal
4. Mr. Nasir Ali

Performa 1 titled **Student Course Evaluation.**

Performa 10 titled **Teacher Course Evaluation.**

Individual statements of the Performa's are also summarized in the following Figures.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-19

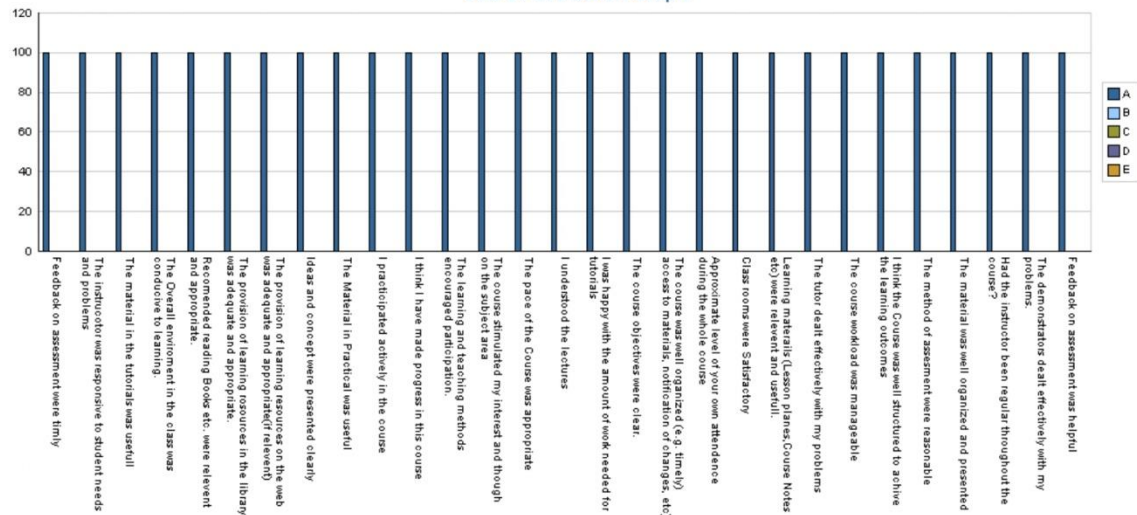
Teacher Name: Nasir Ali

Course Name: Special Problem

Section: A M/E: M Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



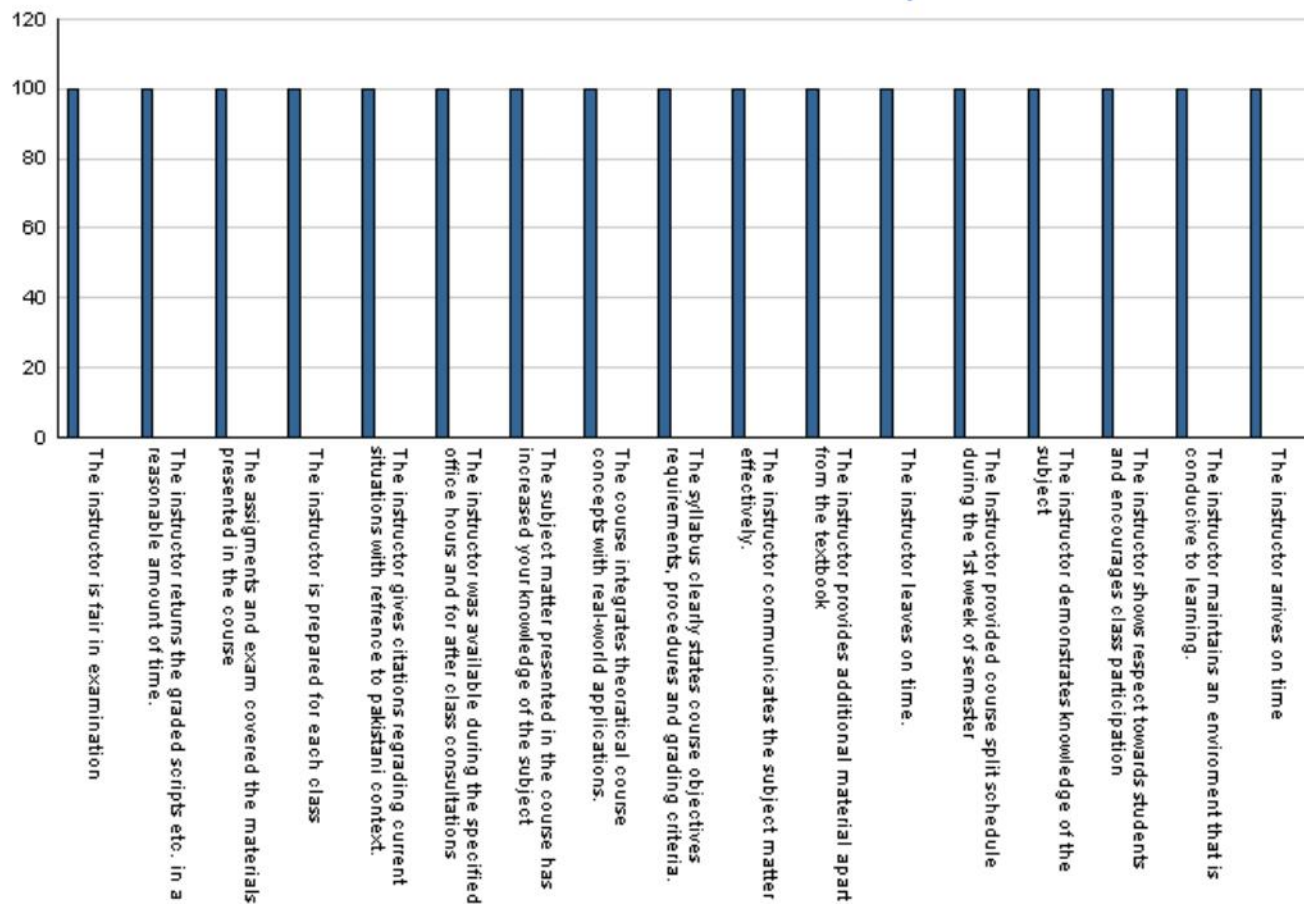
Session Name: FALL-19

Teacher Name: Nasir Ali

Course Name: Special Problem

Section: A M/E: M Semester#: 3

Teacher Evaluation Graph



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**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

