

PIR MEHR ALI SHAH
ARID AGRICULTURE UNIVERSITY
RAWALPINDI



SELF ASSESSMENT REPORT 5TH CYCLE (2014-16)

Department of Mathematics & Statistics

M.Phil Statistics

Program Team:

Dr. Muhammad Hanif (Coordinator)
Chairman

Dr. Saima Mustafa (Member)
Assistant Professor

Dr Muhammad Jamal (Member)
Assistant Professor

Dr Saadia Masood (Member)
Assistant Professor

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INTRODUCTION

The department of statistics PMAS-University of Arid Agriculture has a forceful pledge to research and education. The Division has approbated M.Phil program in 2010 for the further up gradation its range of exploration and in Fall-2013 the office has started M.Phil evening program. Currently 75 students are enrolled in this discipline. The center research areas of M.Phil statistics is based on Survey Sampling, Operational Research, Time Series Analysis, Probability and Stochastic analysis, Bayesian Analysis and Mathematical Statistics. The department is specialized in the above discussed research areas so as the result of dedication and commitment of department, a number of data analysts in these fields have been serving in Pakistan and even beyond borders.

The department upgrades its courses and research according to the latest advancements regularly. According this Self Assessment Report (SAR) is based on eight criteria.

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

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

Mission Statements of the Program

The aim of the statistics department is to train creative, up to date Statisticians who are equipped with mathematical statistics, statistics, mathematics and computer applications supported by social sciences courses such as sociology, anthropology and economics and who can use all information in all relevant cases when necessary.

Objectives of Programs

1. The purpose of Statistics deals with all core courses applicable to Statistical Methods. Its aim is to give the essentials of all controls applicable to study like Experimental Designs, Sampling Techniques, Bayesian Analysis, Estimation and Testing of Hypothesis, Probability and Stochastic Analysis, Operations Research Models. The department endeavors to put forward basic and applied education to the learners at all stages of study in concerned specialized fields.

2. Another important aim of M.Phil. project is to move on the research in the diversified fields. M.Phil. researchers will convey exclusive **inquires** about on the fulfilment of their degrees. Thus, the advance knowledge will produce more motivations towards the concerned fields. Ultimately, it will result a modified assessment ethnicity in Pakistan, which in return; would provide sound establishment to the nation's advancement.
3. To give to the development of new statistical methodology to address substantive problems and to support the use of these techniques through publications in both statistics and subject-matter journals.

Outcomes:

1. The future plan of statistics is to train creative, contemporary actuary candidates who are equipped with actuarial mathematics and statistics in the subject of Statistics is the need of the day. Degree holders can join open and private parts offices like instruction, commonplace and government authorities of Statistics, Federal Bureau of Statistics, The State bank of Pakistan, Agriculture statistics and NADRA; and so forth. The division expects to begin the PhD program on having more PhD faculty members.
2. The Program aims to build a Data Analysis Center, where we may suggest particular and need based courses for the persons in and outside the University.

Standards:

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

The main objectives of the department are as below:

- The development and extension of the Department of Statistics on existing lines by enlarging and utilizing profoundly competent educating faculty.
- To formulate an examination situated atmosphere both for learners and educators.
- To practice the understudies for job hunt as well as with the point of granting genuine information.

- To motivate the learners for higher capability and specialized skills by utilizing their expert degree.

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

- The main obligation of the tutor is to inculcate desire for high quality research. The department of statistics retains a superb environment of research and education.
- The students are being taught in the department with full sincerity and in a friendly way so as to motivate them to seek knowledge and to become productive citizens of the society.
- The department is appointing highly qualified and professional teachers. In addition to this most of the faculty members are already enrolled in PhD research programs to increase their qualification and professional skills.

PROGRAMME OBJECTIVES ASSESSMENT

Table 1: Program Objective Assessment

Sr. #	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	The development and expansion of the Program of Statistics on current lines	By surveys and having views from the students.	Throughout the semester.	Teachers have communication to local universities and foreign institutes	By increasing and employing highly qualified teaching faculty.
2	To provide the students higher qualification and to instruct them with impart of new knowledge.	Through teacher student’s conversations.	Continuous activity.	New courses to be included in curriculum. The need of high tech lab and updated library.	Endorsement of new curriculum integrated approaches. The execution of high tech lab

3	To educate the students of departments other than Statistics the applications, tools and techniques of statistics in their disciplines.	The present requirement to make subject more practical.	Continuous activity.	Teaching skills should be developed and modified	The application of better and advanced teaching skills with applied knowledge.
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PROGRAMME LEARNING OUTCOMES

All the students in Statistics possess the ability of

1. Growing and enhancing prominent communication abilities by presentations, oral discussions and through survey and seminars.
2. Subjects are planned and revised according to the up to date techniques which are based on 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 Generate True Researchers and Professionally Trained Students:

The core and primary plan of the program is to produce students who are skillful and competent of applying their statistical understanding and computational practices in practical situations.

2. To Develop the Vital Knowledge and Reinforce the Basis:

To progress and modernize the basic and applied knowledge and proficiency of the students in noteworthy field utilizing advanced logical tools, techniques and cogs and to strengthen the basis in statistical sciences.

3. To Make Statistics a Feasible Discipline for Other Disciplines:

To lessen the gap between statistics and other sciences with the relevance of advanced techniques and updated research.

4. Persuading the Students to Carry Out Research in Realistic Areas:

The need is to broaden mores of research in teachers as well as in the students not only from the field of statistics but from all the other disciplines and to stimulate them to practice true knowledge. To instruct and supervise the students while studying and doing research in practical and cost-effectively thematic regions. To reinforce and rationalize the department with amalgamation of knowledge in related fields like Mathematics and Economics etc.

5. To Activate higher Qualification and Research:

It is the function of the program to offer not only the vital education of the subject but also to make available the prospects for students of getting higher qualification in advanced fields of research. This is one of the goals of the program to initiate M.Phil and henceforth PhD classes for the university students.

Main factors of intentional plan to accomplish mission and goals

1. An extensive range of the core and elective subjects proffered in the program assist the students to gain competently sound and skillful education. Very valuable and sound teaching scheme lying on experience and vision gathered from world reviews, literature, innovative proceedings, symposia and workshops, etc is applied especially in the early semesters. The work load should be segregated carefully.
2. Increased study trips are useful to have an idea of the practical applications of the subject. Renewing the syllabus by including more practical and proficient contents.
3. Research seminars and presentations are carried out frequently in the department. The department is also looking forward to offer incentives for research publication in scientific papers, books and manuals 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 findings obtained from the department.

Standard 1-3: The results of program's assessment and the degree 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 foremost strength of the Program is the accessibility of highly qualified teachers with full association of their particular subjects.
- The curricula are being updated by including more applied and professionally sound courses.
- The establishment of fully equipped computer lab is considered to be extremely imperative if we desire to convey real education equipped with advanced statistical tools. Necessary steps are being taken in this respect.

Skills and Capabilities Reflected in performance as Statisticians:

- Students develop capacity to apply knowledge of Statistics and to work as experts, to build confidence and communicate effectively in writing, oral and expression to use recent tools, techniques and skills for their profession, formulate and intend the experiments and to work efficiently in a team, to handle data analysis problems and develop ability to recognize future requirements.

Limitations Detected:

- The computer lab wants instantaneous awareness as it should be equipped with state of the art equipment as soon as possible without which the concept of the updated research is unproductive. The latest versions of personal computers with advanced statistical packages and softwares are intensively required.

- Latest literature, reviews, journals and books from the authentic scientists are hardly available.
- Highly trained faculty is always needed in the department. There is a need for short foreign training to faculty members.

Major Future Improvement Plans

- Overall development of knowledge and skills of faculty members in relation to the latest global advancements in the discipline is going on through different PhD research programs and collaborative research project within Pakistan. Most of the teachers of the department are active in improving their skills.
- To provide quality education in Statistics department through audio visual aids and modern tools along with provision of latest literature, journals, books, reviews and access to internet.
- To increase the faculty members by utilizing highly proficient teachers and researchers.

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

Table 3: Quantitative Assessment of the Program (2014-2016)

Sr. #	Particular	No	Remarks
1.	M.Phil. Degree awarded	75	50 students joined. M.Phil. Program at different universities
2.	Students : Faculty ratio	1:4	Does not fulfill HEC criteria
3.	Technical : Non Technical ratio	1:3	Fulfils HEC criteria
4.	Research activities, short courses, workshops and seminars		Publications, seminar is conducted

Table 3 contains information about publications, seminar done by the students and faculty members.

Table 4: Present Performance Measures for Research Activities

Name of Faculty Member	Publications		
	Published	Submitted	Total
Dr. Muhammad Hanif	8	6	14
Dr. Saima Mustafa	6	6	12
Mr. Nasir Jamal	5	6	11
Dr. M. Jamal	5	5	10
Dr. Saadia Masood	3	3	6
Mr. Nasir Ali	4	5	9

The evaluation process indicated high efficiency of system and satisfactory impact of outcomes. Admission criteria of M.Phil program is as follows

Table 5: Degree Requirements

Degree	Pre-requisites
M. Phil	M.Sc with 45% marks and GAT with 50% passing marks

Program Assessment Results:

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

A number of surveys based on the SAR questionnaires were initiated to evaluate the Program outcomes/graduates the department, since majority of the Statistics graduates enter research institutes and university, questionnaires were sent to them for their feedback. Maximum students filled the survey forms.

The evaluation process indicated high efficiency of system and satisfactory impact of outcomes.

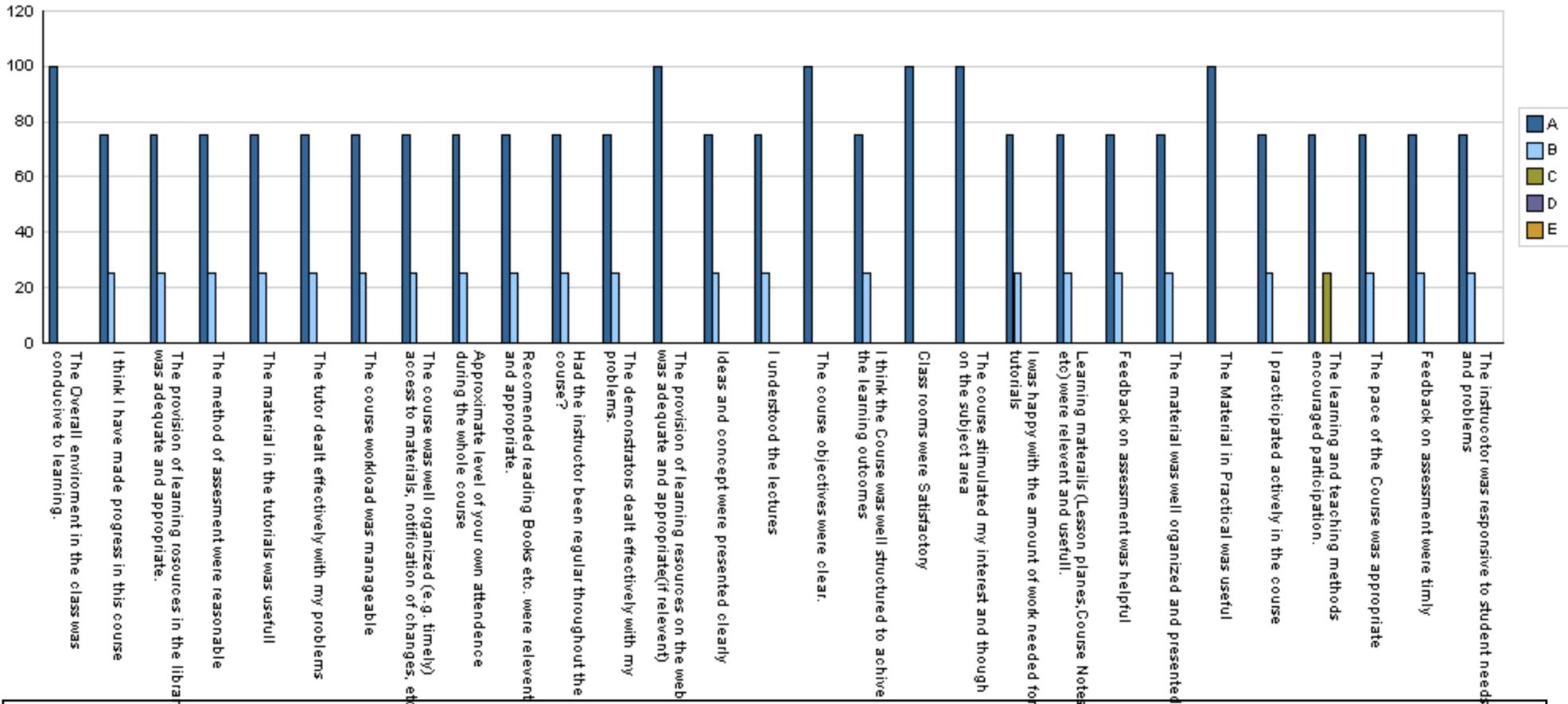
The following are evaluation survey report of different semesters from, (2014-2016) which are evaluated from the students.



Pir Mehr Ali Shah Arid Agriculture University

Session Name: FALL-14 **Performa 1**
Teacher Name: Muhammad Hanif
Course Name: Probability and Stochastic Process
Section: A **M/E:** E **Semester#** 1
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "the instructor is fair in examination; course material is modern and updated, etc ". About 23% were uncertain that "the subject matter presented in the course has increased your knowledge of the subject; course integrates theoretical course concepts with real-world applications, etc".



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

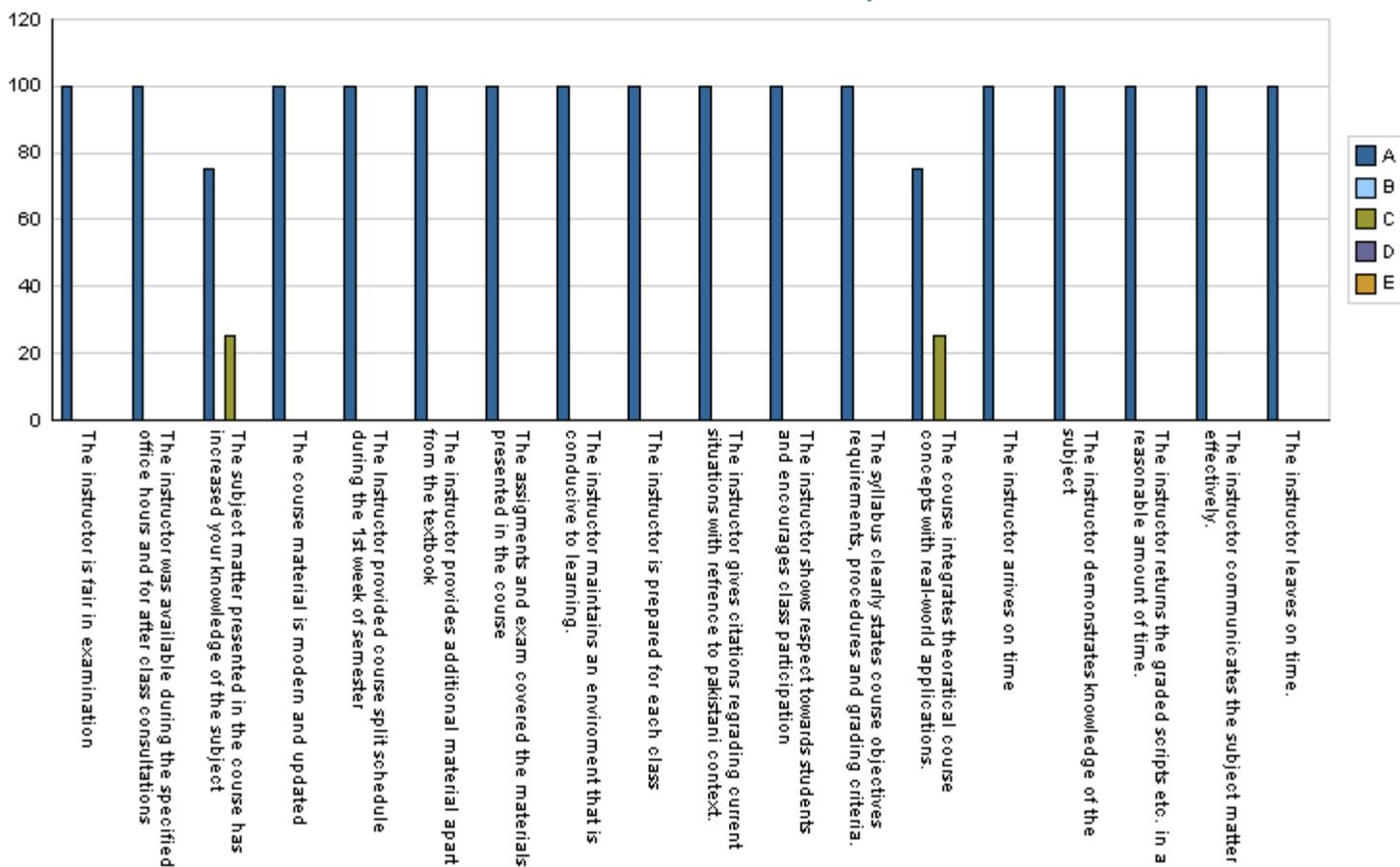
Session Name: FALL-14

Teacher Name: Muhammad Hanif

Course Name: Probability and Stochastic Process

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

Teacher Evaluation Graph



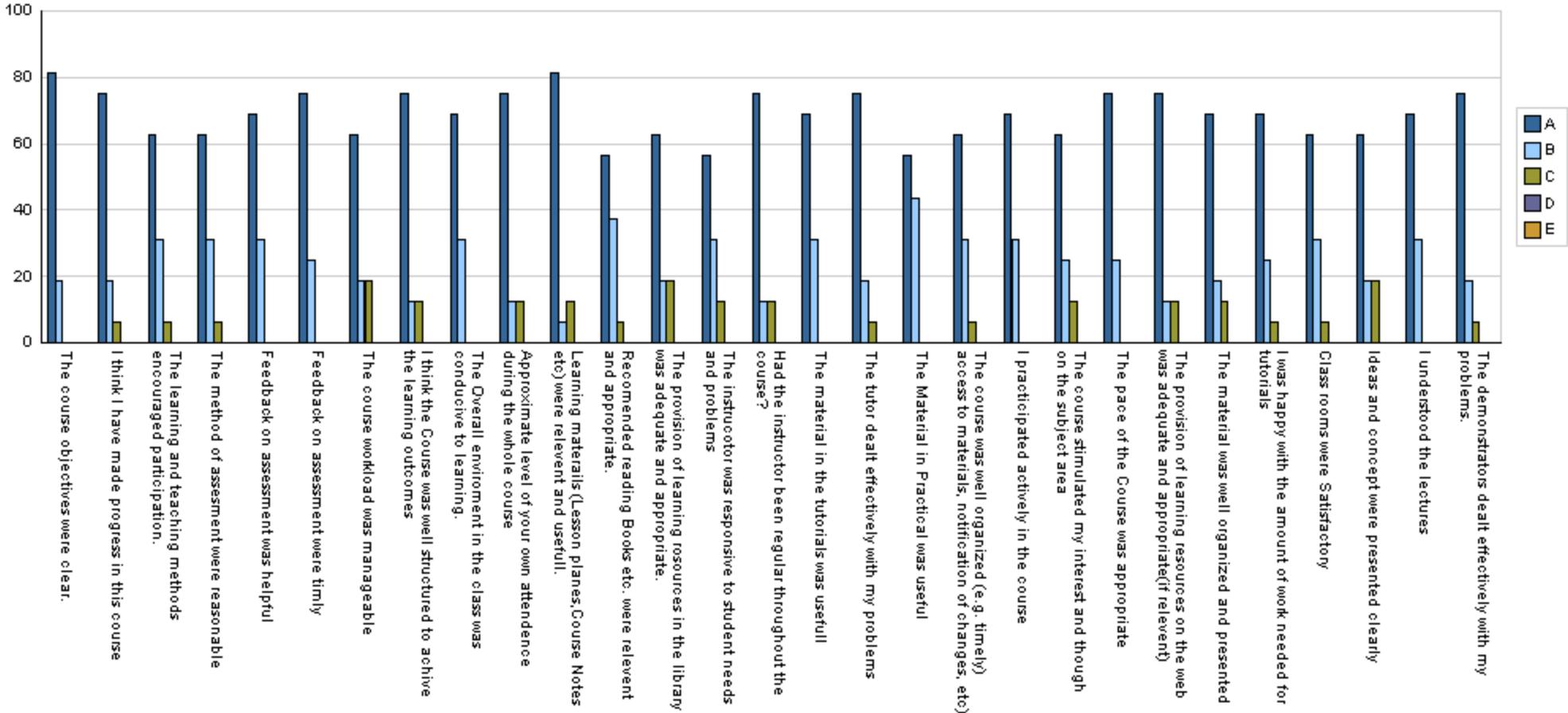
Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "the overall environment in the class was conducive to learning; class room were satisfactory, etc". About 23% were agreed that "I understand the lecture; course workload was manageable , etc". About 23% were Uncertain that "the learning and teaching methods encouraged participation".