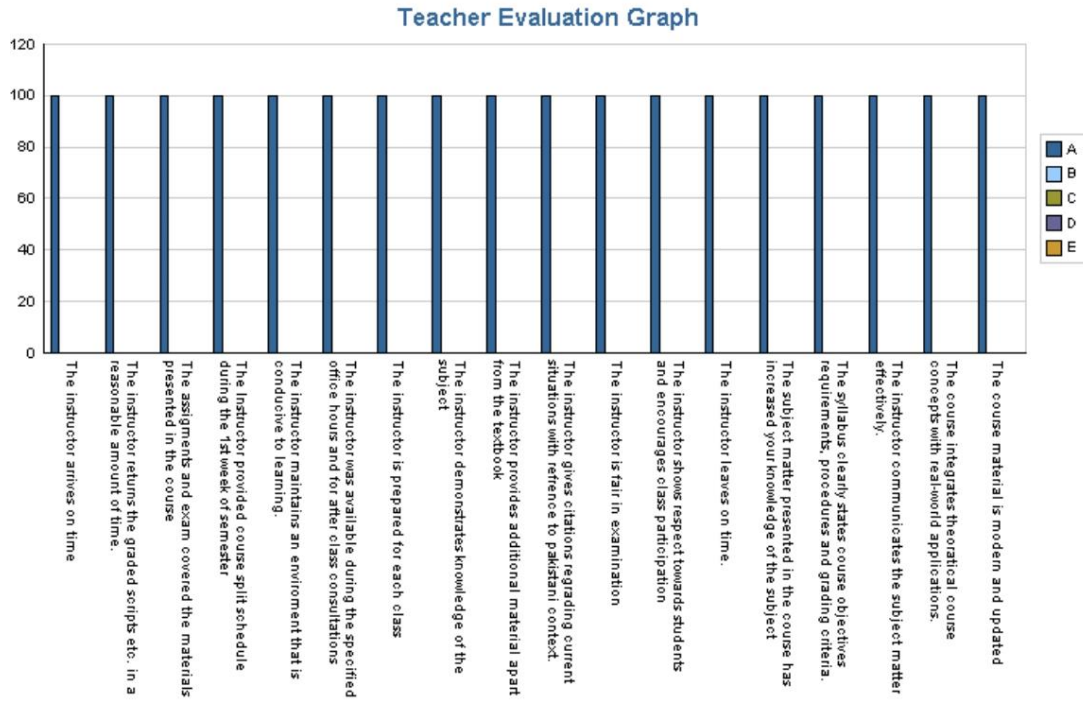
Print Date: Dec. 19, 2022

Session Name: FALL-19

Teacher Name: Nasir Ali

Course Name: Econometrics-I

Section: A M/E: M Semester#: 3



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-19

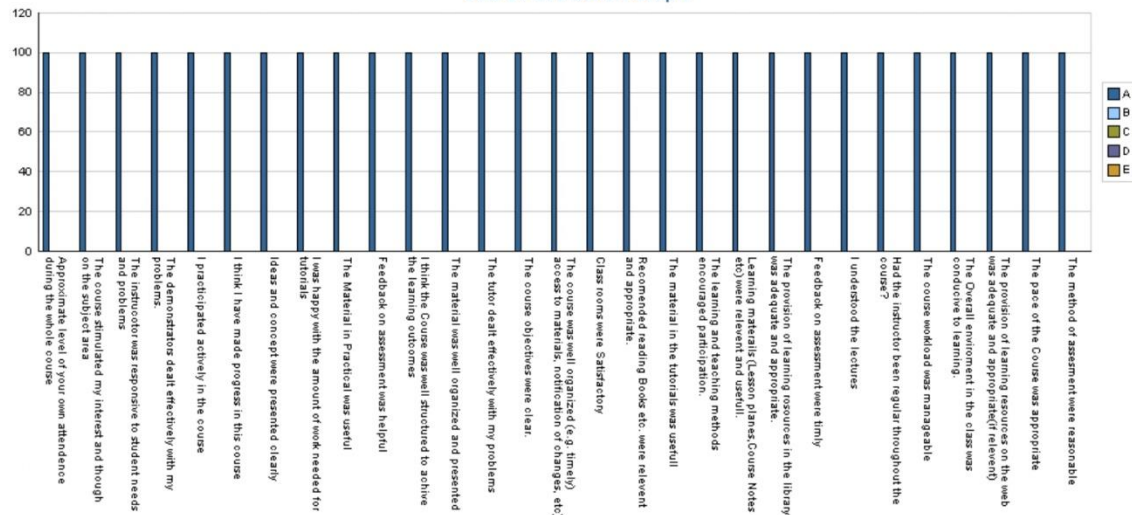
Teacher Name: Usman Shahzad

Course Name: Statistical Inference-I

Section: A M/E: M Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



**Pir Mehr Ali Shah
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Performa 10**

Print Date: Dec. 19, 2022

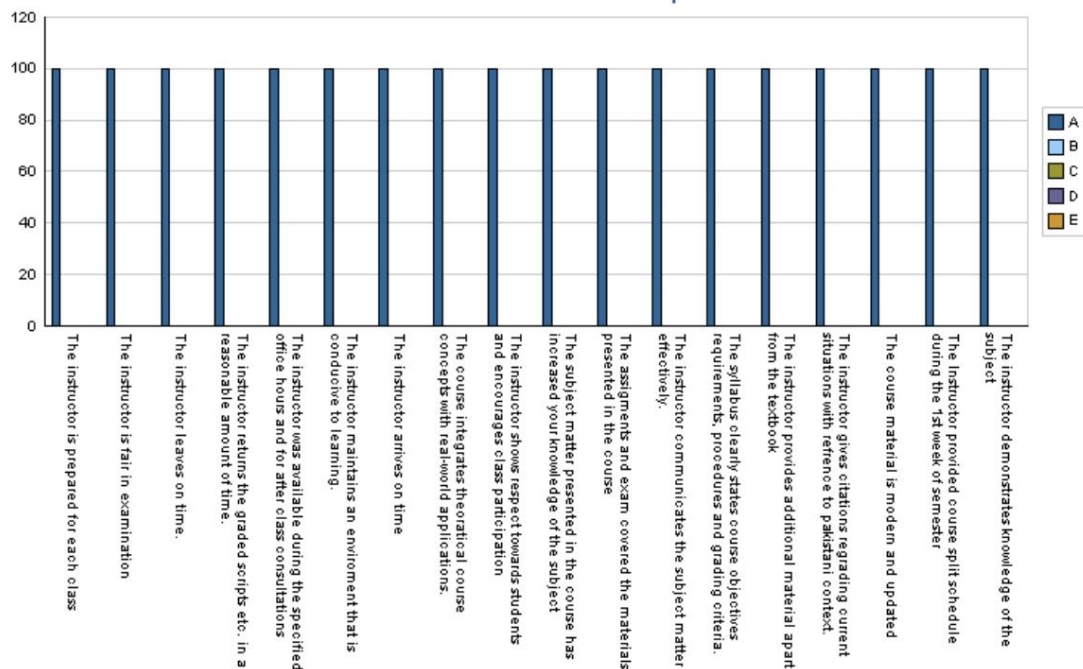
Session Name: FALL-19

Teacher Name: Usman Shahzad

Course Name: Statistical Inference-I

Section: A M/E: M Semester#: 3

Teacher Evaluation Graph



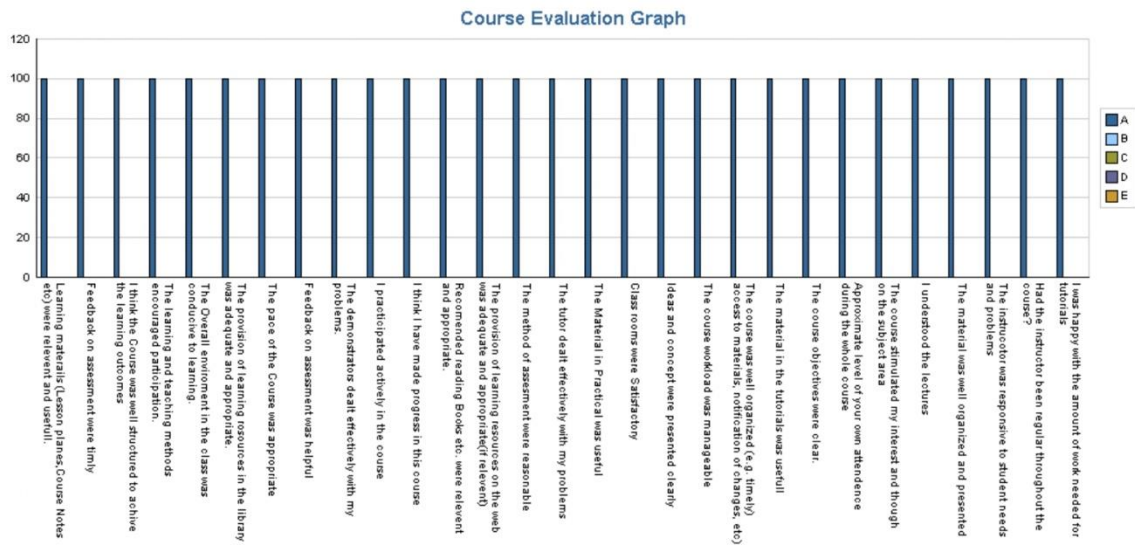
Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



Pir Mehr Ali Shah
Arid Agriculture University
Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-19
Teacher Name: Abid Hussain
Course Name: Stochastic Processes
Section: A M/E: M Semester# 3
Class: M.Sc (Statistics)



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

Print Date: Dec. 19, 2022

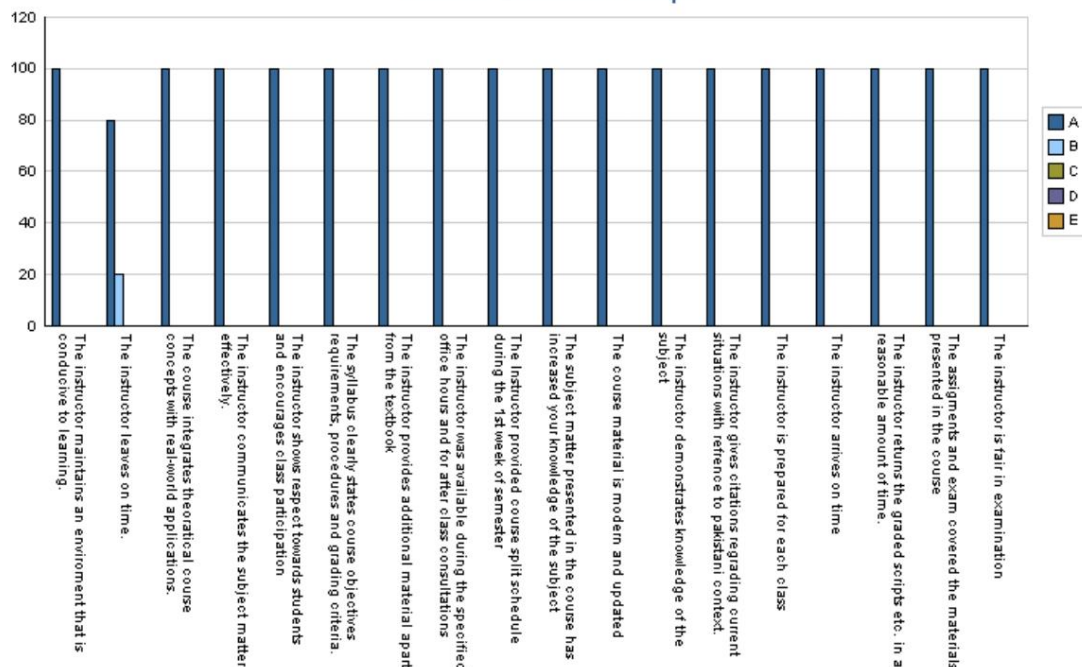
Session Name: FALL-19

Teacher Name: Abid Hussain

Course Name: Stochastic Processes

Section: A M/E: M Semester#: 3

Teacher Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics. About 98% were excellent and 2% good regarding the questions that preparation for each class and delivery of lecture and examination was fair.

Evening



Pir Mehr Ali Shah
Arid Agriculture University
Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-19

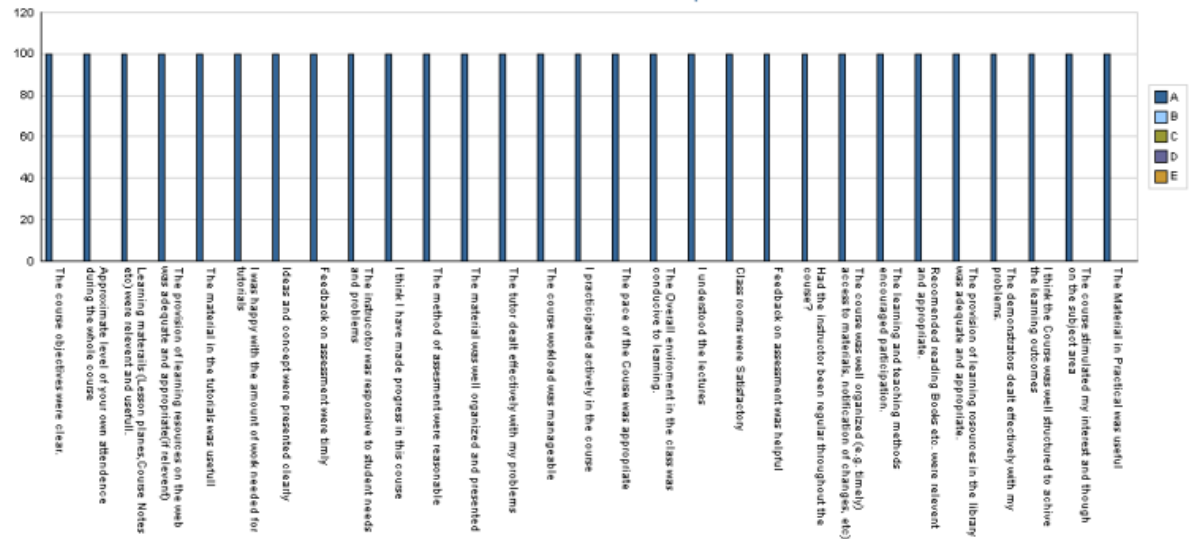
Teacher Name: Nasir Jamal

Course Name: Computer Applications Software

Section: A M/E: E Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

Print Date: Dec. 20, 2022

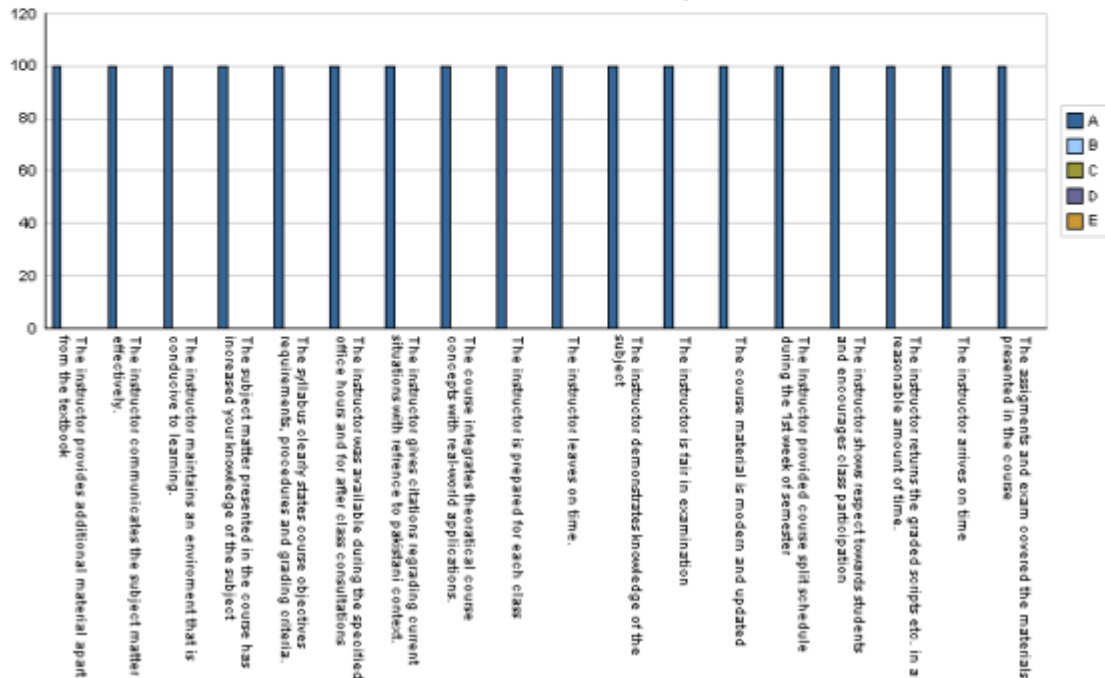
Session Name: FALL-19

Teacher Name: Nasir Jamal

Course Name: Computer Applications Software

Section: A M/E: E Semester#: 3

Teacher Evaluation Graph



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Arid Agriculture University

Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-19

Teacher Name: Nasir Ali

Course Name: Econometrics-I

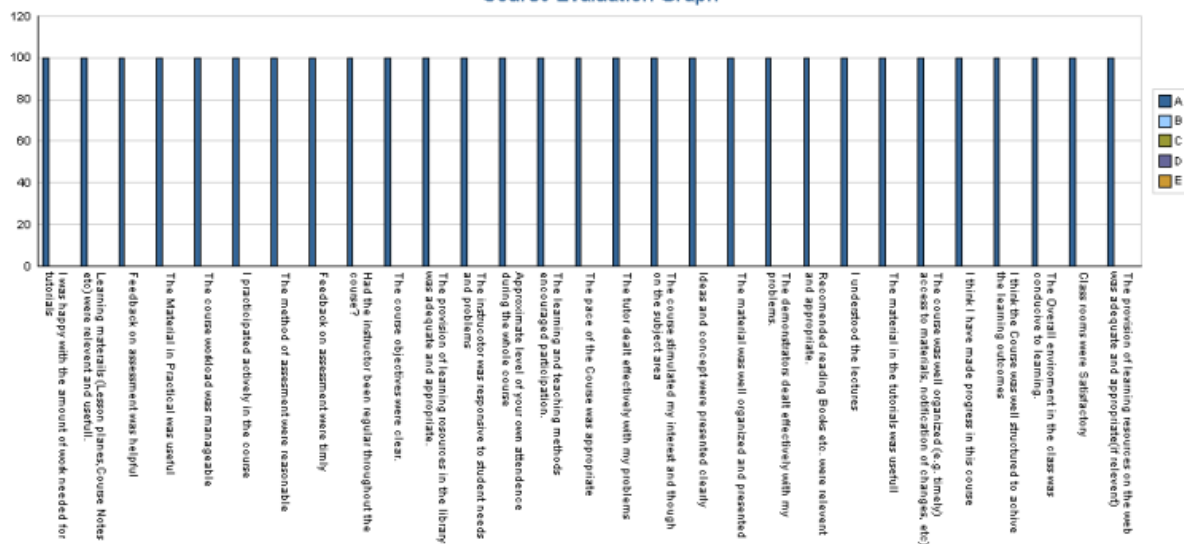
Section: A

M/E: E

Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



Pir Mehr Ali Shah
Arid Agriculture University
Performa 10

Print Date: Dec. 20, 2022

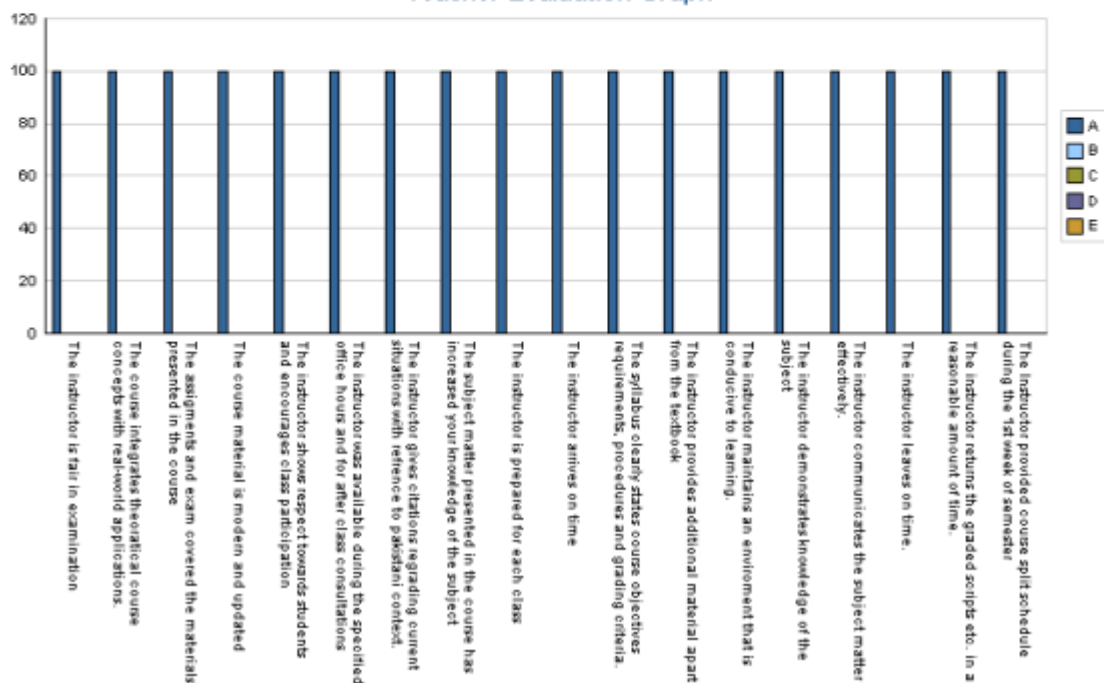
Session Name: FALL-19

Teacher Name: Nasir Ali

Course Name: Econometrics-I

Section: A M/E: E Semester#: 3

Teacher Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-19