Pir Mehr Ali Shah Arid Agriculture University

Session Name: FALL-14 **Performa 1**
Teacher Name: Muhammad Hanif
Course Name: Probability and Stochastic Process
Section: A **M/E:** M **Semester#** 1
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "the subject matter presented in the course has increased your knowledge of the subject; instructor arrives on time , etc". About 24% were agreed that "the instructor leaves on time; course material is modern and updated , etc". About 16% were Uncertain that "the instructor is prepared for each class; syllabus clearly states course object requirements, procedure and grading criteria, etc".



Performa 10

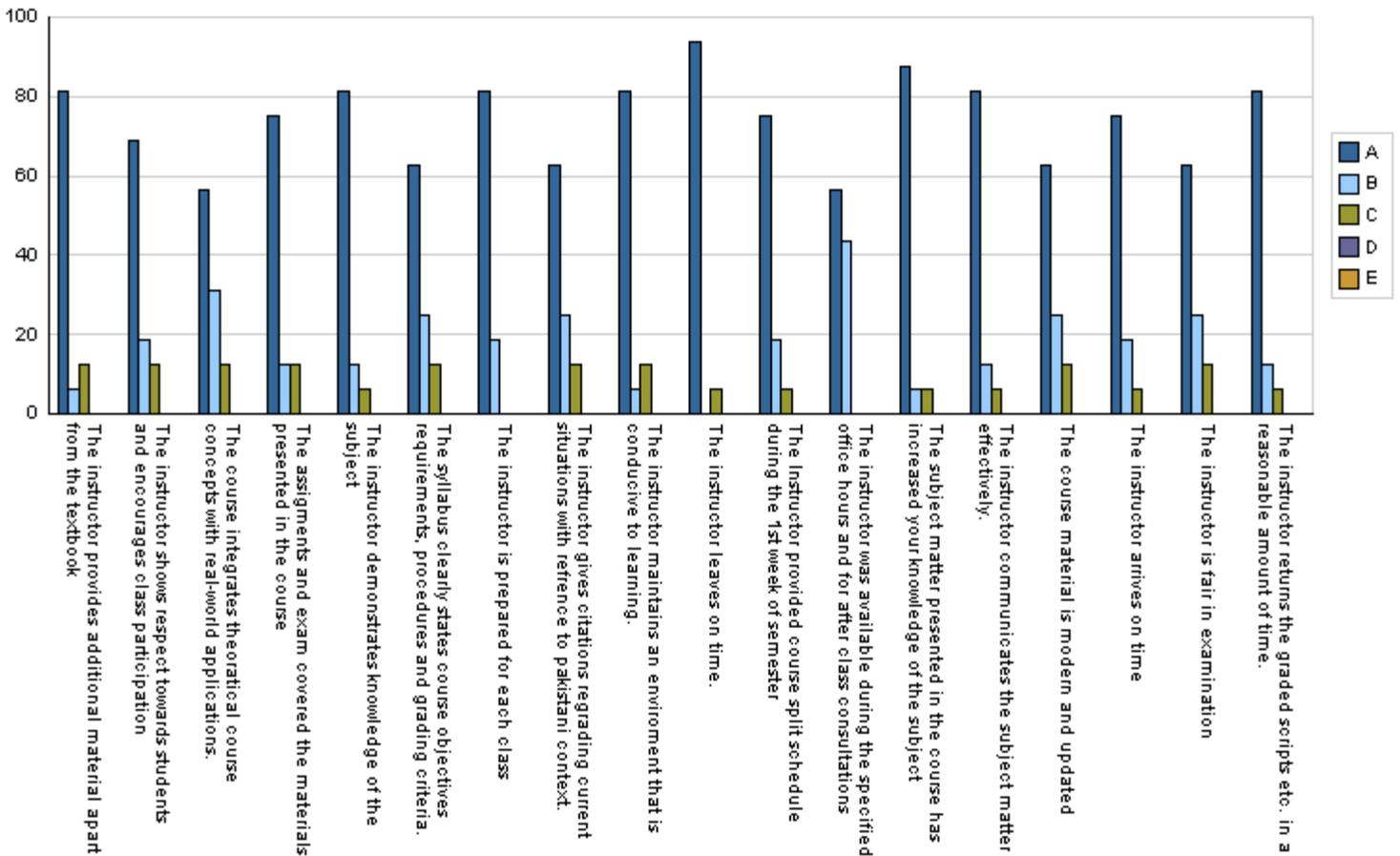
Session Name: FALL-14

Teacher Name: Muhammad Hanif

Course Name: Probability and Stochastic Process

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

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 80% students were strongly agreed regarding the question that "the course objectives were clear; learning materials were relevant and useful, etc". About 42% were agreed that material in practical was useful". About 19% were uncertain that " course workload was manageable; ideas and concepts were presented clearly,etc ".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-14

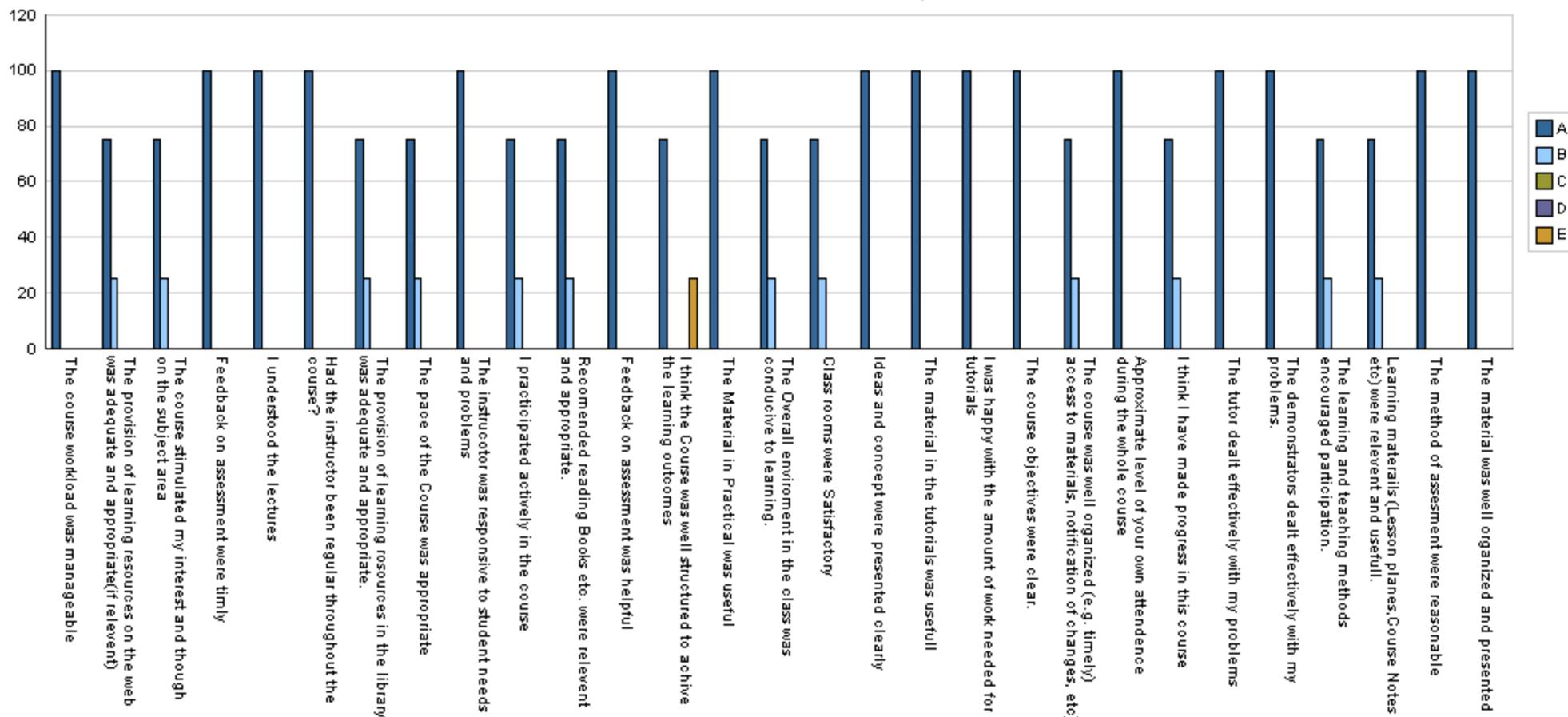
Teacher Name: Saima Mustafa

Course Name: Applied Numerical Analysis

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

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "the course workload was manageable; I understand the lecture, etc". About 24% were agreed that " the pace of the course was appropriate;class rooms were satisfactory, etc" . About 24% were disagreed that " I think the course was well structured to achieve the learning outcomes" .



Pir Mehr Ali Shah Arid Agriculture University Performa 10

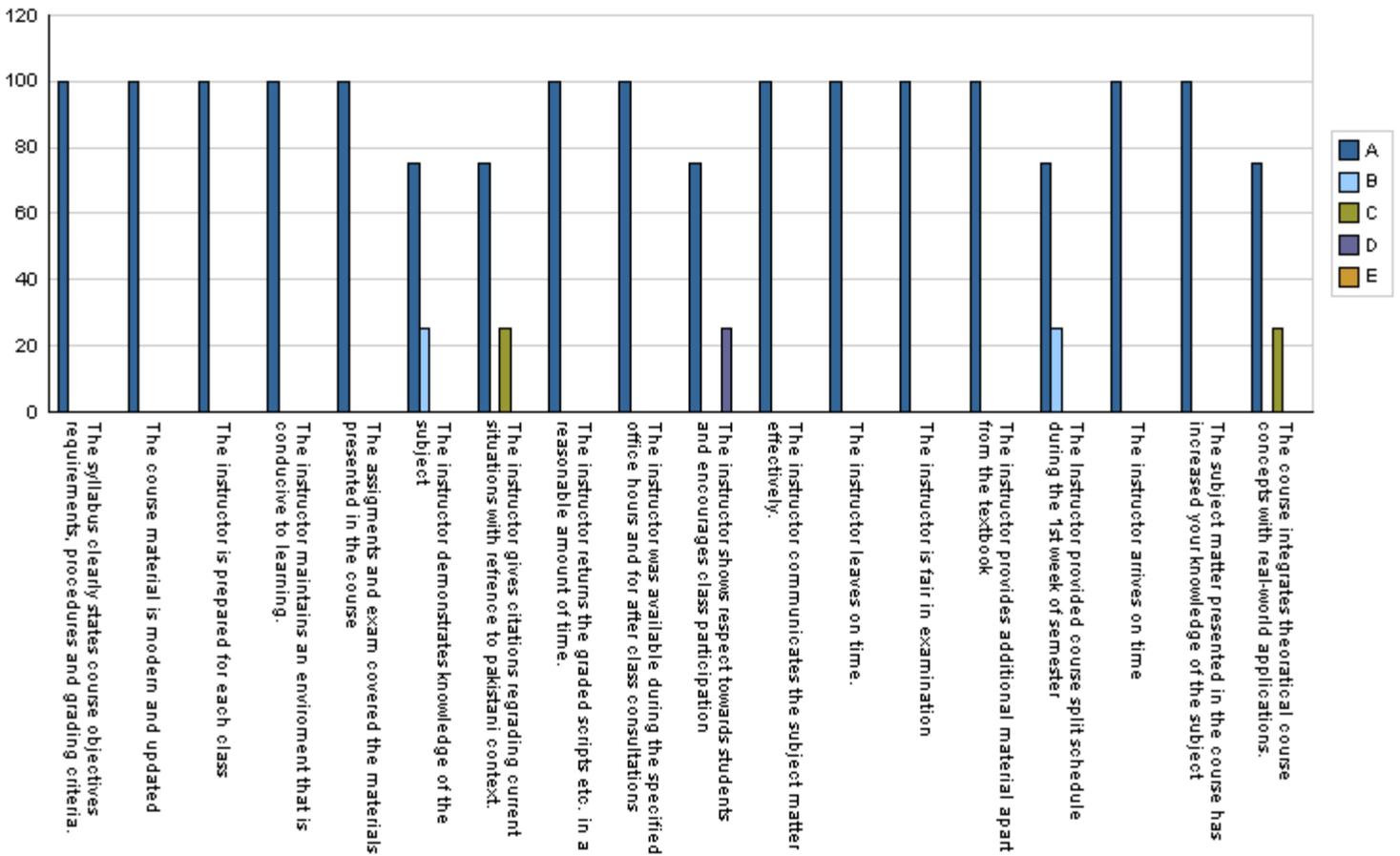
Session Name: FALL-14

Teacher Name: Saima Mustafa

Course Name: Applied Numerical Analysis

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

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that “the syllabus clearly states course objectives requirements, procedures and grading criteria; the course materials is modern and updated etc”. About 23% were agreed that “the instructor demonstrates knowledge of the subject; instructor provided course split schedule during the 1st week of semester , etc”. About 23% were Uncertain that “the instructor gives citations regarding current situations with reference to Pakistani context; course integrated theoretical course concepts with real-world applications ”.

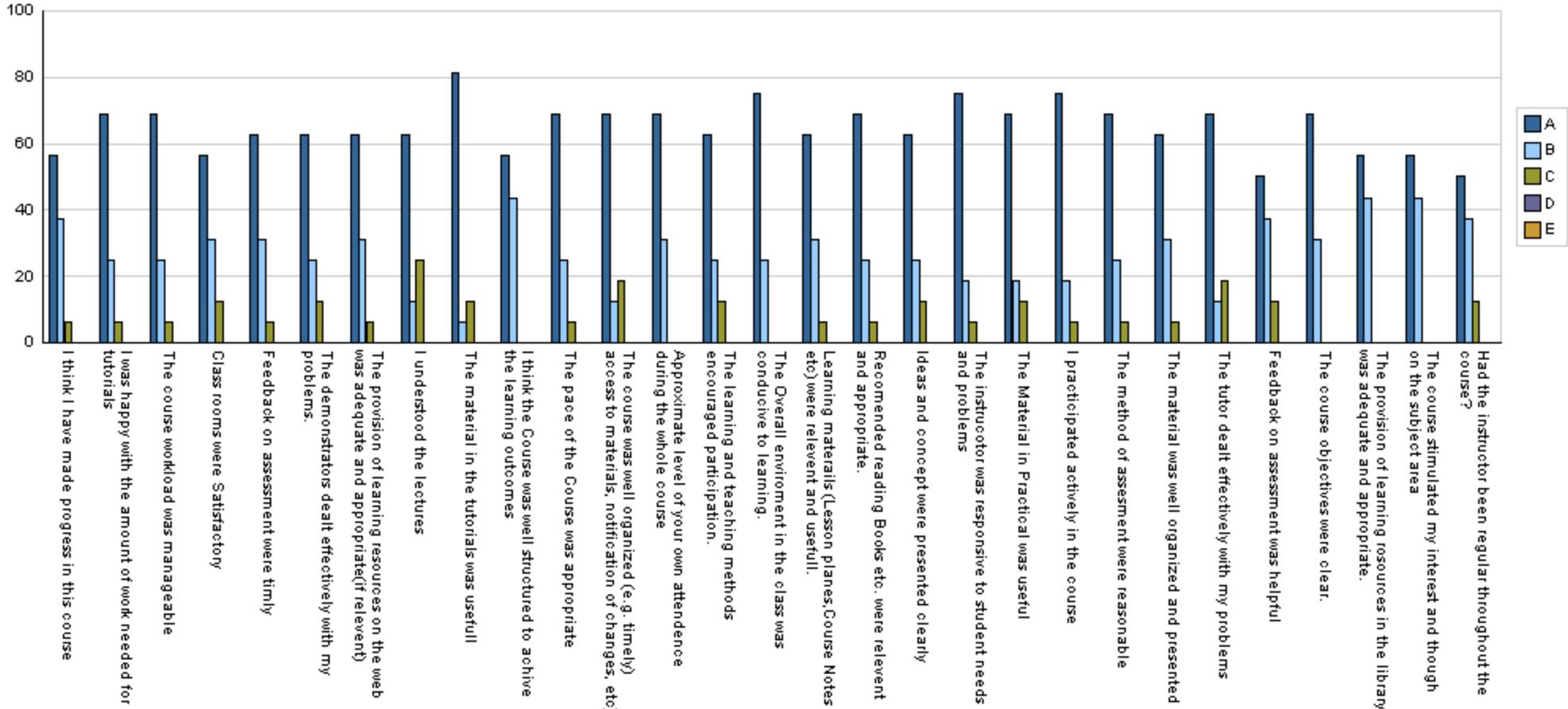


Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-14
Teacher Name: Saima Mustafa
Course Name: Applied Numerical Analysis
Section: A **M/E:** M **Semester#** 1
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.Phil(Statistics) Morning. About 80% students were strongly agreed regarding the question that "the material in the tutorials was useful". About 42% were agreed that "I think the course was well structured to achieve the learning outcomes; feedback on assessment was helpful, etc". About 23% were Uncertain that "I understand the lecture".



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Performa 10

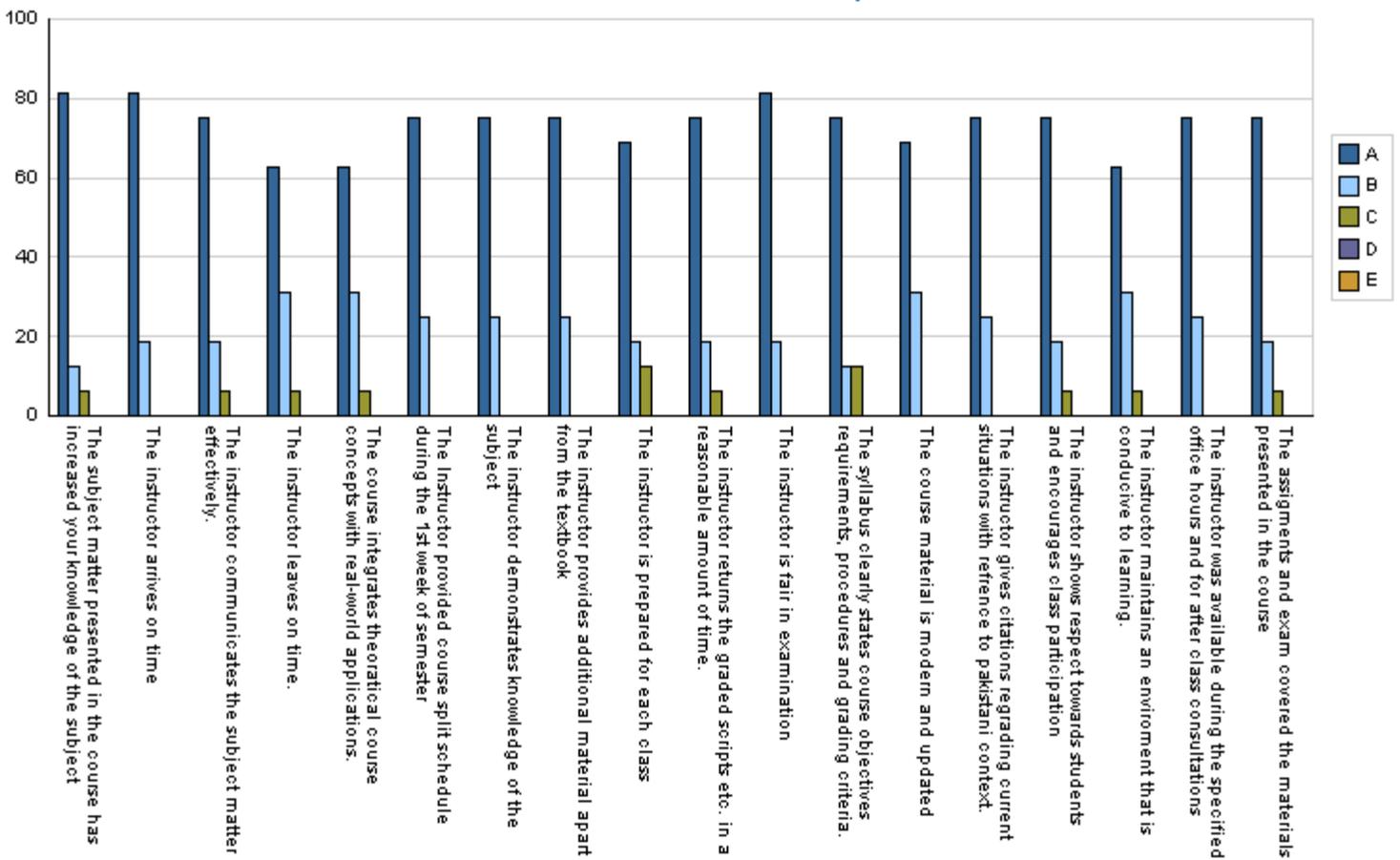
Session Name: FALL-14

Teacher Name: Saima Mustafa

Course Name: Applied Numerical Analysis

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

Teacher Evaluation Graph



Data were collected from 20 students of M.Phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "the subject matter presented in the course has increased your knowledge of the subject; instructor arrives on time , etc". About 24% were agreed that "the instructor leaves on time; course material is modern and updated , etc". About 16% were Uncertain that "the instructor is prepared for each class; syllabus clearly states course object requirements,procedure and grading criteria,etc".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-14

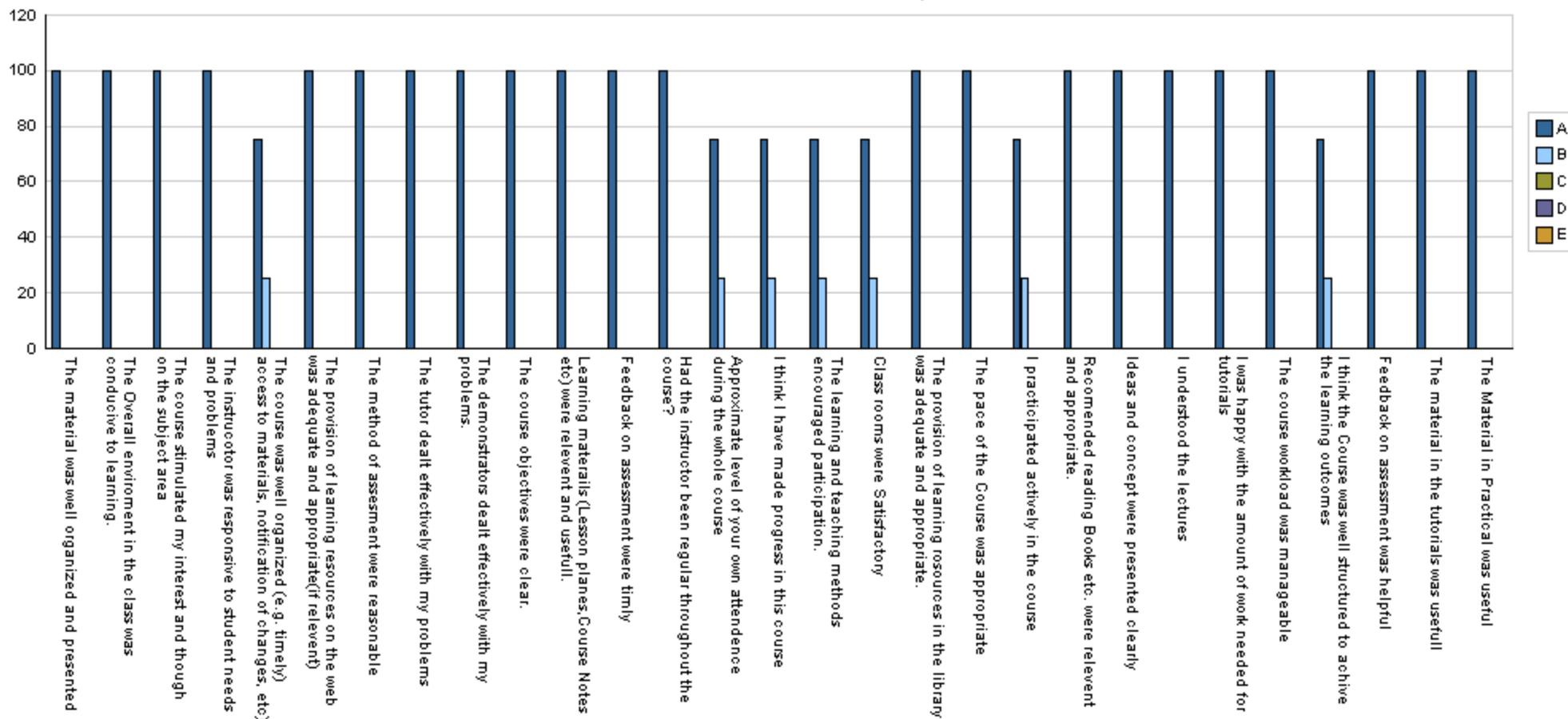
Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "I understand the lectures; course workload was manageable, material in the tutorials was useful, etc". About 13% were agreed that "I think I have made progress in the course; class room were satisfactory, etc".



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Performa 10

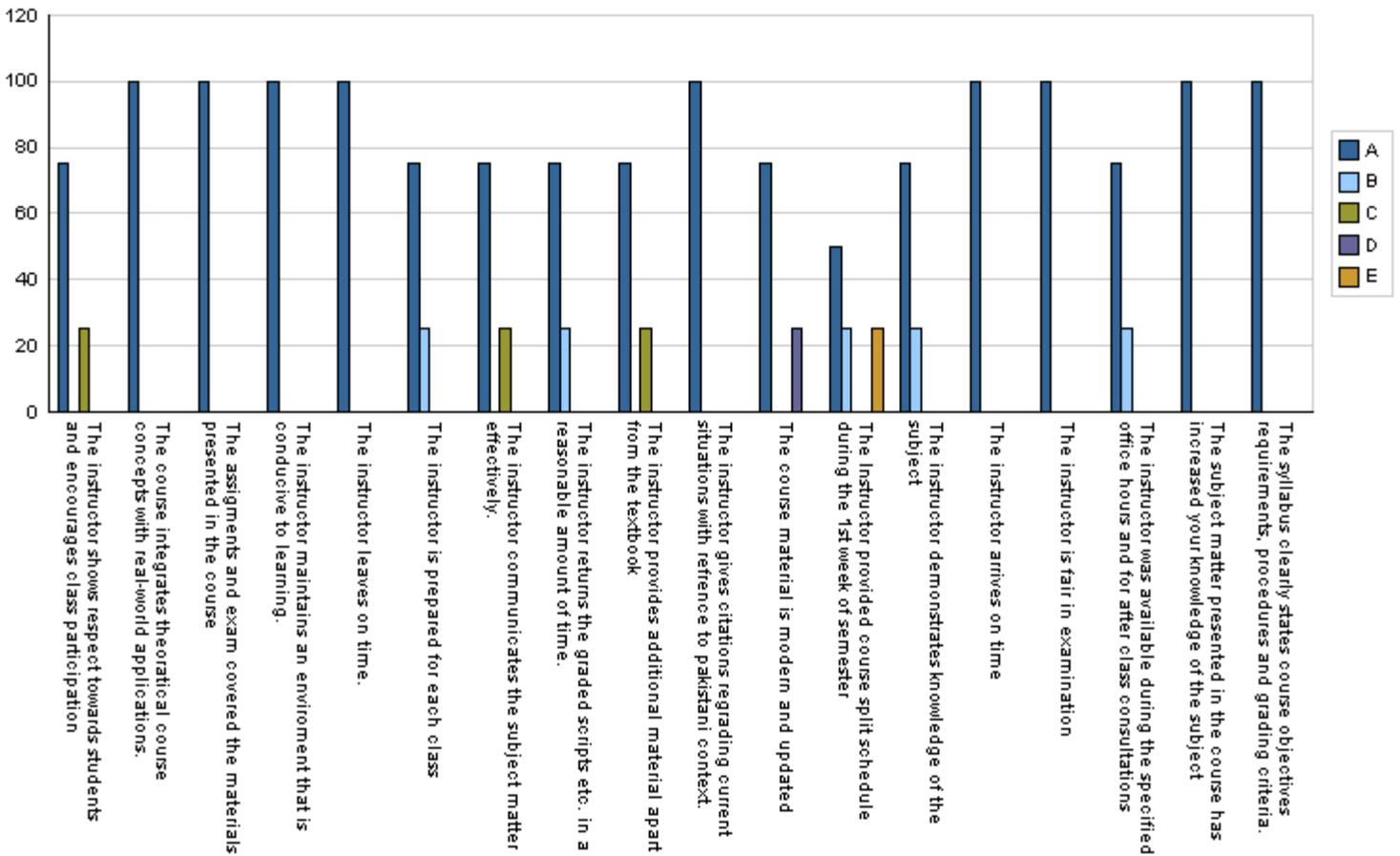
Session Name: FALL-14

Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "I understand the lectures; course workload was manageable, material in the tutorials was useful, etc". About 22% were agreed that "the course objectives were clear; I participated actively in the course, etc". About 22% were Uncertain that "course material is modern and updated".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-14

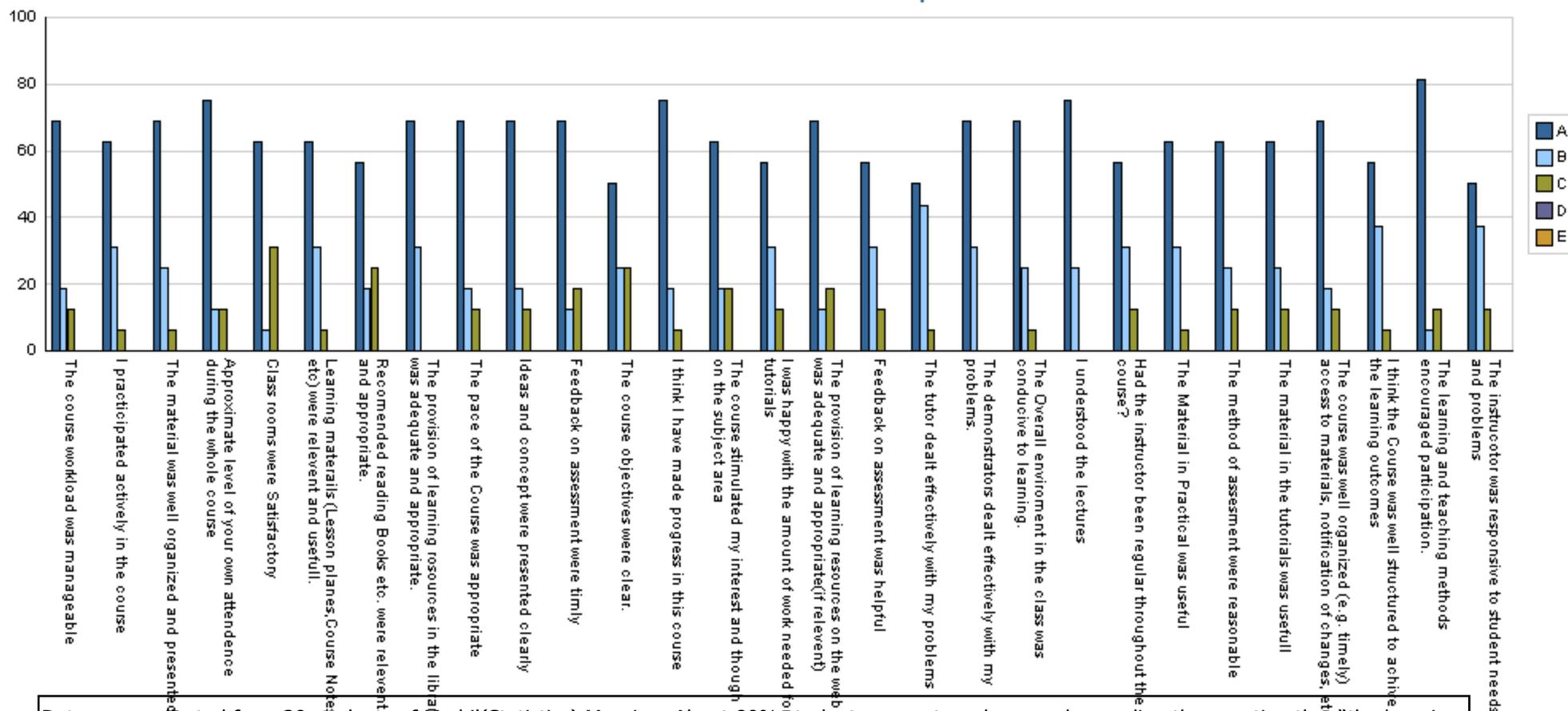
Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 80% students were strongly agreed regarding the question that "the learning and teaching methods encouraged participation". About 42% were agreed that "the tutor dealt effectively with my problems ". About 27% were uncertain that " class rooms were satisfactory".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

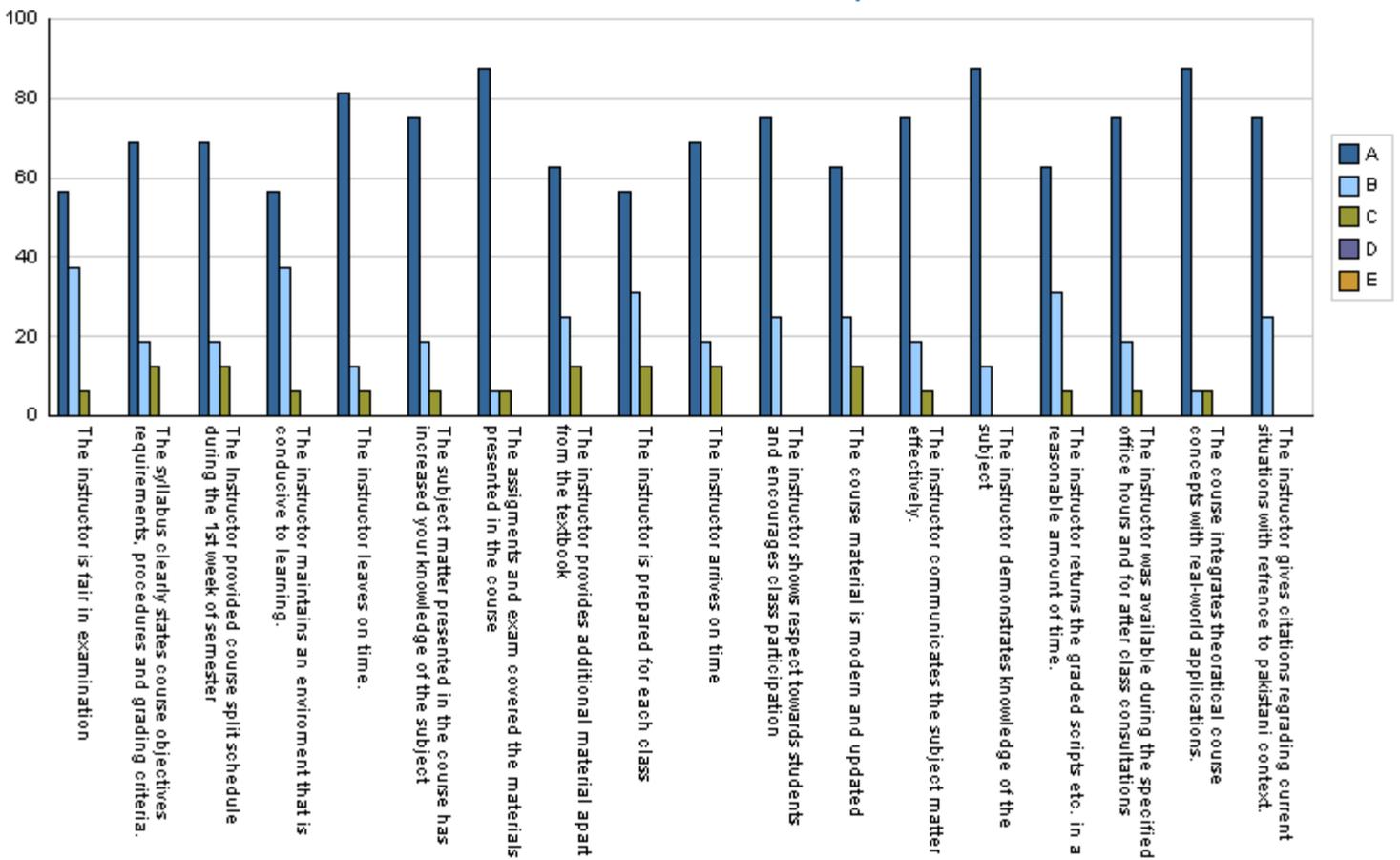
Session Name: FALL-14

Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 84% students were strongly agreed regarding the question that "the assignments and exam covered the materials presented in the course; instructor returns the graded scripts etc in a reasonable amount of time,etc". About 37% were agreed that " instructor is fair in examination; instructor maintains an environment that is conducive to learning,etc ".About 17% were uncertain that" instructor is prepared for each class; instructor arrives on time,etc".

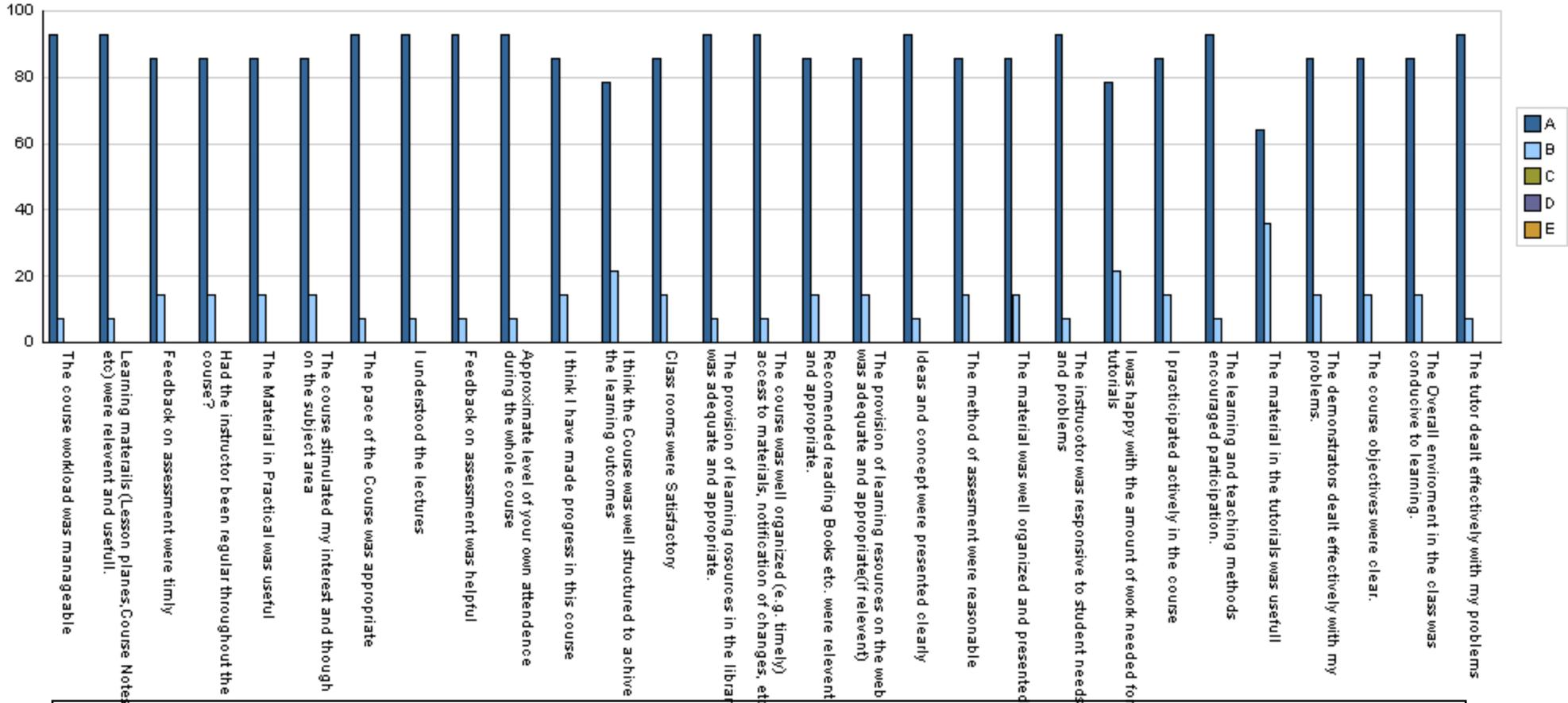


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Performa 1

Session Name: SPRING-15
Teacher Name: Muhammad Hanif
Course Name: Applied Smoothing Techniques
Section: A **M/E:** E **Semester#** 2
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 90% students were strongly agreed regarding the question that " the course workload was manageable; tutor dealt effectively with my problems , pace of the course was appropriate etc". About 37% were agreed that "the material in the tutorial was useful".About 8% were strongly disagreed that "I understand the lecture;ideas and concepts were presented clearly" etc.