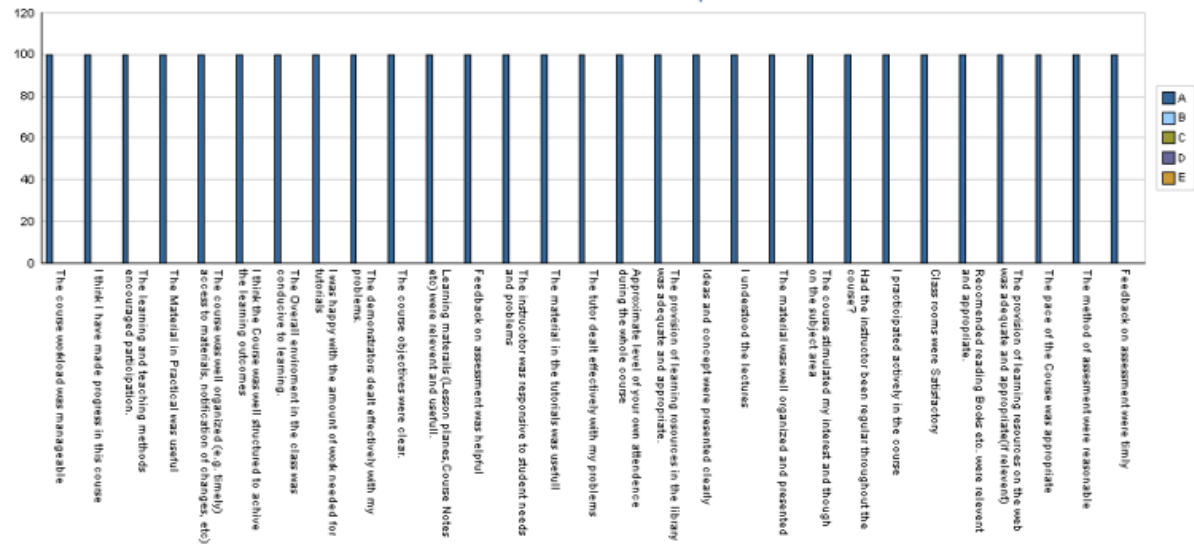
Teacher Name: Nasir Ali

Course Name: Special Problem

Section: A M/E: E Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

Print Date: Dec. 20, 2022

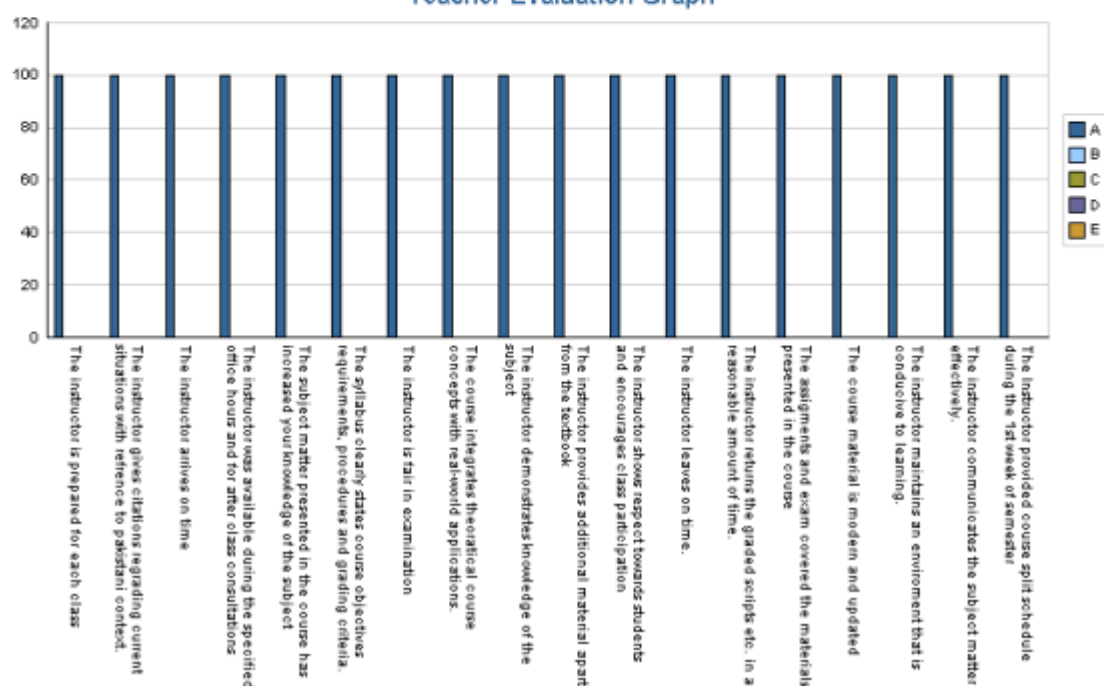
Session Name: FALL-19

Teacher Name: Nasir Ali

Course Name: Special Problem

Section: A **M/E:** E **Semester#:** 3

Teacher Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 20, 2022

Session Name: FALL-19

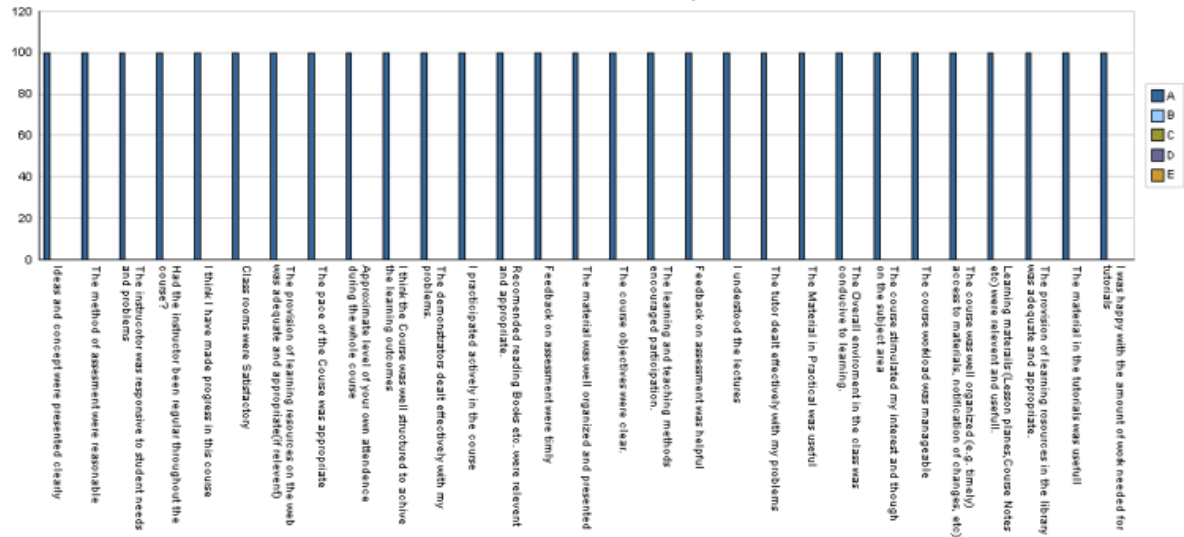
Teacher Name: Muhammad Hanif

Course Name: Statistical Inference-I

Section: A M/E: E Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



**Pir Mehr Ali Shah
Arid Agriculture University
Performa 10**

Print Date: Dec. 20, 2022

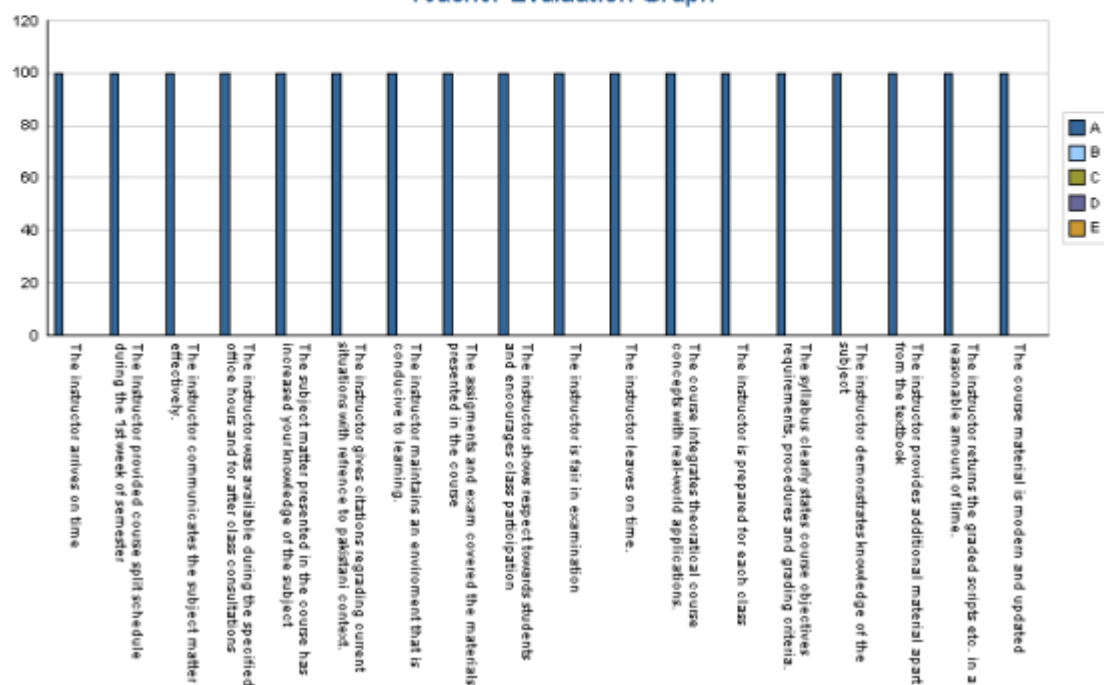
Session Name: FALL-19

Teacher Name: Muhammad Hanif

Course Name: Statistical Inference-I

Section: A M/E: E Semester#: 3

Teacher Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.

Program Assessment Results

Spring 2020

According to the Performa 1 and Performa 10, the teachers have been evaluated by the students for the semester Spring 2019.