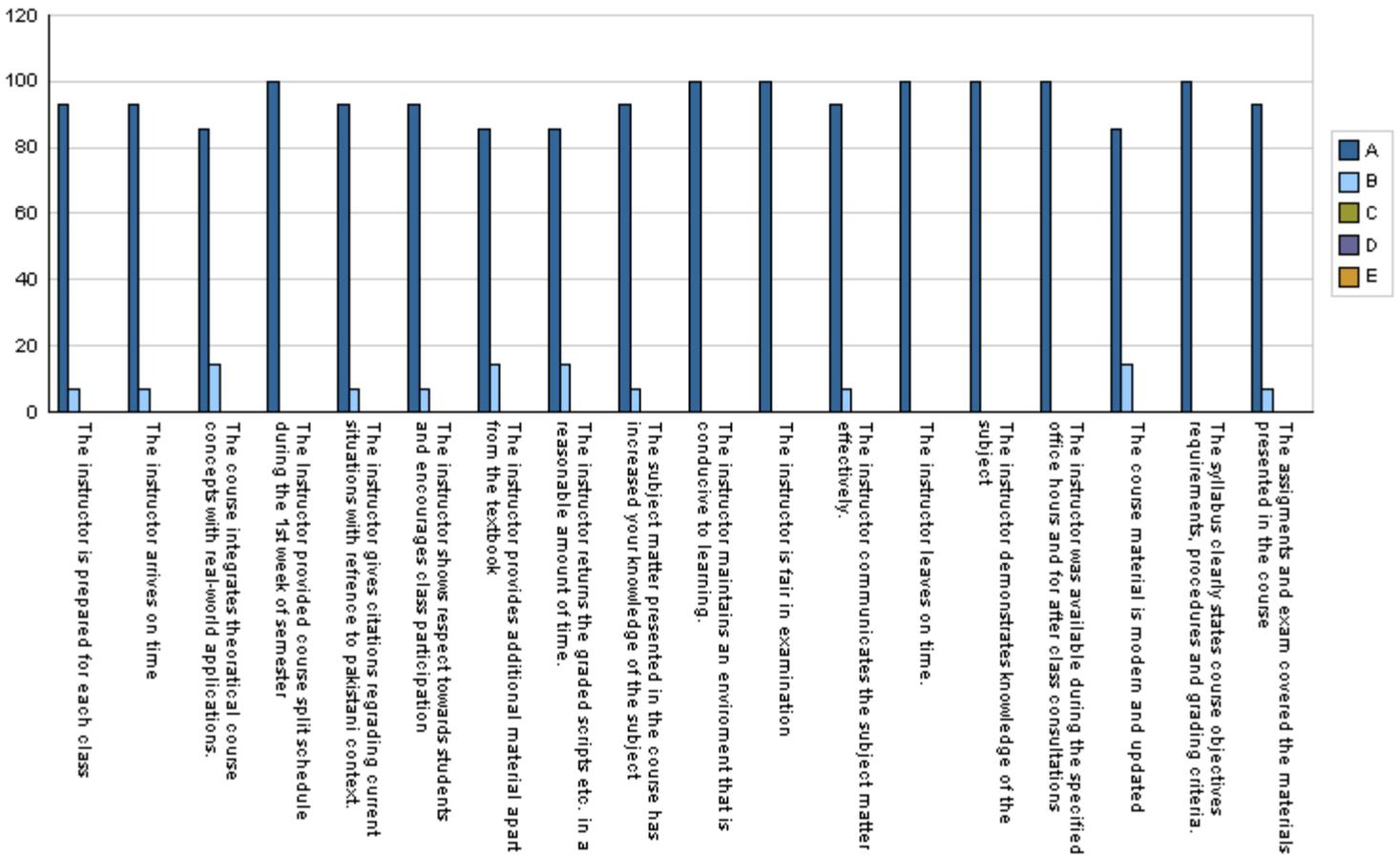


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-15
Teacher Name: Muhammad Hanif
Course Name: Applied Smoothing Techniques
Section: A M/E: E Semester#: 2

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "the instructor communicates the subject matter effectively; the instructor demonstrates knowledge of the subject,assignments and exam covered the materials presented in the course " etc.About 17% were agreed that "the course integrates theoretical course concepts with real-world applications etc".About 5% were strongly disagreed that "the instructor is prepared for each class;the instructor communicates the subject matter effectively"etc.

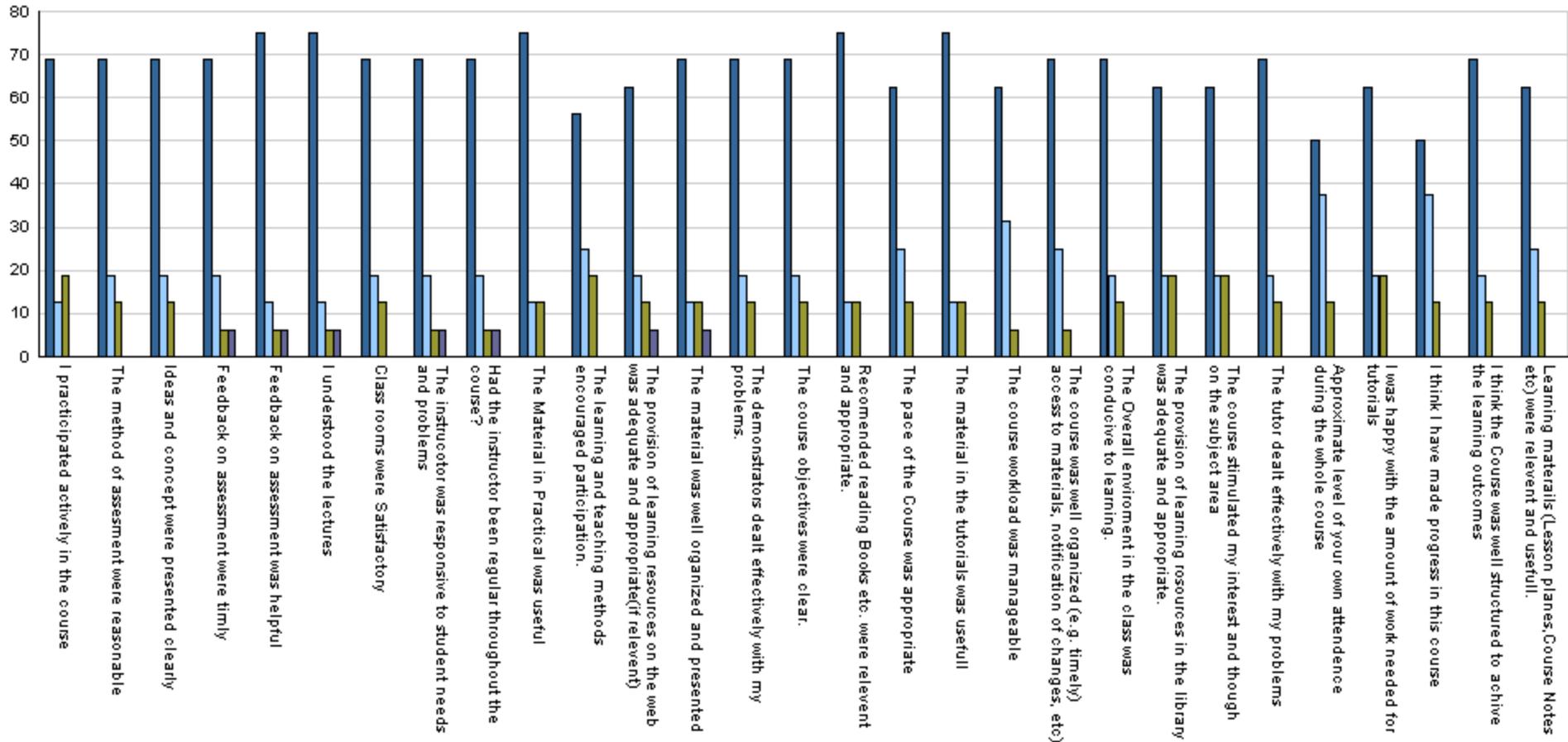


Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-15
Teacher Name: Muhammad Hanif
Course Name: Applied Smoothing Techniques
Section: A **M/E:** M **Semester#** 2
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 75% students were strongly agreed regarding the question that "feedback on assessment was timely; Material in Practical was useful, material in the tutorials was useful"etc.About 49% were agreed that "approximate level of uour own attendance during the whole course; I think i have made progress in this course, etc". About 6% were strongly disagreed that "feedback on assessment was timely; the material was well organized and presented etc".

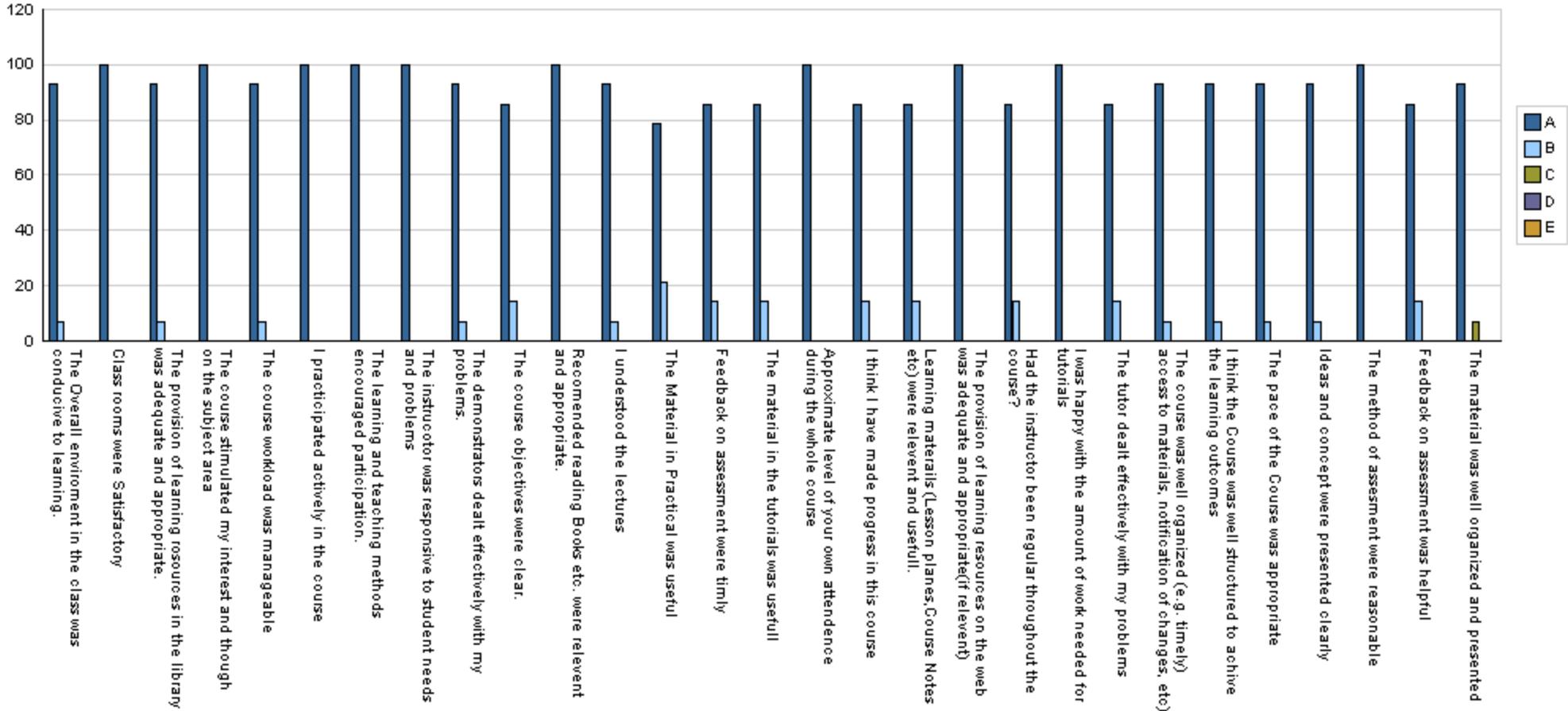


Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-15
Teacher Name: Saima Mustafa
Course Name: Operations Research Models
Section: A **M/E:** E **Semester#** 2
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 80% students were strongly agreed regarding the question that "instructor provided course split schedule during the 1st week of semester. About 35 % were agreed that "the instructor is prepared for each class;instructor provides additional material apart from the textbook, etc".About 8% were strongly disagreed that "the instructor communicates the subject matter effectively; instructor arrives on time,etc".

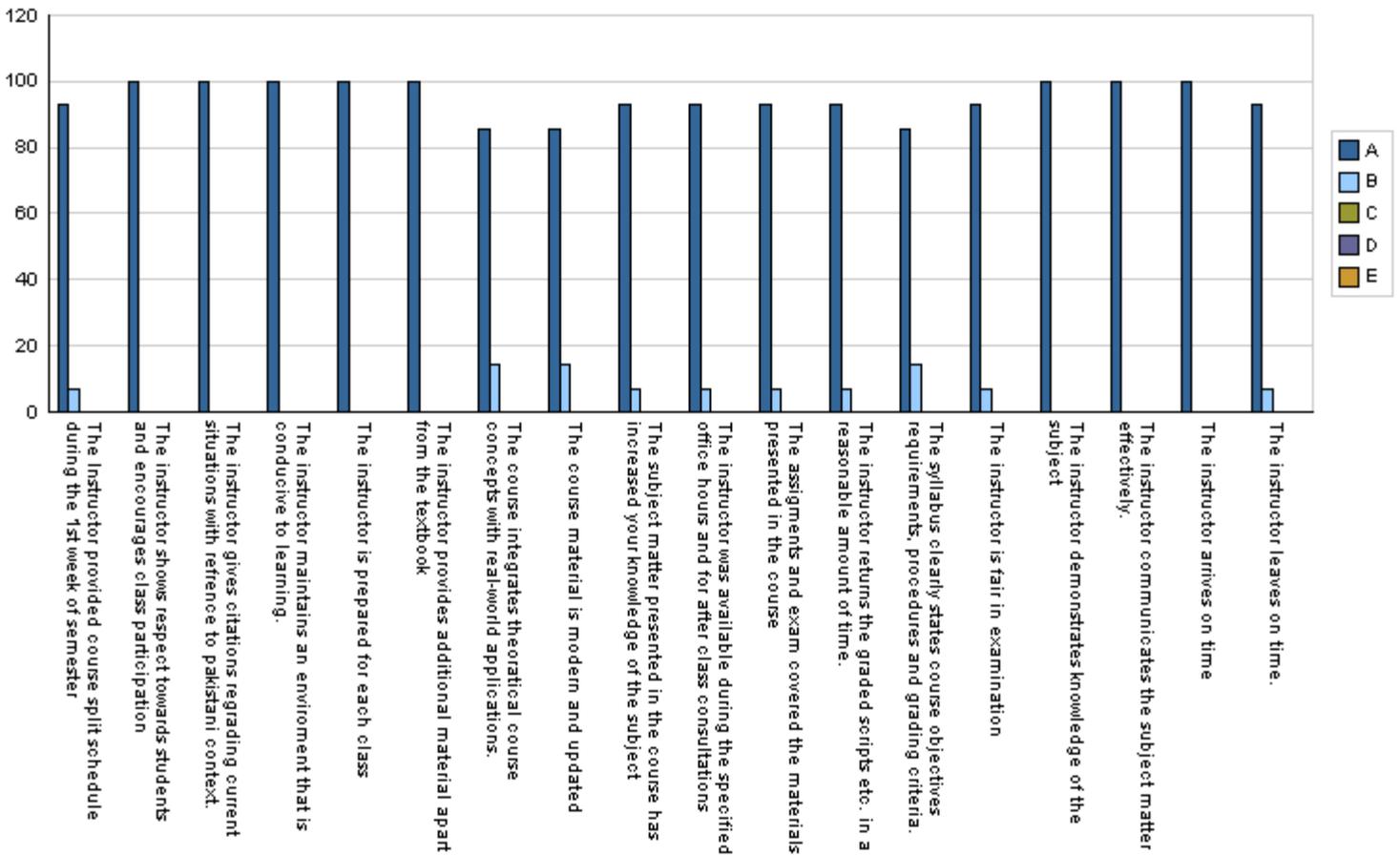


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-15
Teacher Name: Saima Mustafa
Course Name: Operations Research Models
Section: A **M/E:** E **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 80% students were strongly agreed regarding the question that "instructor provided course split schedule during the 1st week of semester.About 35 % were agreed that "the instructor is prepared for each class;instructor provides additional material apart from the textbook, etc".About 8% were strongly disagreed that "the instructor communicates the subject matter effectively; instructor arrives on time, etc".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

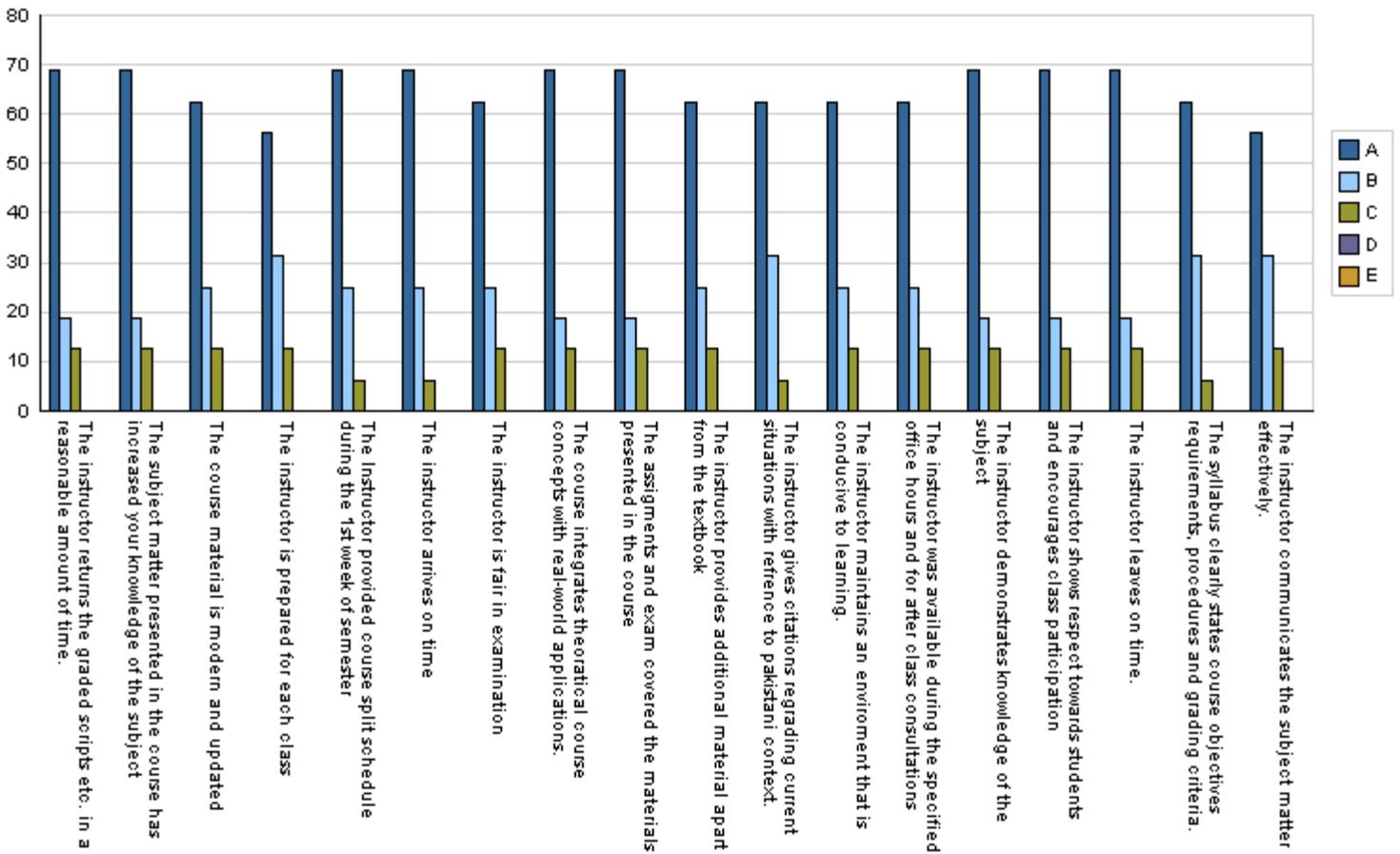
Session Name: SPRING-15

Teacher Name: Saima Mustafa

Course Name: Operations Research Models

Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "the instructor shows respect towards students and encourages class participation; instructor is presented for each class , instructor communicates the subject matter effectively,etc". About 15% were agreed that "syllabus clearly states course objectives requirements, procedures and grading criteria".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-15

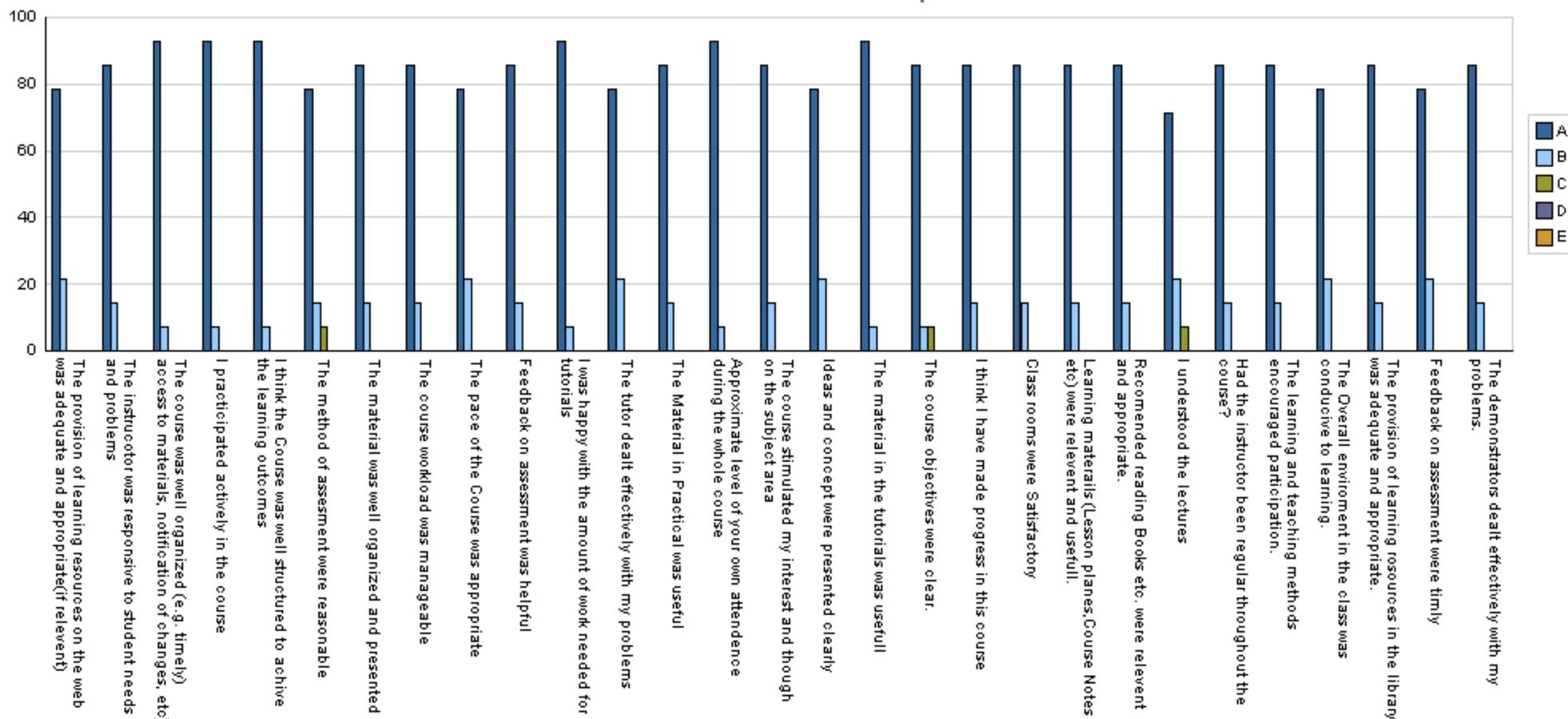
Teacher Name: Nasir Jamal

Course Name: Bayesian Analysis

Section: A **M/E:** E **Semester#** 2

Class: M.Phil (Statistics)

Course Evaluation Graph



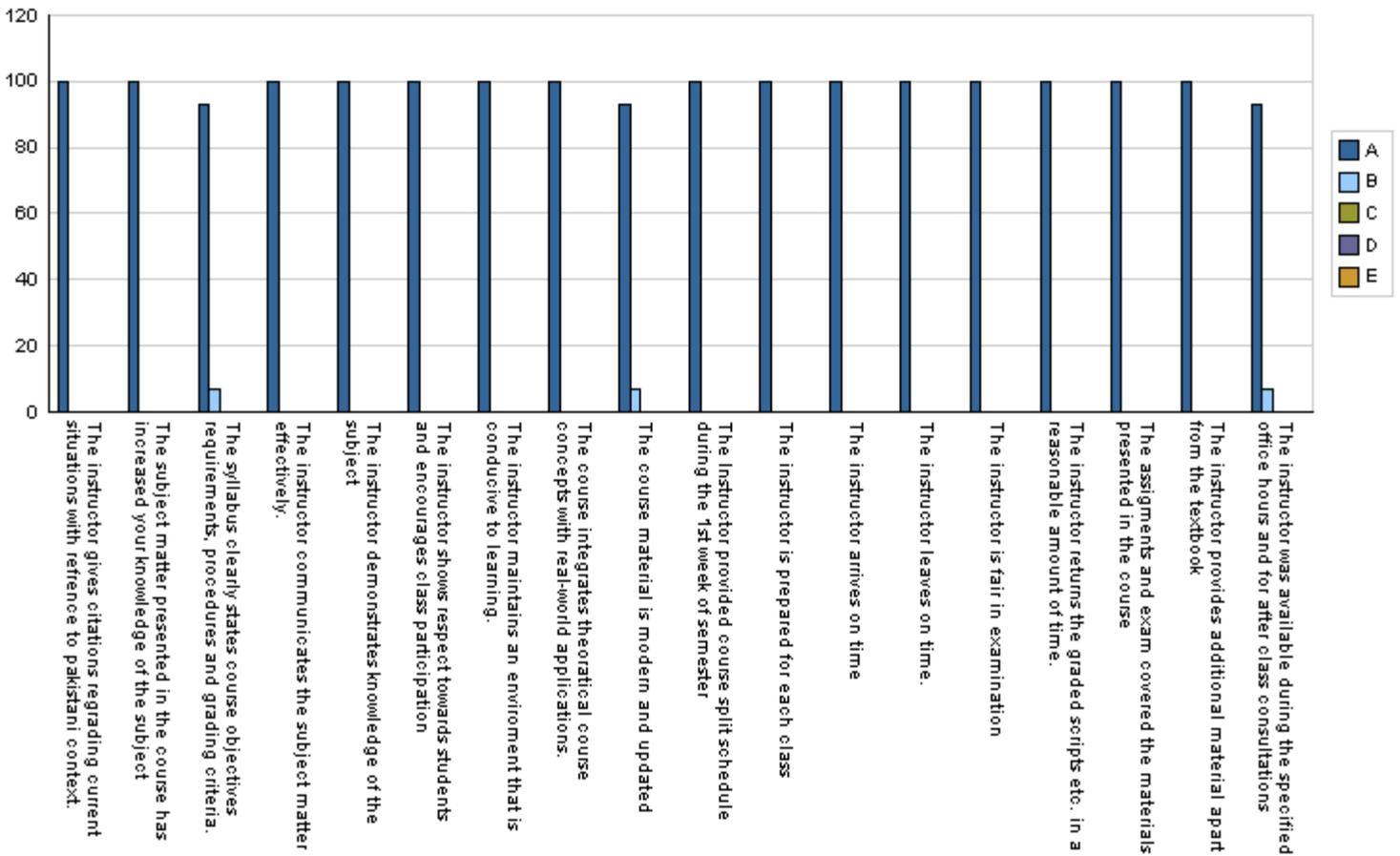
Data were collected from 15 students of M.phil(Statistics) Evening. About 90% students were strongly agreed regarding the question that "I was happy with the amount of the work needed for tutorials; I participated actively in the course , the instructor was respected to student needs and problems,etc"." About 20% were agreed that "the provision of learning resources on the web was adequate and appropriate; I understand the lecture, etc".About 8% were Uncertain that "the method of assessment were reasonable; course objectives were clear,etc".



Pir Mehr Ali Shah Arid Agriculture University Performa 10

Session Name: SPRING-15
Teacher Name: Nasir Jamal
Course Name: Bayesian Analysis
Section: A **M/E:** E **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 100% students were strongly agreed regarding the question that "the instructor gives citations regarding current situations with reference to Pakistani context ; instructor arrives on time, instructor leaves on time,etc".About 8% were agreed that "the syllabus clearly states course objectives requirements, procedures and grading criteria ; course material is modern and updated, etc".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

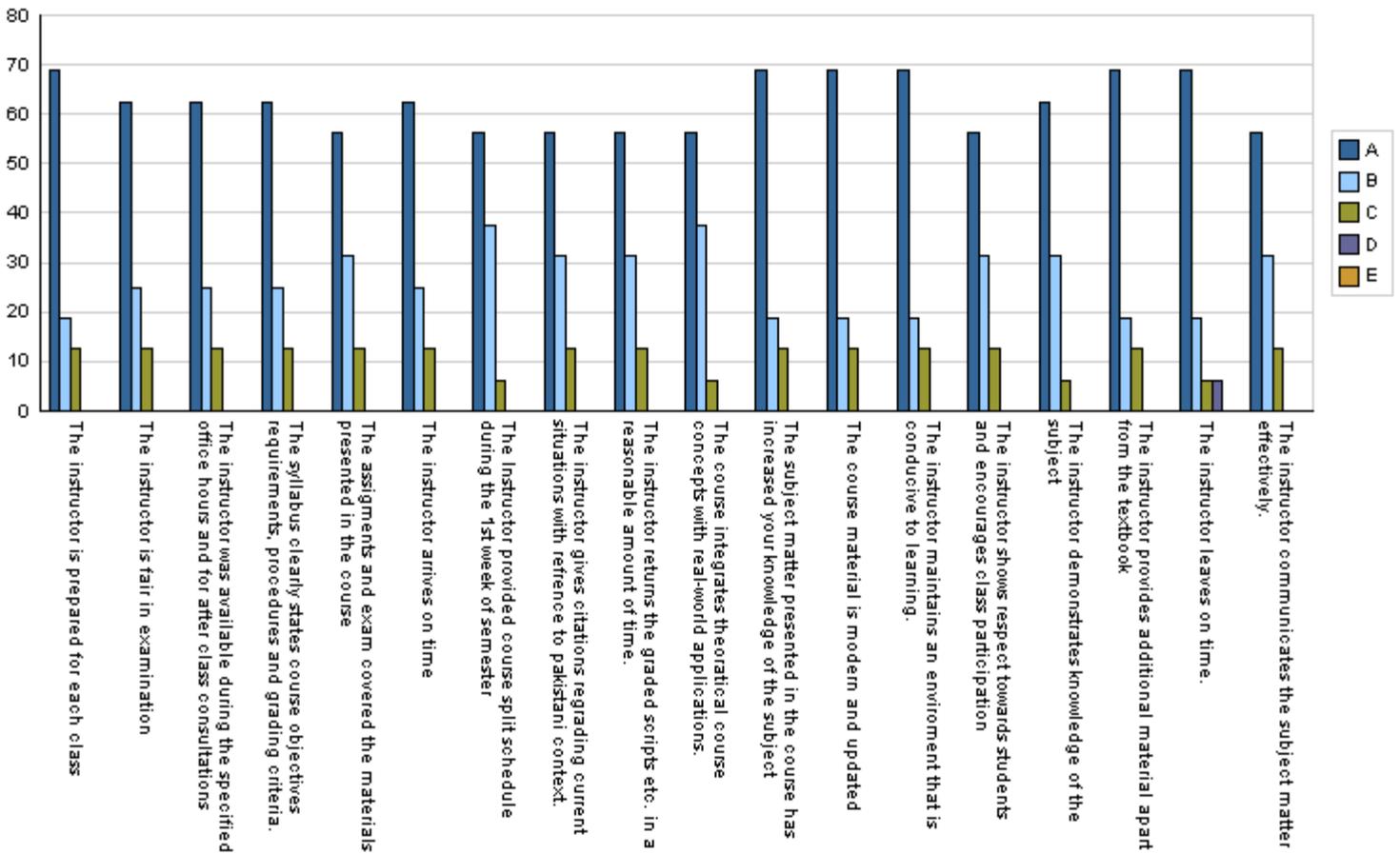
Session Name: SPRING-15

Teacher Name: Nasir Jamal

Course Name: Bayesian Analysis

Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 69% students were strongly agreed regarding the question that "the instructor is prepared for each class; instructor leaves on time, instructor provides additional material apart from the textbook,etc".About 46% were agreed that "the course integrates theoretical course concepts with real-world amount of time; instructor provided course split schedule during the 1st week of semester, etc". About 12% were uncertain that "the instructor arrives on time ;assignments and exam covered the materials presented in the course, etc". About 7% were uncertain that "the instructor leaves on time".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-15

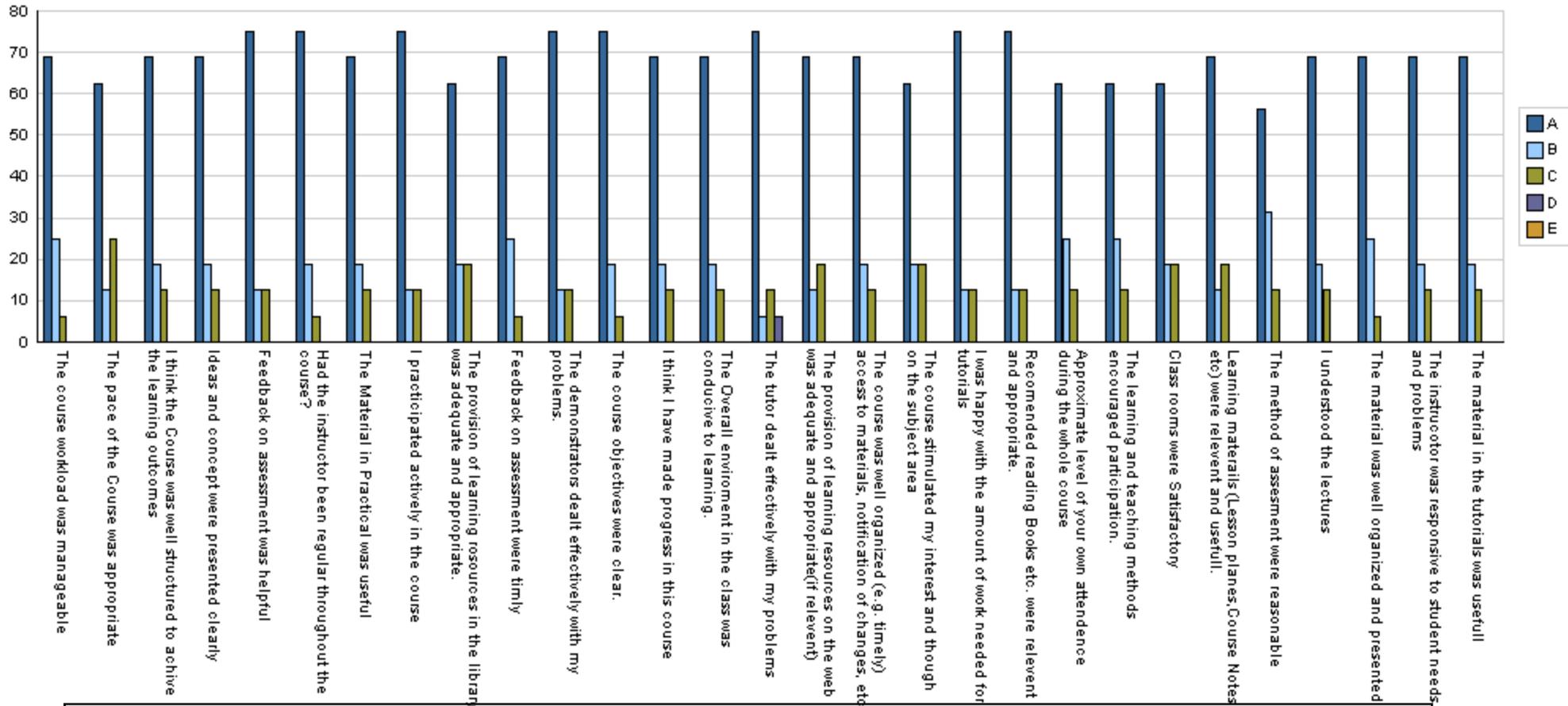
Teacher Name: Saadia Masood

Course Name: Applied Multivariate Analysis

Section: A **M/E:** M **Semester#** 2

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 75% students were strongly agreed regarding the question that "the provision of learning resources in the library was adequate and appropriate ; course objectives were clear, I was happy with the amount of work needed for tutorial,etc". About 30% were agreed that "the method of assessment were reasonable". About 6% were strongly disagreed that "the tutor dealt effectively with my problems".