1. Dr Muhammad Hanif
2. Mr. Usman Shahzad
3. Dr. Abid Hussain
4. Mr. Nasir Ali

Performa 1 titled **Student Course Evaluation.**

Performa 10 titled **Teacher Course Evaluation.**

Individual statements of the Performa's are also summarized in the following Figures.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 20, 2022

Session Name: SPRING-20

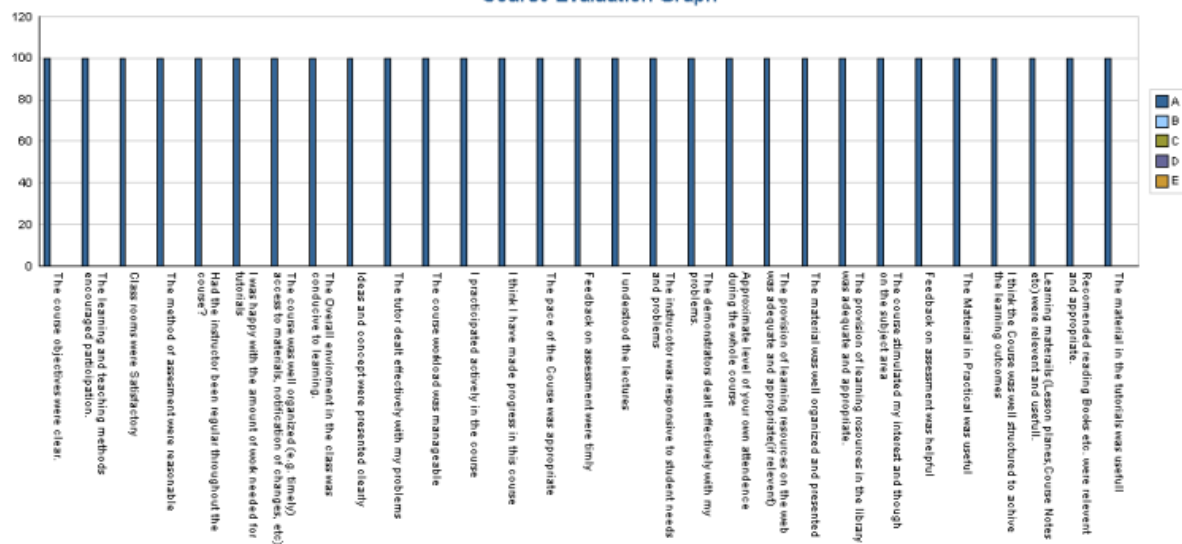
Teacher Name: Nasir Jamal

Course Name: Multivariate Analysis

Section: A M/E: E Semester# 4

Class: M.Sc (Mathematics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



Pir Mehr Ali Shah
Arid Agriculture University

Performa 1

Print Date: Dec. 19, 2022

Session Name: FALL-19

Teacher Name: Nasir Ali

Course Name: Econometrics-I

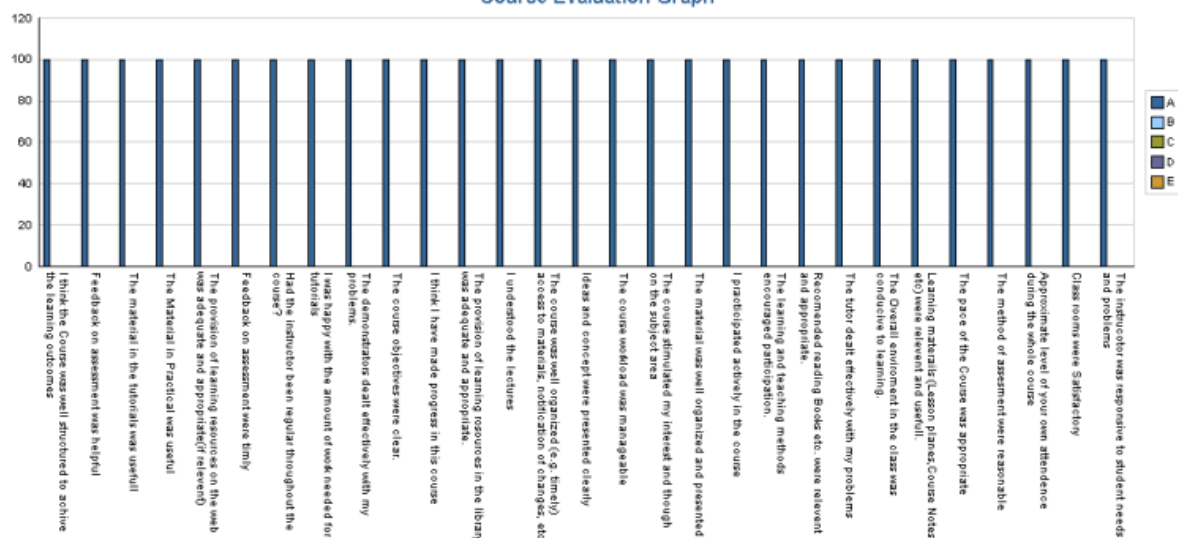
Section: A

M/E: M

Semester# 3

Class: M.Sc (Statistics)

Course Evaluation Graph



Data is collected from 40 students of M.Sc. Statistics About 100% were strongly agreed about the course organization and simulation of interest.



Pir Mehr Ali Shah
Arid Agriculture University
Performa 10

Print Date: Dec. 20, 2022

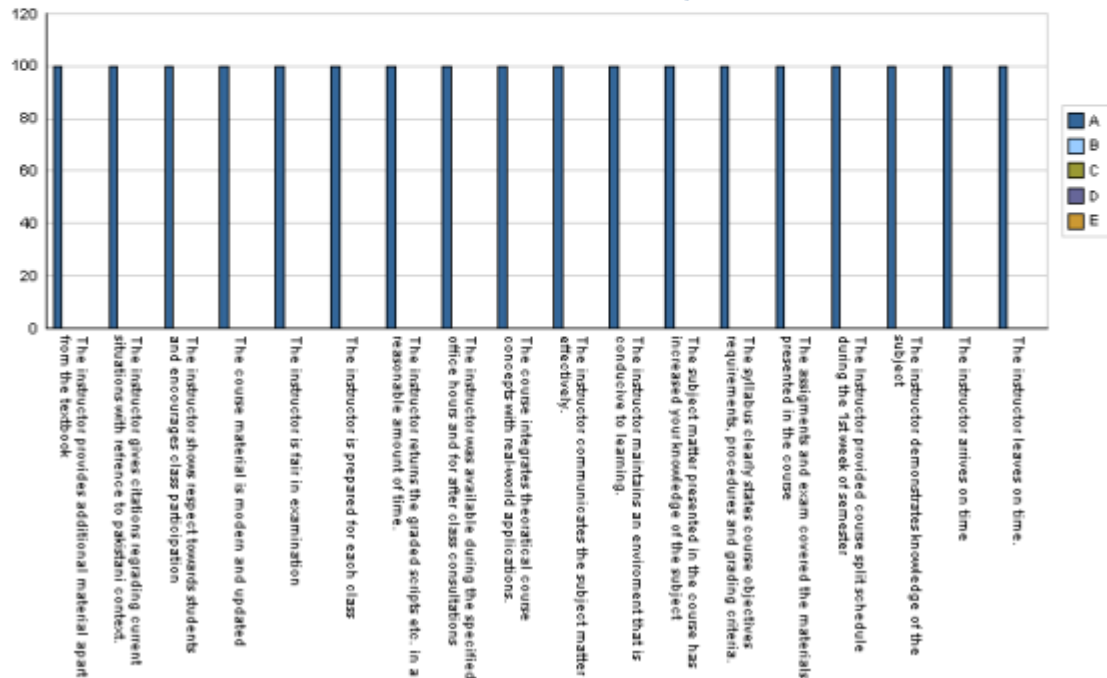
Session Name: SPRING-20

Teacher Name: Nasir Jamal

Course Name: Multivariate Analysis

Section: A M/E: E Semester#: 4

Teacher Evaluation Graph

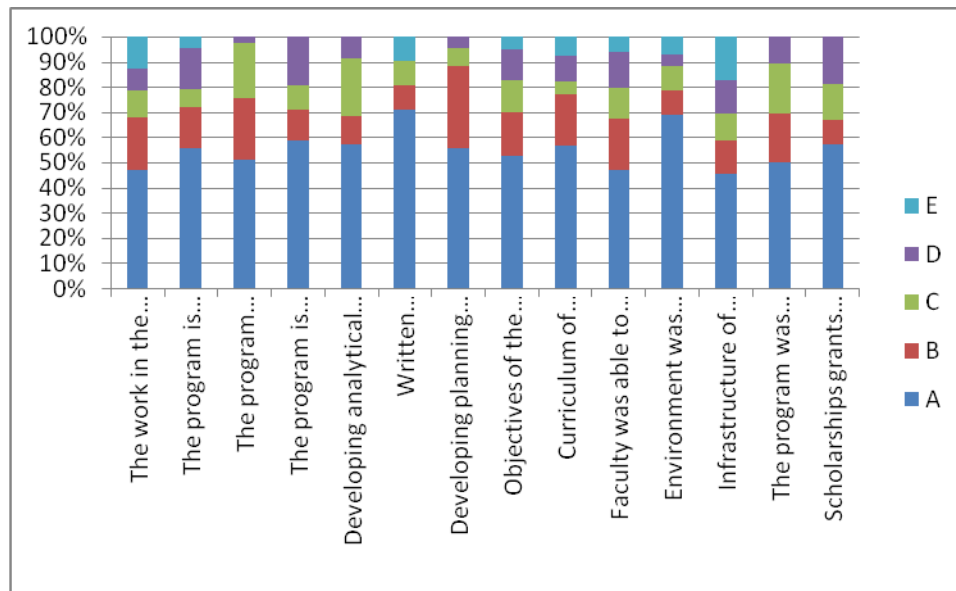


Data is collected from 40 students of M.Sc. Statistics. About 100% were excellent regarding the questions that preparation for each class and delivery of lecture and examination was fair.

Performa 3

Survey of Graduating Students

Data were collected from 80 students. The objective of this survey was to obtain the input on the quality of education they received in their program and level of preparation they had at the university. The results were shown as follows.



The chart shows that 50% of the students were satisfied that the program was comprised of curriculum and extracurricular activities, 70% answered that the university environment was conducive to learning, and 10% were sure about this. 60% were satisfied that the program has developed analytical and problem-solving skills. It is observed that the majority of the graduating students have shown positive responses to the current program, infrastructure, and environment.