Pir Mehr Ali Shah Arid Agriculture University Performa 10

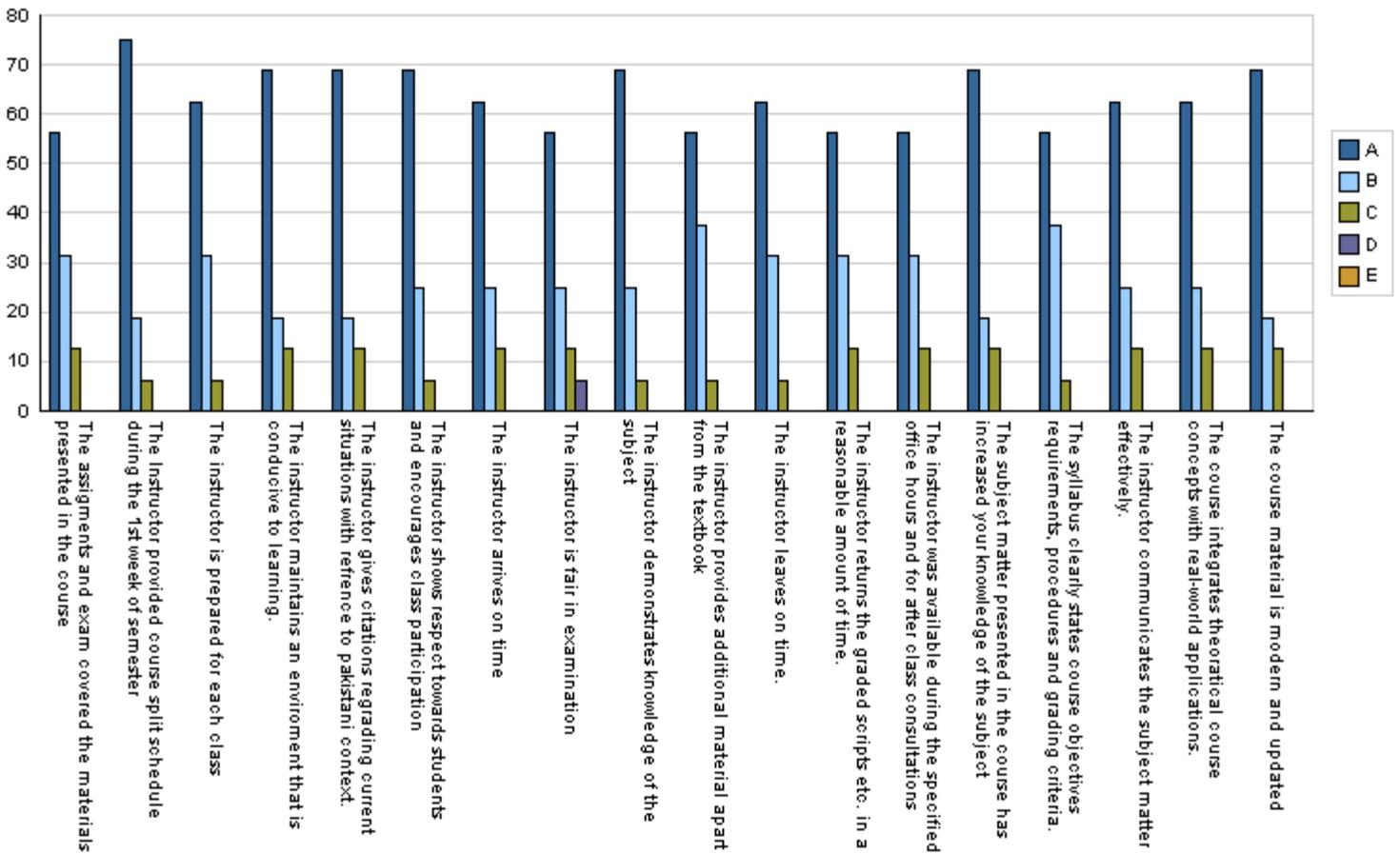
Session Name: SPRING-15

Teacher Name: Saadia Masood

Course Name: Applied Multivariate Analysis

Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 75% students were strongly agreed regarding the question that "the instructor provided course split schedule during the 1st week of semester". About 38% were agreed that "the instructor provides additional material apart from the textbook; syllabus clearly states course objectives requirements,procedures and grading criteria,etc". About 6% were strongly disagreed that "the instructor is fair in examination".

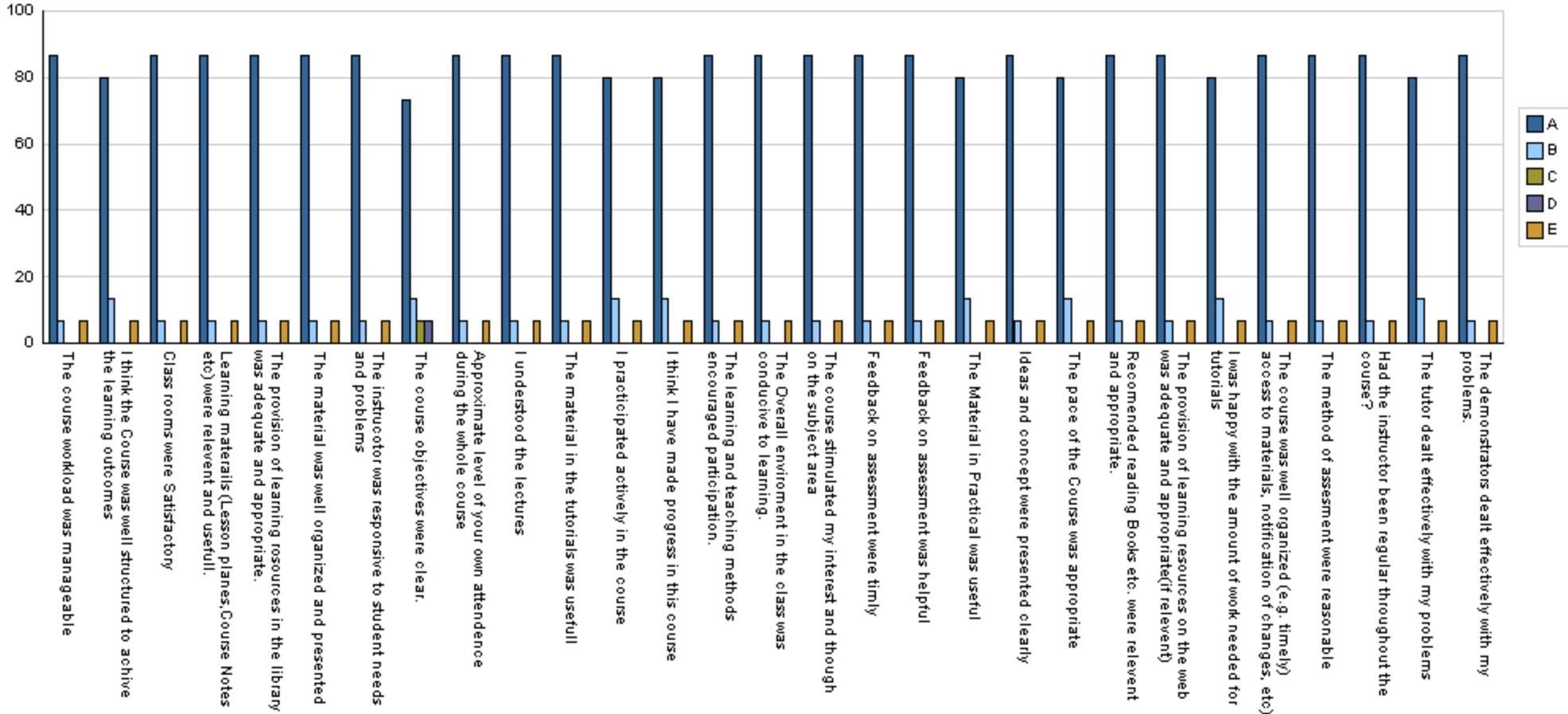


Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-15
Teacher Name: Muhammad Hanif
Course Name: Probability and Stochastic Process
Section: A **M/E:** E **Semester#** 1
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 85% students were strongly agreed regarding the question that "I understand the lectures; course workload was manageable, material in the tutorials was useful, etc". About 15% were agreed that "the course objectives were clear; I participated actively in the course, etc". About 8% were strongly disagreed that "course objectives were clear".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

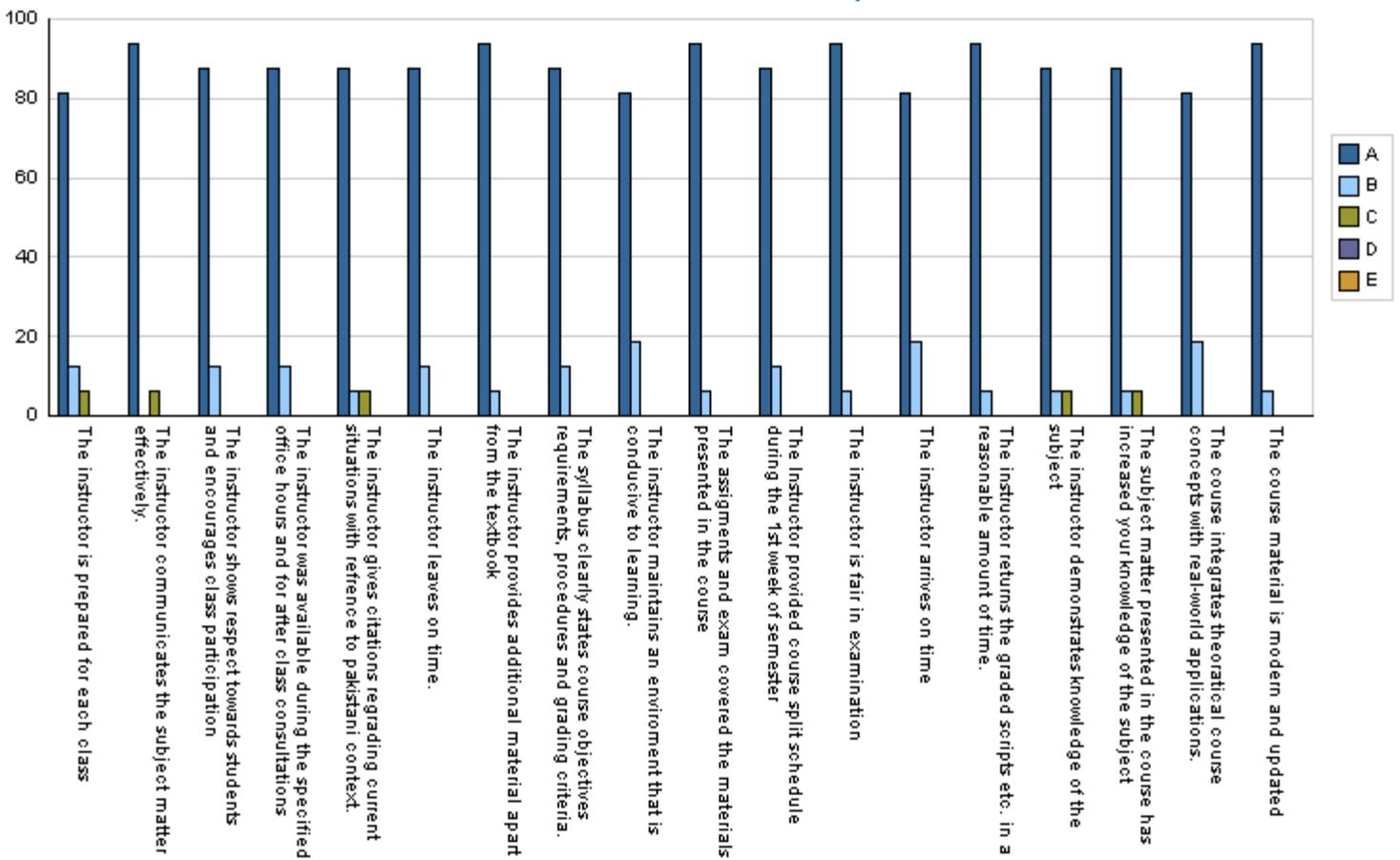
Session Name: FALL-15

Teacher Name: Muhammad Hanif

Course Name: Probability and Stochastic Process

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

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 95% students were strongly agreed regarding the question that "the instructor communicates the subject matter effectively; instructor returns the graded scripts etc. in a reasonable amount of time". About 19% were agreed that "the instructor arrives on time; instructor maintains an environment that is conducive to learning, etc". About 8% were Uncertain that "the instructor is prepared for each class; instructor demonstrates knowledge of the subject, etc".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-15

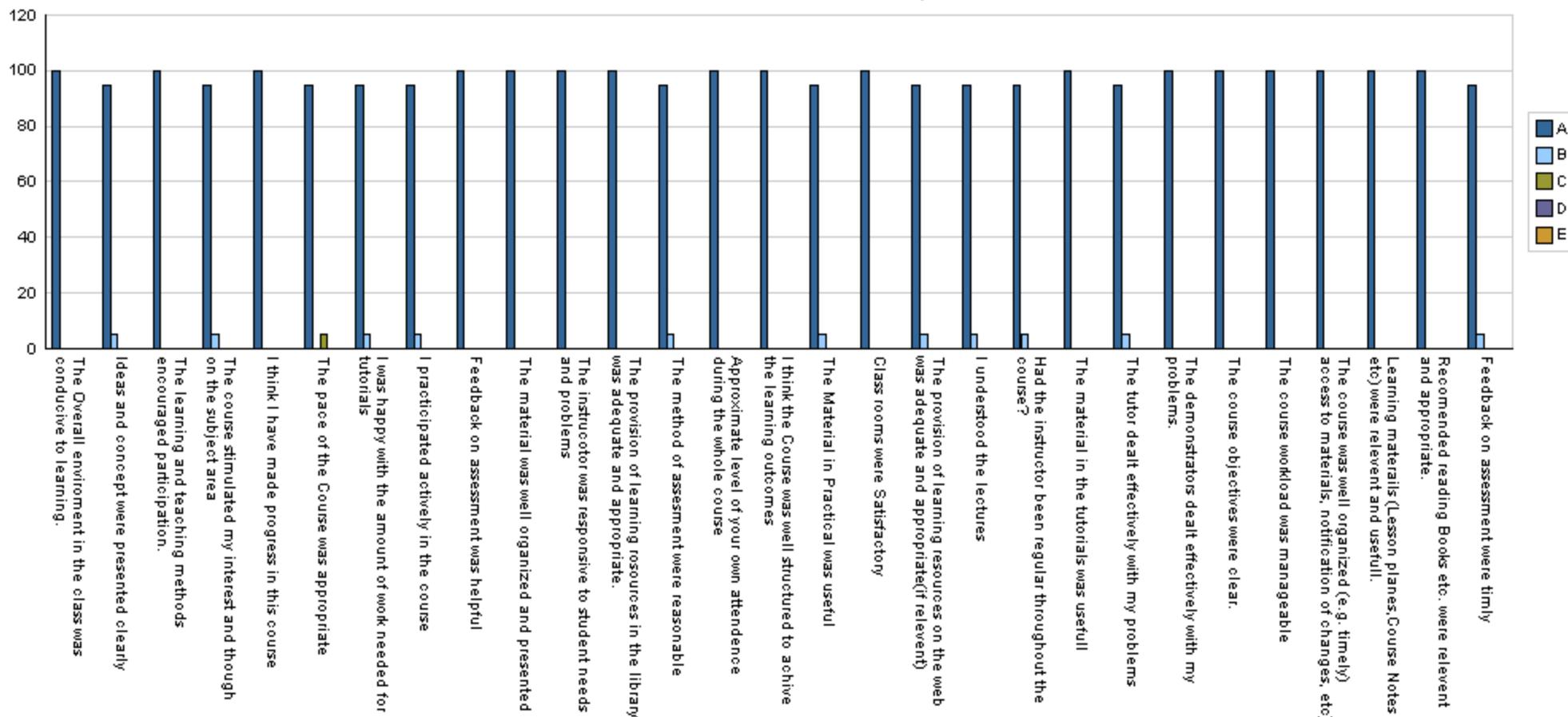
Teacher Name: Muhammad Hanif

Course Name: Probability and Stochastic Process

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

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "the overall environment in the class was conducive to learning; feedback on assessment was helpful, etc". About 4% were agreed that "ideas and concept were presented clearly; course stimulated my interest and though on the subject area, etc". About 4% were Uncertain that "the pace of the course was appropriate".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

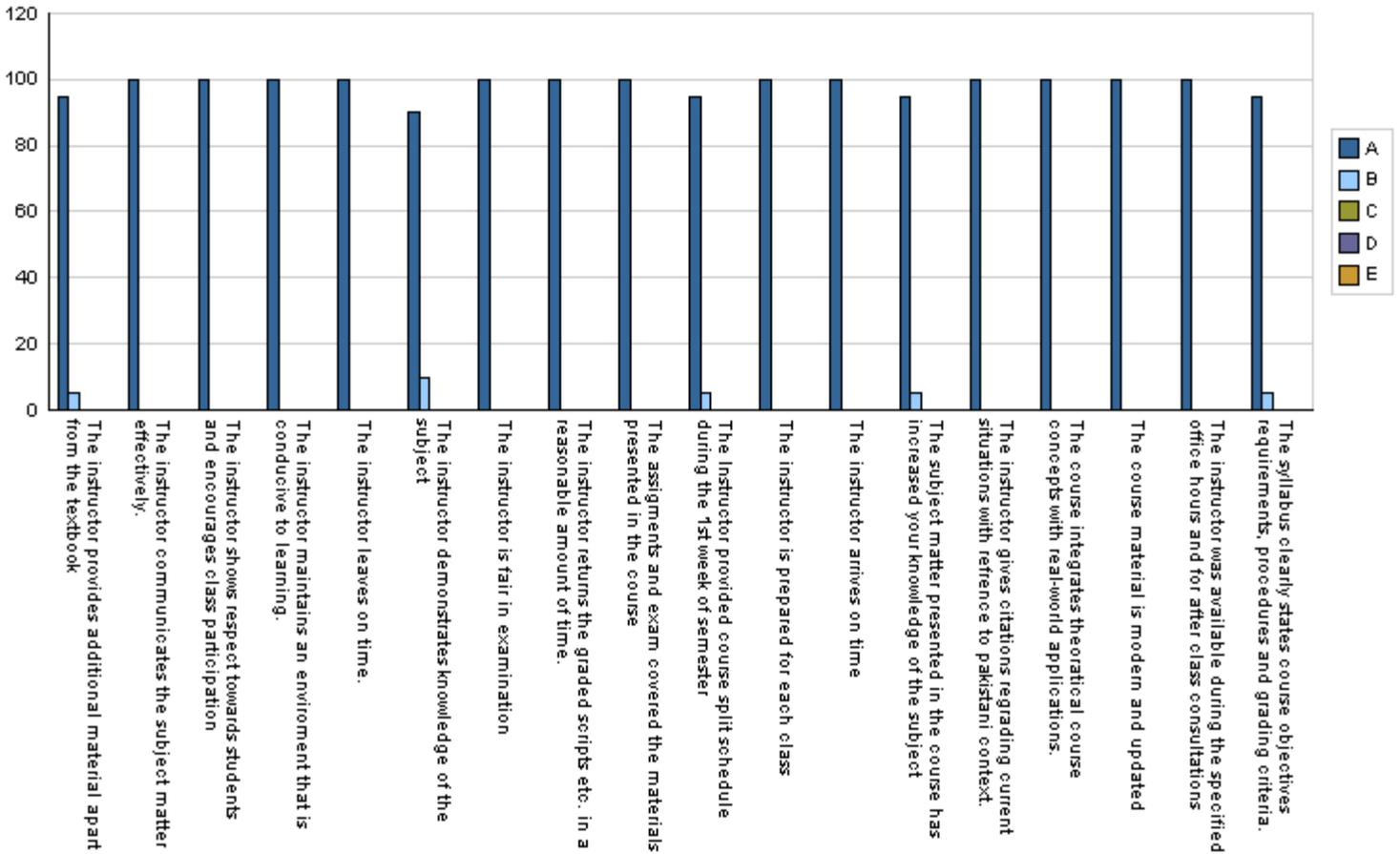
Session Name: FALL-15

Teacher Name: Muhammad Hanif

Course Name: Probability and Stochastic Process

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

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "the instructor communicates the subject matter effectively; instructor is fair in examination, etc". About 5% were agreed that "instructor demonstrates knowledge ".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