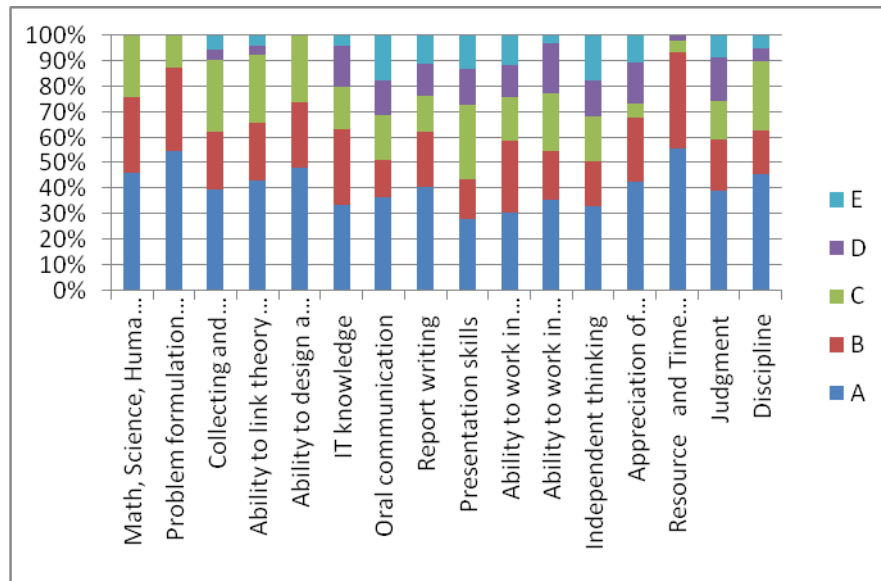
Performa 5: Faculty Survey Report

Brief summary of Results of Faculty Survey Report

The data were collected from five faculty members who answered the following responses regarding the different questionnaires. Regarding job satisfaction level and promotion aspects, the faculty members responded that 70% were very satisfied, and 30% were satisfied. Besides this, most of the faculty members were satisfied with the cooperation received from their colleagues, job security, and departmental environment. 20% of faculty members are not very satisfied with administrative support from the department and their promotion and progress through the ranks. Due to the lack of faculty members in the department, an extra workload was on current teachers, and the availability of more teachers is required in this regard.

Performa 7: Alumni Survey

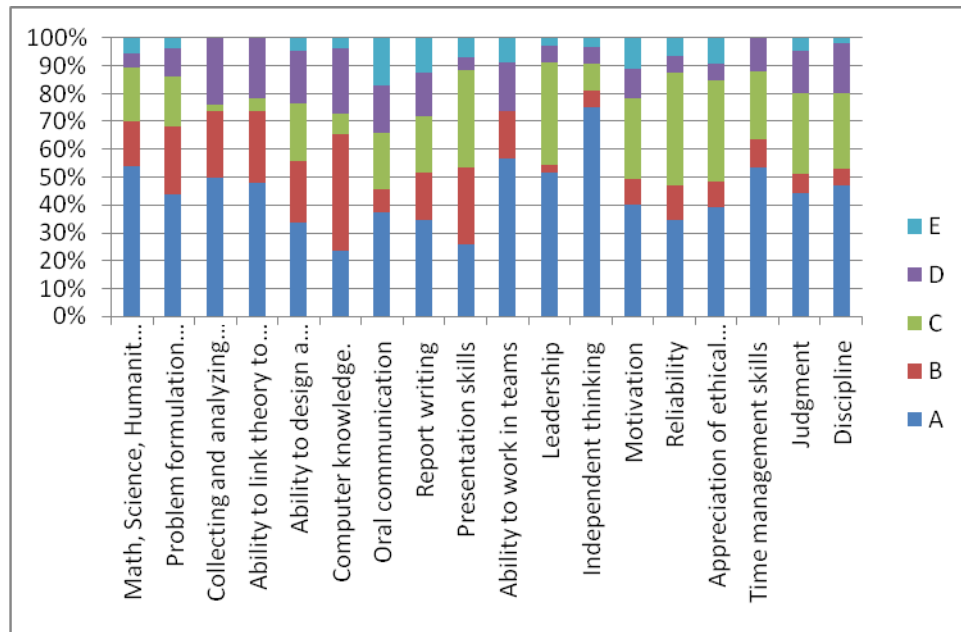
This survey aimed to obtain alumni input on the quality of education, knowledge, communication, and interpersonal skills. A total of 80% of alumni were surveyed. The survey results are shown as follows.



It has been observed that 60% responded excellently regarding their abilities to problem formulation work. About 30% have reported excellent Independent thinking and judgment skills. 20% answered good regarding their abilities to work in a team, and 20% agreed that the department had improved their presentation skills. 40% have shown that their written skills, such as report writing, are improved /good, but 10% responded poor about their oral communication skills.

Performa 8: Employer Survey

The objective of this survey was to obtain employers' input on the quality of education the department provides and assess the quality of the academic program. The survey included University graduates employed in different organizations. A total of 30 employers provided the data. The results are shown below.



The above chart shows the responses of the employer's interest in Math, Science, Humanities, and professional discipline as 55% excellent, and 10% responded very good. 70% answered excellent in their independent thinking 30% agreed on the improvement of leadership qualities. 50% responded excellent interpersonal skills and time management skills.

CRITERION 2: CURRICULUM DESIGN AND ORGANIZATION:

Degree Title: M.Sc. Statistics

Intent: All the courses for the degree program were developed by the committee constituted by the Higher Education Commission, Pakistan, which consists of experts and learned professors, subject matter specialists from the universities, and research organizations from Pakistan when and if needed. The curriculum for the statistics program is revised and updated through different bodies like the board of studies, which comprises senior faculty members responsible for updating the curriculum. The body is authorized to formulate the syllabus and course contents. The Chairperson is the convener of this body. The courses are then sent to the Board of Faculty for approval. The Dean of the Faculty, who is also the convener, conducts the meeting. As per University Rules, after the approval of courses from the Faculty Board, these are placed before the University Academic Council for their approval. Finally, the University Syndicate accorded formal acceptance of all the courses for implementation.

Definition of Credit Hour

A student must complete a definite number of credit hours. One credit hour is one theory lecture or two hours (practical work/weeks).

One credit hour carries 20 marks. The semester is of 18 weeks.

Degree Plan

Presently one program is organized by the department that is of M.Sc. A minimum of four and a maximum of six semesters duration programs after a bachelor's degree is carried out.

M. Sc (Statistics)

The M.Sc degree program consists of 02 academic years / 04 semesters. A student has to study 20 courses/subjects to total credit hours. For each course, 10% of marks are reserved for the assignments, 30% for the mid-term examination, and 60% marks for the final examination as per university rules. Degrees are awarded after completing the required number of credit hours (courses).

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 and 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.

Table 6: Statistics Courses versus Program Outcome

	Elements		
	Theoretical Background	Problem Analysis	Solution Design
Courses	STAT-703, STAT-704, STAT-705, STAT-707, STAT-708, STAT-712, STAT-714, STAT-715, STAT-700, STAT-701, STAT-402, MATH-708, STAT-721, STAT-723, STAT-724, MATH-706, MATH-707, STAT-752, STAT-753, STAT-755, STAT-756	STAT-703, STAT-704, STAT-706, STAT-707, STAT-708, STAT-709, STAT-710, STAT-711, STAT-713, STAT-715, STAT-716, STAT-718, STAT-719, STAT-701, STAT-702, MATH-704, MATH-709, STAT-724, MATH-704, MATH-707, STAT-753, STAT-754	STAT-704, STAT-706, STAT-708, STAT-709, STAT-710, STAT-711, STAT-713, STAT-715, STAT-716, STAT-718, STAT-719, STAT-720, STAT-701, STAT-402, STAT-702, MATH-701, MATH-704, MATH-705, MATH-709, MATH-710, STAT-724

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

• MATH-701	Computer Applications in Statistics	3(1-4)
• MATH-704	Theory of Matrices and Numerical Analysis	3(3-0)
• MATH-705	Operations Research	3(3-0)
• MATH-706	Calculus-I	2(2-0)
• MATH-707	Calculus-II	2(2-0)
• MATH-708	Computer Applications Software	4(2-4)
• MATH-709	Computer Programming	3(2-2)
• MATH-710	Computational Analysis	3(1-4)
• STAT-711	Advanced Experimental Design with Data Processing	3(2-2)
• STAT-713	Statistical Quality Control and Reliability	3(2-2)

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.

• STAT-713	Statistical Quality Control and Reliability	3(2-2)
• STAT-716	Survey and Research Report	4(2-4)
• STAT-719	Special Problem	1(1-0)
• STAT-720	Seminar	1(1-0)

These courses help the students research not only their curriculum problems but also make them do social research, communicate with society and describe the problems faced by the people statistically and find their solutions.

CRITERION 3: LABORATORIES AND COMPUTING FACILITIES

There is only one Computer Laboratory with 25 computers. Computer Laboratory is used for practical exercise and demonstration to graduate and postgraduate students in their introductory and major courses. In addition, advanced research is nearly only possible with proper research facilities like high-tech labs and access to international publications and research resources.

Location and Area:

Faculty of Sciences, Department of Mathematics and Statistics, 1st floor, New Academic Block.

Adequacy for instruction:

Instruction tools like multimedia are available.

Courses Taught:

• MATH-701	Computer Applications in Statistics	3(1-4)
• MATH-704	Theory of Matrices and Numerical Analysis	3(3-0)
• MATH-705	Operations Research	3(3-0)
• MATH-706	Calculus-I	2(2-0)
• MATH-707	Calculus-II	2(2-0)
• MATH-708	Computer Applications Software	4(2-4)
• MATH-709	Computer Programming	3(2-2)
• MATH-710	Computational Analysis	3(1-4)

Software Available:

- SPSS
- MSTAT
- Minitab
- Mathematica
- R-language

Safety Regulations:

Safety measures are unavailable against fire (extinguisher), minor hazards and accidents, and injuries (First Aid Kit). However, the university maintains a Medical Dispensary for such incidents.

Standard-3.1: General Computer Labs

- Software Manuals of each subject are not available.
- The library has yet to be established. However, individual teachers have prepared some manuals.

Standard-3.2: There must be support personal for instruction and maintaining the laboratories

Only two Laboratory attendants maintain laboratories. No technical assistance is available.

Standard-3.3: The University computing infrastructure and facilities must be adequate to support program's objectives

- **Computing Facilities Support:** Available to all faculty members and the post graduate students.
- **Safety arrangements:** There needs to be a proper safety arrangement and security plans in the case of an emergency. This program is being taught in classrooms on the 1st floor; there

is no emergency exit for the lab and classroom. No fire extinguishers have been installed in any laboratory. No first aid kits/ facilities were provided in the laboratory.

CRITERION 4: STUDENT SUPPORT AND ADVISING

The faculty of the statistics program has always been of great support and help to the students. The teachers are always present to guide the students in life.

Standard-4.1: Courses must be offered with sufficient frequency and number for students to complete the program in a timely manner

- All the courses, including the courses at the postgraduate level, and the elective and supportive courses, are taught per the policy of HEC.
- At the postgraduate level, Course subjects are offered per the scheme of study provided by HEC.
- Elective courses are offered per the strategy of HEC and the university. The courses from outside the department are also offered per the scheme of study provided by HEC.
- For post graduate Programs, various courses are offered according to the profession's demand.

Standard-4.2: Courses in the major area of study must be structured to ensure effective interaction between students, faculty and teaching assistants.

- In the Statistics program, generally for the courses consisting of theory and practical, the same instructor is employed to minimize the problems.
- To ensure effective interaction between students, faculty, and teaching assistants at the time of course formulation, both theoretical and practical aspects are focused.
- Theoretical problems are explained, and assignments are also given to the students, whereas practical ones are carried out in the lab.
- Emphasis is always given to effective interaction between each section.

Standard-4.3: Guidance on how to complete the program must be available to all students and access to qualified advising must be available to make course decisions and career choices.

Several steps have been taken to provide students guidance such as:

- The university offers many student support programs regarding admission, scholarship schemes, etc.
- In their capacity, students arrange orientations, welcome and farewell get together, study visits, and various cultural activities.
- The teachers prove to be extensive parental support for the students and help solve students' problems; however, currently, there is no parent-teacher association.
- Students are informed about the program requirement through the office of the chairman.
- The university's Director of Student Affairs is appointed and ready to help the students with tutorials and counseling for extracurricular activities. However, there is no counseling cell.
- The Directorate of Students Affairs has been established, realizing the need for exploring job opportunities for university graduates.

Weaknesses:

- Student advisory committee should be formed at this level.
- There is no such arrangement of job fairs, seminars, and other communication skills for students to interact with the outer world.

CRITERION 5: PROCESS CONTROL

The program exercises quality control in all the processes by which significant functions are delivered. As the student becomes responsible right after admission, the process starts from admission and registration, leading towards the end of the academic year and even after. It is the duty to maintain quality control in every function of the education life of the student for which some standards should be met:

Standard-5.1: The process by which students are admitted to the program must be based on quantitative and qualitative criteria

- The applications of the candidates are accepted within the due date of admission and announced by the university through an advertisement in the newspapers.
- The Academic Council approves the number of seats available in the discipline.

- The candidate looking for admission must be a resident of Punjab Barani areas, except the children of university employees. Depending upon the availability of seats, candidates from outside the Barani areas are also eligible.
- The student seeking admission to the degree of master of statistics must have passed the bachelor's degree examination with 2nd division at least in a field of study relating to the subject. The admission process is reputable and follows the rules and criteria set by the university. For this purpose, the Registrar's office gives an advertisement in the national newspapers, which announces the date of the merit lists.
- The lists are displayed right after the completion of whole processes. The selected students are offered register their names after paying the fee dues.

Standard-5.2: The process by which students are admitted to the program must be clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives

- After the fee submission, the student names are forwarded to the Registrar's office for proper registration in the specific discipline after completing the admission process. Registration numbers are issued to the students.
- Students are evaluated through Mid, Final, and Practical exams and assignments and different research proposals. Subject quizzes are also helpful for the evaluation of the capabilities of students.
- Evaluation is done through the result of each semester. If the students fulfill the university's criteria, they are promoted to the next semester.
- In general, the students are registered on competition bases keeping in view the academic and research standards.

Standard-5.3: 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 recruitment policy followed by the university is recommended by HEC induction of all posts is done as per rule. Vacant and newly created positions are advertised in the national newspapers, and the registrar's office receives applications.

- Call letters are issued to the short-listed candidates based on their experiences, qualifications, publications, and other qualities/activities as fixed by the university.
- The university selection Board interviews the candidates. Candidates with previous experience, publications, or additional qualifications are entertained. Principal and alternate candidates are selected on merit.
- A syndicate meeting is held for further orders, such as when to issue appointment letters to the employees.
- The induction of new candidates depends upon the number of approved vacancies.
- The standard set by HEC is considered.
- At present, no procedure exists for retaining highly qualified faculty members. However, the revised pay scales of structures are attractive.
- HEC also supports the appointment of highly qualified members as foreign faculty professors, National Professors and deposes them in various university departments.

Standard-5.4: This process must be periodically evaluated to ensure that it is meeting its objectives.

- As already mentioned, the Department of Mathematics and Statistics has excellent teachers who educate the students to impart actual knowledge.
- The teachers teach in a friendly way and revise and update the curriculum as required.
- The students are taught with the help of overheads, slides, pictures, etc.
- Although the subject books from authentic authors are hardly available in the library, their cheap Asian editions are available in the markets. Teachers also provide the students with photo state copies of important books, documents, and notes.
- Teachers prepare their lectures from the books and updated knowledge available and deliver them to students. Students are also given small research assignments, which the teachers know they can go through with the help of the literature and the internet facility available in the university library.
- Seminars are also being conducted at a small level to motivate and guide the students to research.

The updating of knowledge is essential. With the emergence of new fields, new courses are being set and included in the curriculum.

Standard-5.5: The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented

- Evaluating the students' capabilities is a continuous process throughout the academic years. The evaluation procedure consists of quizzes, mid and final examinations, practical formulas, assignments and reports, and oral and technical presentations.
- At the end of the academic year, the final examinations are held, after which the result is notified. The exams are taken to assess students' capabilities by asking applied questions and problems about the different dimensions of the subject, which help the students to be completely evaluated. Only the students passing this exam are awarded the degree.
- Candidates who secure 80% or more are awarded a gold medal to the students on the annual convocation held late every year.

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

Table 7: Faculty Distribution by Faculty Specialization

S. No.	Name	Position	Qualification	Specialization
1	Dr. Muhammad Hanif	Associate Professor	Ph.D	Probability and Stochastic Analysis
2	Dr. Saima Mustafa	Assistant Professor	Ph.D	Complex Analysis
3	Mr. Nasir Jamal	Assistant Professor	M.Phil	Statistical Methods, Survey Sampling,
4	Mr. Nasir Ali	Lecturer	M.Sc.	Sampling Techniques, Time Series Analysis
5	Ms Beenish Shakir	Lecturer	M.Phil	Numerical Analysis

The faculty currently consists of one Associate Professor, two Assistant Professors, and two lecturers. Most faculty members are improving their qualifications in different Ph.D. research programs. However, the department is short of teaching faculty as most of the members are on study leave.

Standard 6-2: The interests and qualifications of all faculty members must be sufficient to teach all courses, plan, modify and update courses and curricula.

As mentioned earlier, most faculty members are busy improving their qualifications. So far, one of the members has completed the Ph.D. research and joined the department, and two are engaged in different research programs in renowned institutes both inside and outside the country. All the faculty members completing their research were given study leaves and were fully accommodated by the department and university. Any faculty member interested in improving their education can avail themselves of any available chance. Complete accommodation from the department is provided.

The faculty members are being evaluated regularly by the students.

Standard 6-3: All faculty members must have a level of competence that would normally be obtained through graduate work in the discipline. The majority of the faculty must hold a Ph.D in the discipline

Meanwhile, five regular faculty members are working in the program. The program activities are being carried out with the help of visiting faculty.

As mentioned earlier, any faculty member interested in any research or education-improving program is fully and immediately supported.

There is an excellent working environment for the faculty members. There is complete cooperation among them.

The graduates evaluate teachers to obtain input on the quality of education the university provides, and the results are satisfying. Teachers of the program are actively engaged in imparting quality education. So far, the faculty members of the Stats program have cooperated in every step taken by the university to obtain the program objectives. They are always interested in improving the quality of education.

CRITERION 7: INSTITUTIONAL FACILITIES

The university has one central library which is facilitated with books and literature about the subject.

Standard- 7.1: The institution must have the infrastructure to support new trends in learning such as e-learning

The subject of statistics shares many fundamentals with mathematics, economics, and computer science, so the subject needs a constant update of knowledge. To be updated in the different theories and methodologies, the facility of the internet is an essential component.

The faculty members of the Mathematics and Statistics department are always prepared to be innovative and experimental in their subjects. They like access to new and authentic software which

helps study theories and concepts of the subject, e.g., MSTAT, SPSS, Minitab and Eviews, R language, etc.

Weaknesses:

- Recommended books of the program are only available to some students.
- The same facility should be provided to the faculty offices.
- A library should be established, containing all the significant literature about the subject.