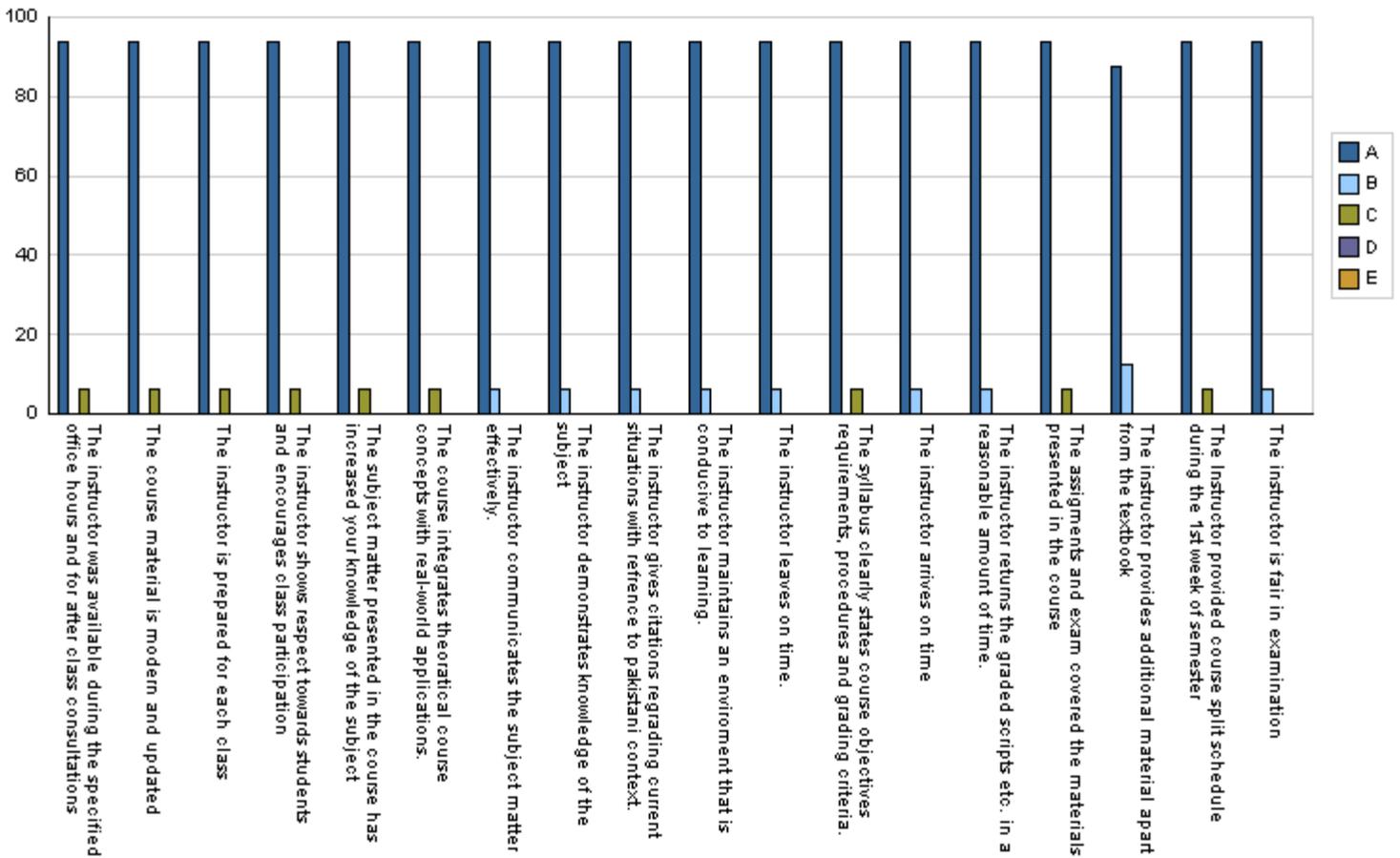
Session Name: FALL-15

Teacher Name: Saima Mustafa

Course Name: Applied Numerical Analysis

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

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Evening. About 95% students were strongly agreed regarding the question that "the instructor was available during the specified office hours and of after class consultations; instructor is prepared for each lecture, etc". About 14% were agreed that "the instructor provides additional material apart during the 1st week of semester".About 8% uncertain that "the course material is modern and updated;course integrates theoretical course concepts with real-world applications,etc".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-15

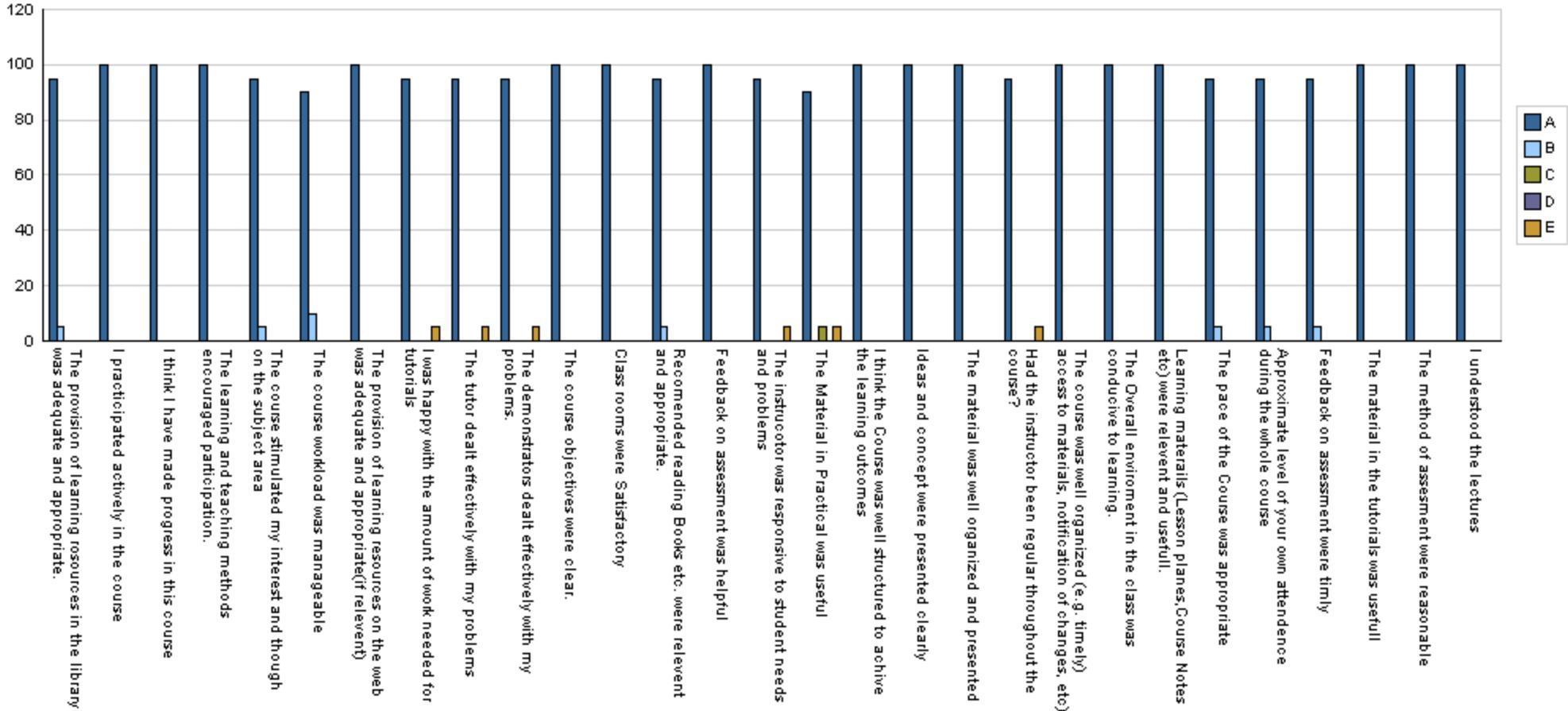
Teacher Name: Saima Mustafa

Course Name: Applied Numerical Analysis

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

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "I participated actively in the course ; course stimulated my interest and through on the subject areas , etc". About 6% were agreed that "the course workload was manageable".About 4% were Uncertain that "the tutor dealt effectively with my problems;material in practical was useful".



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

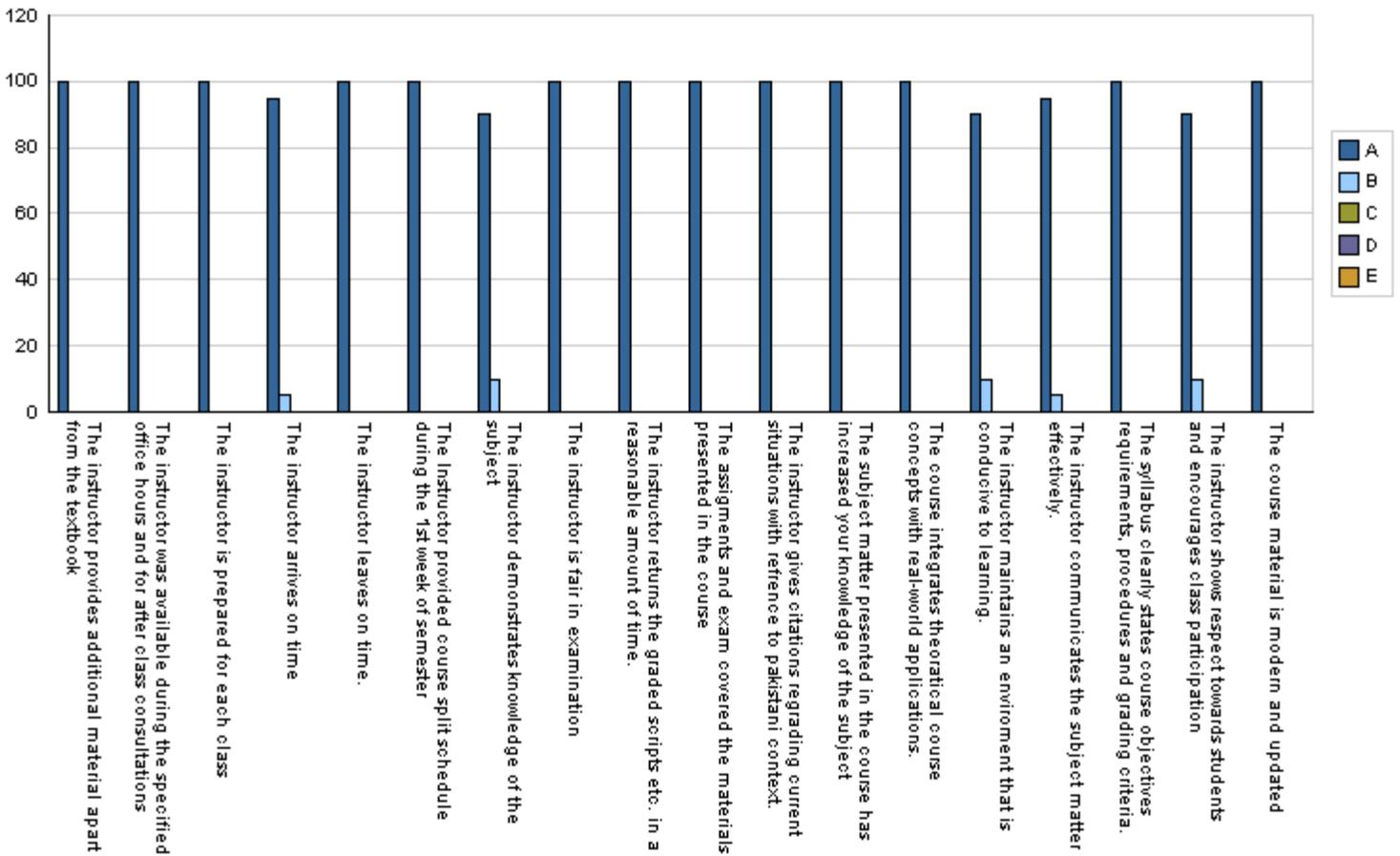
Session Name: FALL-15

Teacher Name: Saima Mustafa

Course Name: Applied Numerical Analysis

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

Teacher Evaluation Graph



Data were collected from 15 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "the instructor provides additional material apart from the instructor is fair in examination, etc". About 7% were agreed that "the instructor demonstration knowledge of the subject; instructor maintains an environment that is conducive to learning,etc".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-15

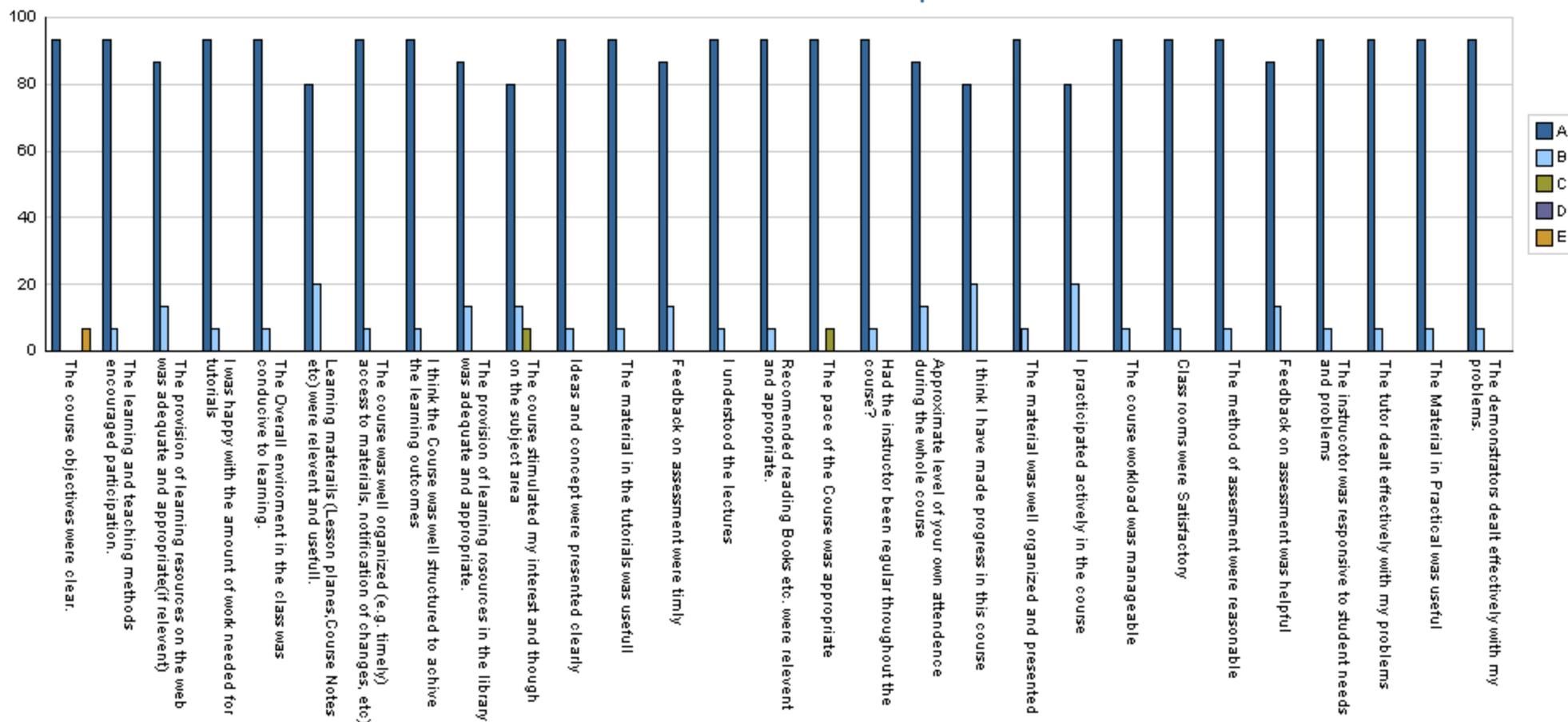
Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Class: M.Phil (Statistics)

Course Evaluation Graph



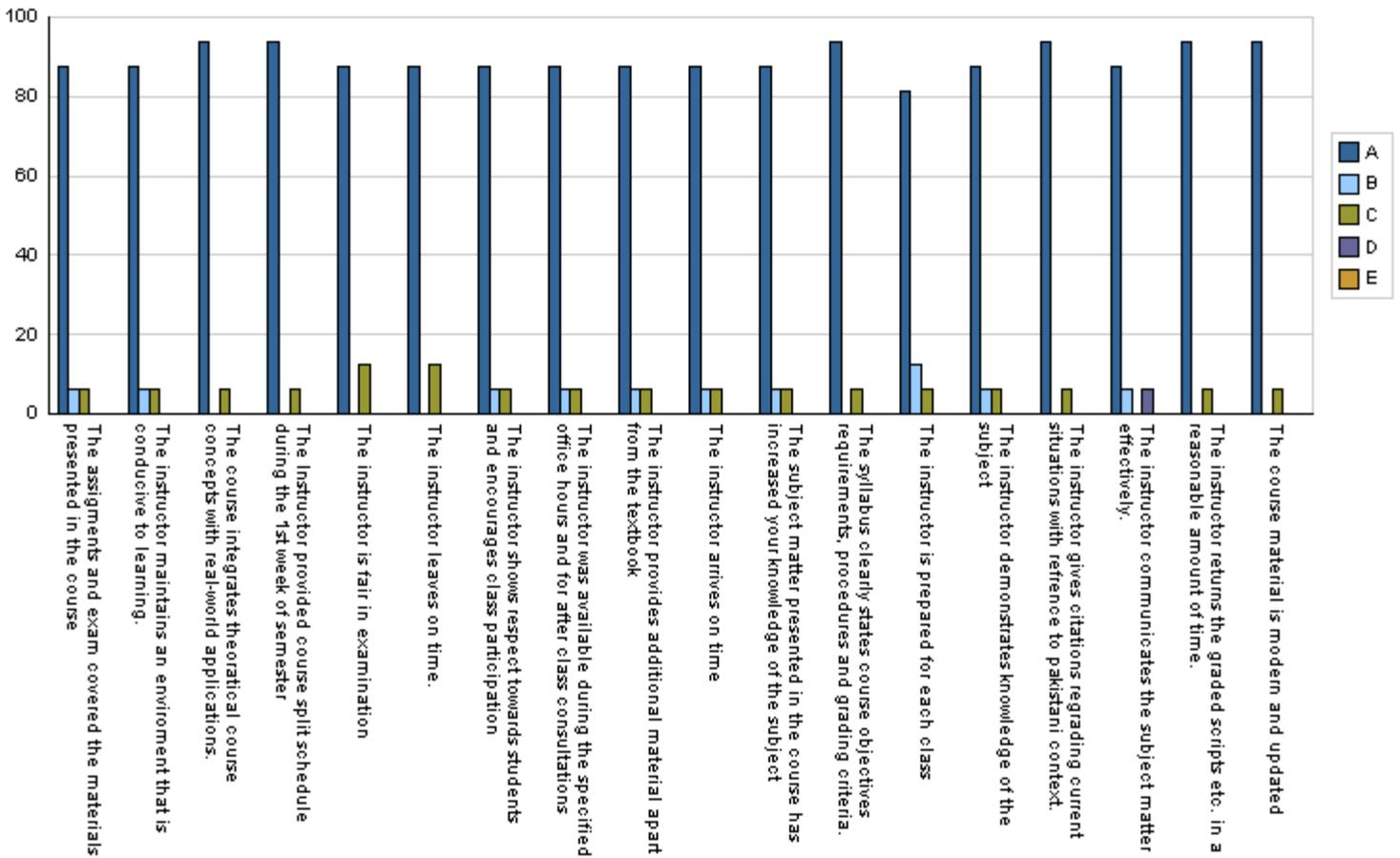
Data were collected from 15 students of M.phil(Statistics) Evening. About 96% students were strongly agreed regarding the question that " the course integrates theoretical course concepts with real-world applications; syllabus clearly states course objectives requirements, procedures and grading criteria, etc". About 11% were agreed that "the instructor is prepared for each class". About 11% were strongly disagreed that "the instructor is fair in examination; instructor leaves on time, etc".