Standard- 7.2: The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel

- The library has a computer lab consisting of 25 personal computers. The lab has been facilitated with an internet facility.
- Access to various websites of prestigious research journals and publications, e.g., Jstor, ACM, and IEEE, provided by HEC, is also available in the lab. Electronic library books and periodicals are available via Higher Education Commission for learning purposes.

Standard- 7.3: Class-rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities

- There is one classroom, and one room is being shared with the program. As mentioned earlier, one computer lab is equipped with 25 personal computers.
- The faculty offices are also not sufficient to accomplish the requirements of all the faculty members.

Weaknesses:

- Insufficient classrooms are available because we have to use the computer lab instead of the classroom.
- Classrooms must be adequately equipped, and offices must be adequate to enable faculty to carry out their responsibility.

CRITERION 8: INSTITUTIONAL SUPPORT

Although the institute is fully supportive and cooperative, the financial resources in this respect are insufficient. Let us study the standards to meet this aspect.

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 faculty and scholars

- The university is always ready to provide every opportunity available to the faculty members to improve their qualifications and upsurge their careers.
- The environment is extremely friendly and comfortable. All the faculty members move with complete harmony and are very accommodating to each other. The courses are assigned with the total consent of the teacher.
- Faculty offices are well-constructed, large, and airy.

Weaknesses:

- There is a need for qualified teachers and scholars.
- Insufficient secretarial support, technical staff, and office equipment.
- The number of faculty members is inadequate for the program.
- Due to the unavailability of class rooms, classes are taken in the labs.

Standard 8.2: There must be an adequate number of high quality graduate students, research assistants and Ph.D students.

The number of graduates in the last two years is given as:

Table8: Quantitative Assessment of the Department (Last Two Year)

Sr. #	Particular	No	Remarks
1.	M. Sc. Degree awarded	Nearly 140	Mostly graduates got employment and is currently holding various positions.
2.	Students : Faculty ratio	1:40	Does not fulfill HEC criteria
3.	Technical : Non Technical ratio	1:2	Does not Fulfill HEC criteria
4.	High Quality Graduate Students, PhD students, Research Assistants		NA

Standard- 8.3: Financial resources must be provided to acquire and maintain Library holdings, laboratories and computing.

The financial resources provided by the university to the program for stationary, the maintenance of the computer laboratory, and the purchase of consumable items and books for 2012-2014 are almost 50,000.

SUMMARY

The quality assessment program of the M.Sc statistics program for 2018-2020 has been reported. The program is going on an excellent mod in most respects. Apart from the restrictions of the available resources program's mission and objectives are on the way to achievement. The highly proficient and skilled faculty is busy improving the program and focusing on its educational mission. The program team checks the program's progress and objectives through surveys on different aspects such as course evaluation, teacher evaluation, alumni survey, graduating student surveys, and a faculty survey. This will be done by collecting data on already designed Performa's self-assessment cells. After the collection of data, it is analyzed and presented in the form of graphs and tables. The charts of the present report highlighted the different assessment performances of other teachers evaluated by the students. The evaluation of the teachers has been carried out using students' opinions. All the teachers have been evaluated for all the different criteria using Performa 1 and 10. It is good to know that all teachers have gained exemplary reputations in their subject grip and knowledge showing satisfactory results from the students' views. It is good to know that students are interested in research work because of program's instructor's encouragement. In addition, students are happy because of every teacher's sound knowledge, concern for their students, their classes, and the accurate picture of a student in their results.

Moreover, some productive activities, such as seminars, etc., are also arranged for students. But there is more time for the program progress to be focused on many other things to improve its quality. For example, the limited number of lecture rooms, infrastructure, and access to various scientific journals greatly hinder faculty development. Also, there is a limited budget for research purposes which cannot maintain computer laboratory and research activities. According to an employer survey, the program has produced qualified statisticians with excellent knowledge of modern lines, applied statistical techniques, and excellent careers. As far as Faculty members are concerned, they are satisfied with their salaries. Still, due to the limited number of faculty, they have severe concerns about the workload, as most agreed they have significantly less time for themselves. The program can be flourished on modern lines if we take Professional training for faculty members who play a vital role in improving grip in any subject, and their expertise will be enhanced. At

present, there is no suitable library for this. There is a need for the appropriate allocation of sufficient funds, and adequate updation of the computer lab is required.

Performa 9:

FACULTY RESUME

Name:	Dr. Muhammad Hanif
Personal:	Father Name: Siraj Din Marital Status: Married Nationality: Pakistani National ID: 35404-5292007-3 Email: hanif@uaar.edu.pk mhpuno@hotmail.com Phone: +92-51-9290016
Experience:	12 year
Honors and Awards	Chinese Govt Scholarship
Memberships	No
Graduate Students Postdocs Undergraduate Students Honor Students	Yes
Service Activity	Incharge of the department, Teaching, Research
Brief Statement of Research Interest	Limit theory in probability and large sample theory in statistics. Statistical Inference for Stochastic Processes
Publications	60
Research Grants and Contracts	No
Other Research or Creative Accomplishments	No

Selected Professional Presentations	No
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Name:	Dr. Saadia Masood
Personal:	2015 Feb till Date: Assistant Professor. Department of Mathematics and Statistics PMAS-University of Arid Agriculture, Rawalpindi. saadia.masood@uaar.edu.pk
Experience:	8 years
Honors and Awards	HEC Scholarship in PhD
Memberships	Board of Faculty (Sciences) Board of Study Department of statistics Admission Committee ,Department of Statistics Comprehensive Committee, Department of statistics
Graduate Students Postdocs Undergraduate Students Honor Students	M.Phil Statistics Supervision = 7 students Co-supervision = 5
Service Activity	Teaching, Research
Brief Statement of Research Interest	Sampling

Publications	Masood, S. and Shabbir, J. (2015). On Some Families of Estimators of Variance of Post-Stratified Sample Mean using Two Auxiliary Variables. Communications in Statistics-Theory and Methods, 44: 2395-2415. Masood, S. and Shabbir, J. (2014). Generalized Multi-Phase Regression-Type Estimators using Multi-Auxiliary Variables under the Effect of Measurement Error. Hacettepe Journal of Mathematics. (Accpeted)
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	Masood, S. and Shabbir, J. (2011). Ratio Estimators for the Population Variance in Nested Stratified Sampling. International Journal of Agricultural and Statistical Sciences, 7 (2), 589-603.
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above
Selected Professional Presentations	Workshops, seminars

FACULTY RESUME

Name:	NASIR JAMAL
Personal:	Designation: Assistant Professor S/o Khalil-ur-Rehman, DOB: 11 th January, 1963
Experience:	Survey and Research: 18 years, Teaching: 3 Years
Honors and Awards	No.
Memberships	11
Graduate Students	3
Postdocs	-
Undergraduate Students	-
Honor Students	
Service Activity	Teaching
Brief Statement of Research Interest	Ridge Regression, Modeling,
Publications	Athar M. R., Jamal N. , Illays S., Nawaz M., Batool A., Asghar S., Effect of Transformational and Transactional Leadership on Employee Performance; mediating role of Knowledge Management, Jokull Journal Vol 64, No. 5;May 2014 405
Research Grants and Contracts	No
Other Research or Creative Accomplishments	No
Selected Professional Presentations	No

FACULTY RESUME

Name	Nasir Ali
Personal	Sir Name : Nasir Father Name : Allah Yar Date of Birth : 7th May 1972 Religion : Islam Nationality : Pakistani NIC # : 33202-9018070-5 Marital Status : Married Address : Department of Statistics & Mathematics, Pir Mehr Ali Shah Mehr Ali Shah Arid Agriculture, University Rawalpindi, Pakistan. Contact No. : +92 51-9062209,+03345575112 E-mail : nasir.arid2hotmail.com Web Address : http://www.uaar.edu.pk GENERAL INTEREST ❖ Reading books, Computer Islamic magazine, to play Badminton. Academics ▪ MS Statistics from International University Islamabad 2015 with 74% 1st. ▪ MSc. Statistics from University of Agriculture, Faisalabad 1997 with 68%/1st. ▪ BSc. from University of the Punjab in 1994 with 60% / 1st . ▪ FSc. Faisalabad Board in 1991 with 61% / 1st. ▪ Matric (Science) from Sargodha Board in 1988 62%./ 1st

	COMPUTER SKILLS ▪ Ms-Word, Ms-Excel, Ms Access, Power Point ▪ Internet Explorer, Outlook Express ▪ Data Analysis (Minitab, Mstat-C, SPSS)
Experience	JOB EXPERIENCE ❖ Presently working as a Lecturer in the Department of Statistics & Mathematics, Pir Mehr Ali Shah Mehr Ali Shah Arid Agriculture University, Rawalpindi since 9th September 2008.
Honors and Conferences attended:	
Graduate Students	
Service Activity	TEACHING RESPONSIBILITIES ❖ At the under graduate classes ➤ Introduction to Statistics ❖ At post graduate classes ➤ Sampling Techniques ➤ Statistical Quality Control & Reliability ➤ Operations Research ➤ Population Analysis ➤ Theory of Matrices & numerical Analysis ➤ Experimental Design RESEARCH DUTIES ❖ To assist the post graduate students to develop research design, data collection, analysis of data and in thesis writing.
Publications	17
Brief Statement of Research Interest	Sampling Techniques, Statistical Quality Control & Reliability, Operations Research, Non parametric

FACULTY RESUME

Name:	FARYAL
Personal:	Designation: Lecturer D/o Ameer Amjad, DOB: 1 st October, 1990
Experience:	Teaching: 07Years
Honors and Awards	No.
Memberships	02
Graduate Students Postdocs Undergraduate Students Honor Students	- - -
Service Activity	Teaching
Brief Statement of Research Interest	Wavelet Analysis, Coherency
Publications	03
Research Grants and Contracts	No
Other Research or Creative Accomplishments	No
Selected Professional Presentations	No