Pir Mehr Ali Shah Arid Agriculture University Performa 10

Session Name: FALL-15
Teacher Name: Nasir Jamal
Course Name: Applied Survey Sampling
Section: A **M/E:** E **Semester#:** 1

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that "Approximate level of your own attendance during the whole course;the method of assessments were reasonable, etc". About 14% were agreed that "the feedback on assessment was helpful". About 4% were Uncertain that "Had the instructor been regular throughout the course".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: FALL-15

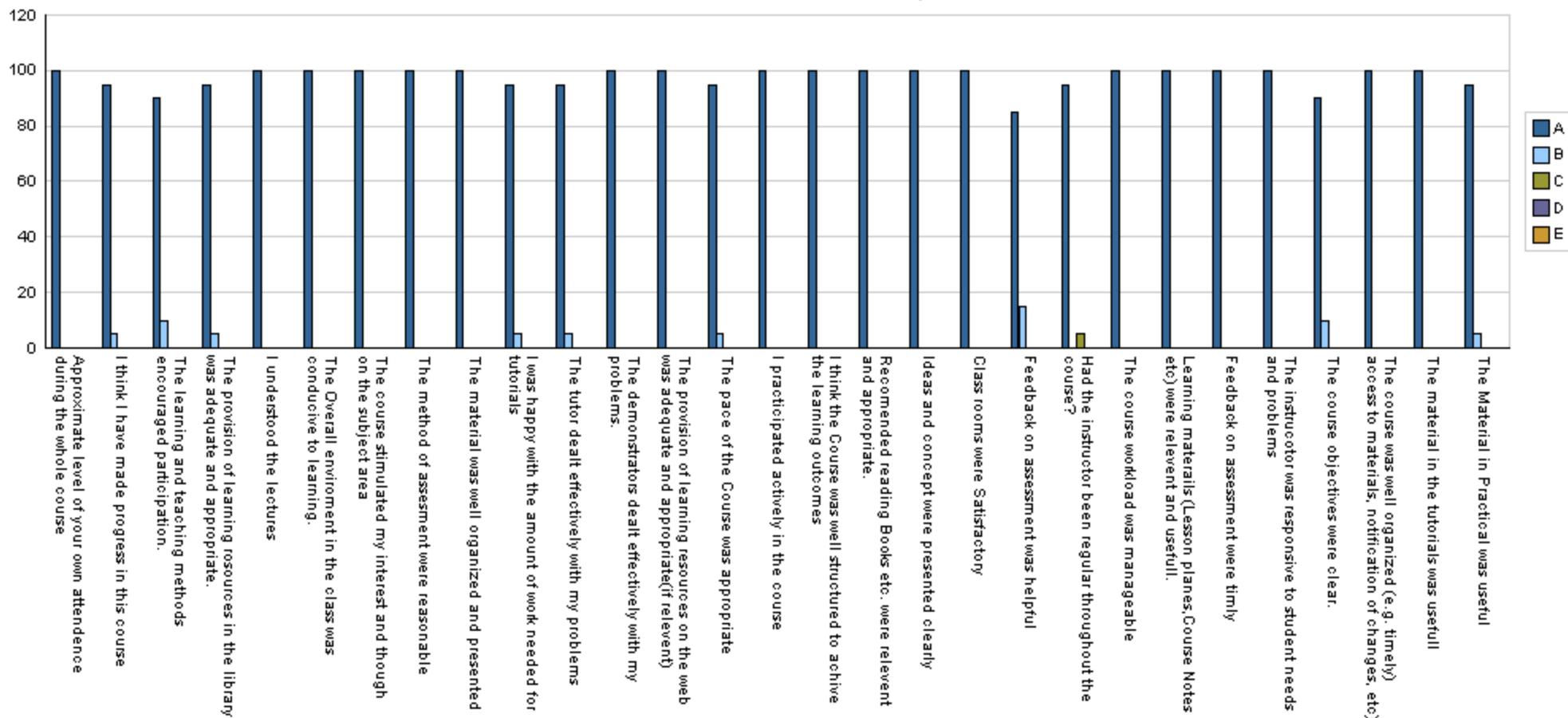
Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that " the instructor is fair in examinations; instructor leaves the class on time, etc". About 10% were agreed that "the instructor provides additional material apart from the textbook".



Pir Mehr Ali Shah Arid Agriculture University Performa 10

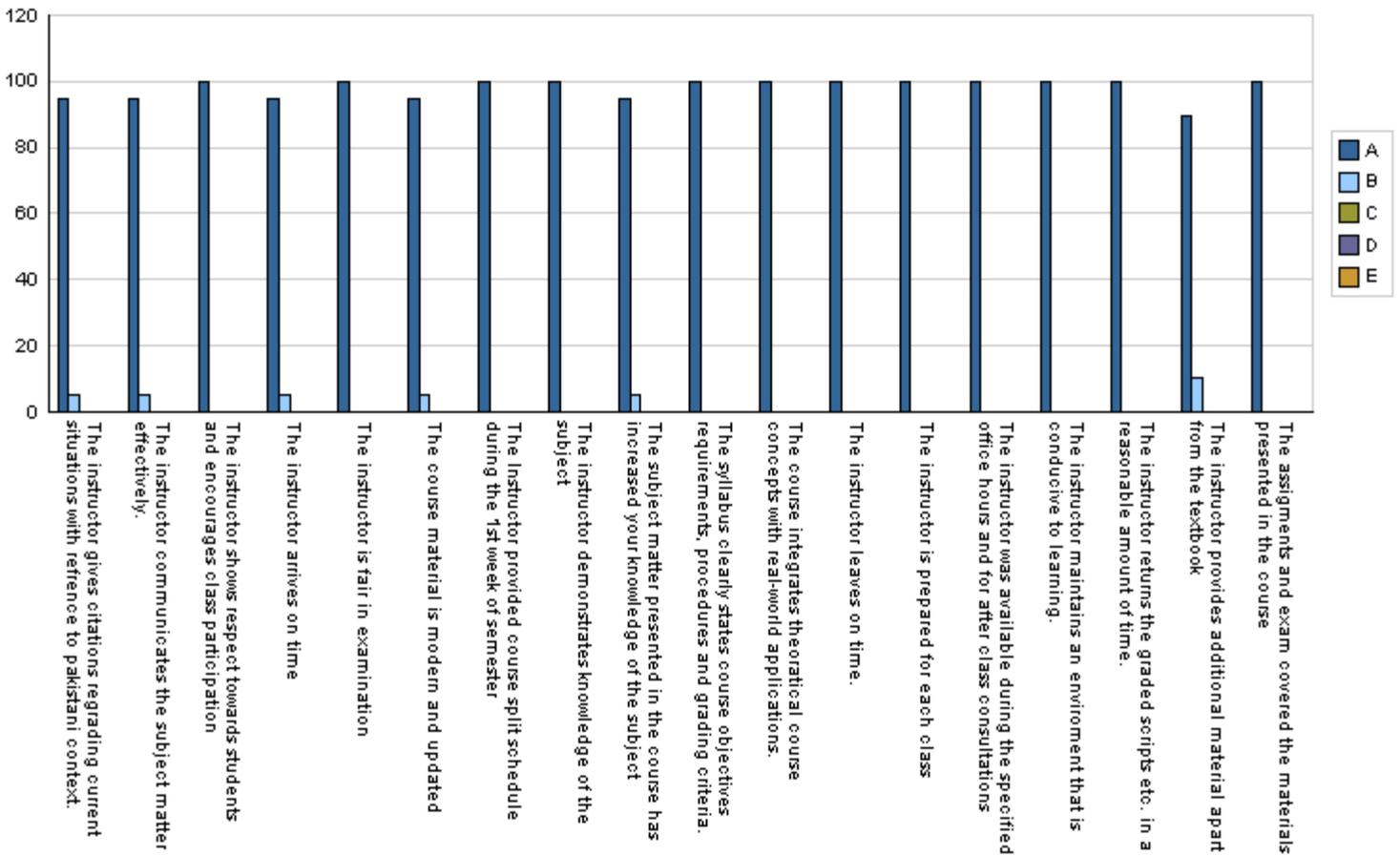
Session Name: FALL-15

Teacher Name: Nasir Jamal

Course Name: Applied Survey Sampling

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

Teacher Evaluation Graph



Data were collected from 20 students of M.phil(Statistics) Morning. About 100% students were strongly agreed regarding the question that " the instructor is fair in examinations; instructor leaves the class on time, etc". About 10% were agreed that "the instructor provides additional material apart from the textbook".



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-16

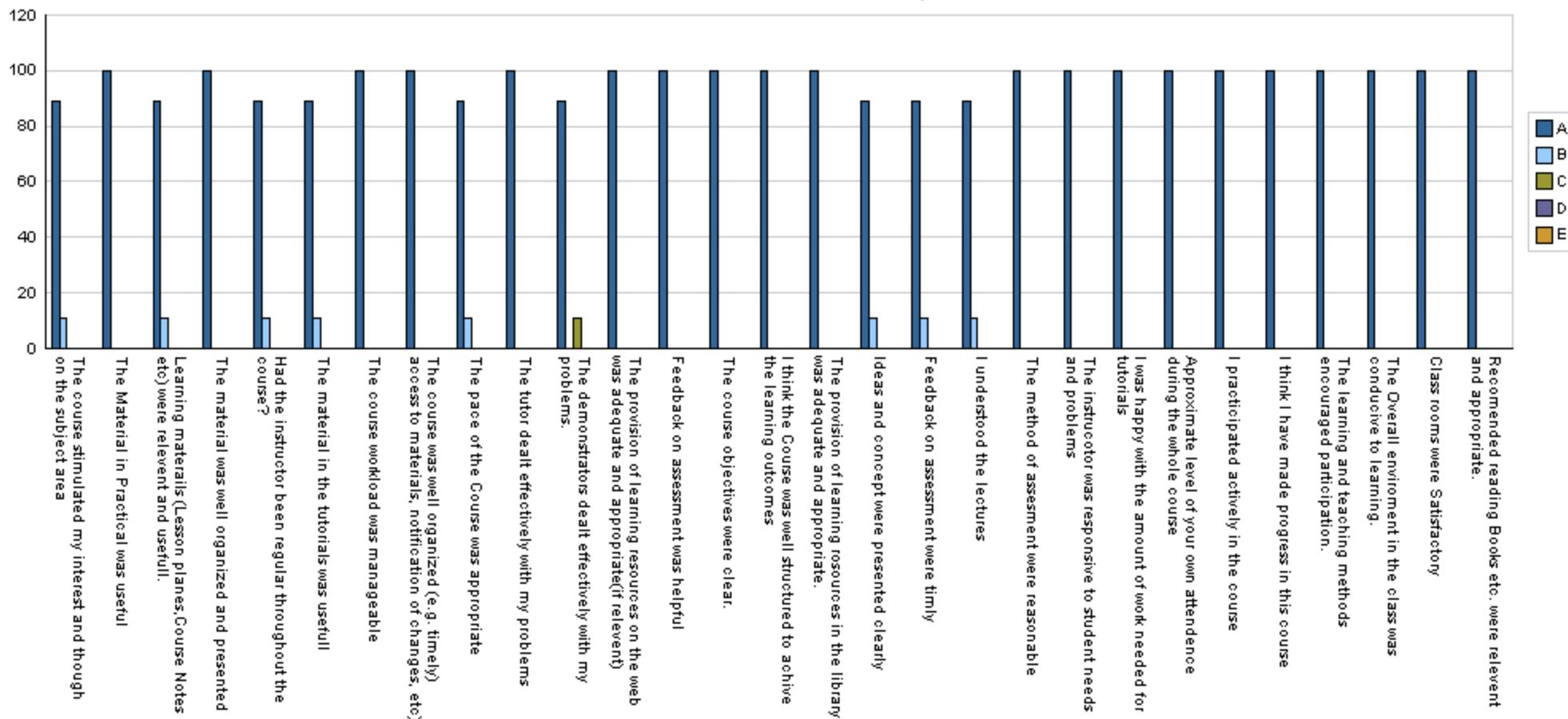
Teacher Name: Muhammad Hanif

Course Name: Applied Smoothing Techniques

Section: A **M/E:** E **Semester#** 2

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) evening. About 100% students were strongly agreed regarding the question that the course workload was manageable; i understand the lectures etc, About 100% were strongly agreed that the pace of the course was appropriate; class room was satisfactory, etc. About 100% were strongly agreed that i think the course was well structured to achieve the learning outcomes.

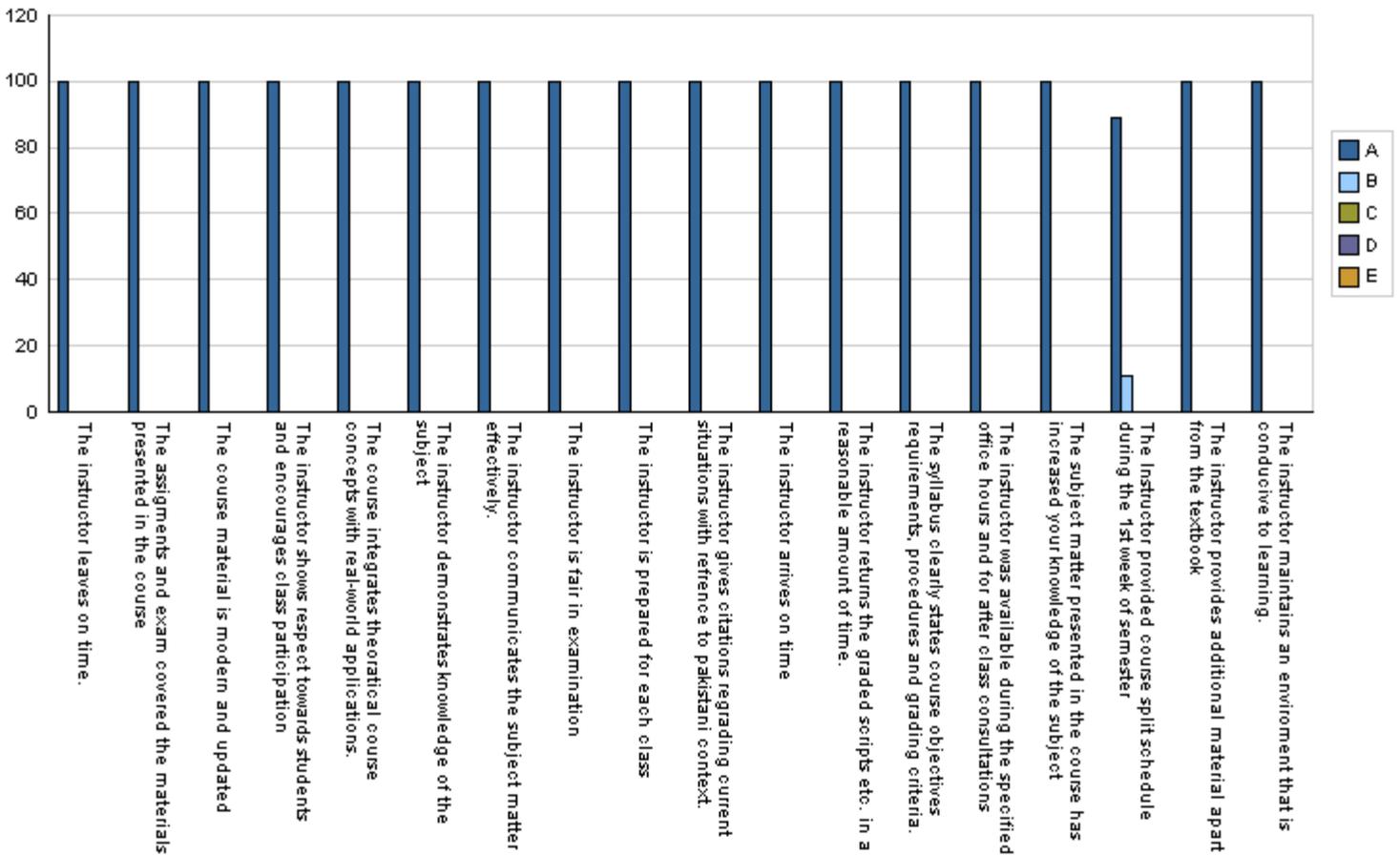


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Muhammad Hanif
Course Name: Applied Smoothing Techniques
Section: A **M/E:** E **Semester#:** 2

Teacher Evaluation Graph



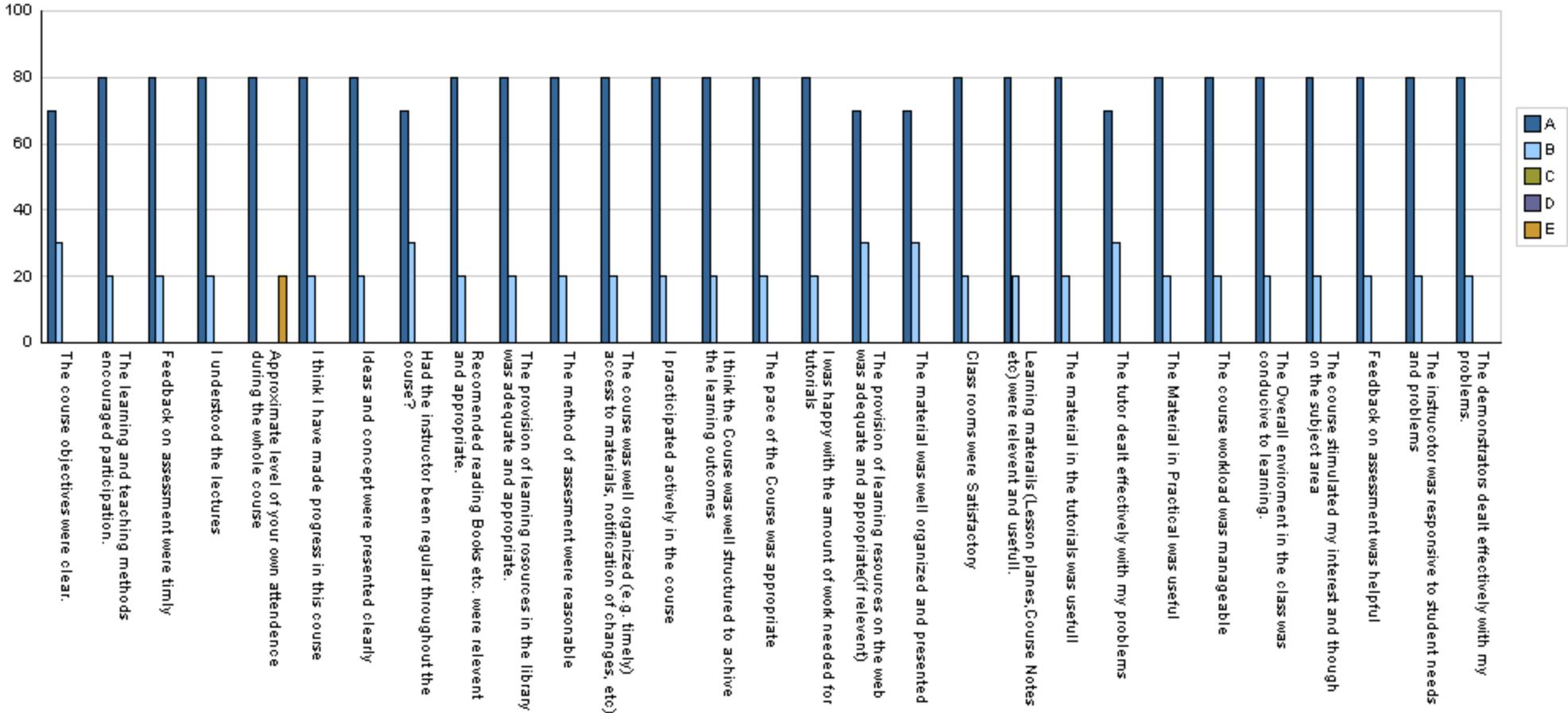
Data were collected from 15 students of M.Phil (Statistics) evening. About 100% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 100% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.



Pir Mehr Ali Shah Arid Agriculture University

Session Name: SPRING-16 **Performa 1**
Teacher Name: Muhammad Hanif
Course Name: Applied Smoothing Techniques
Section: A **M/E:** M **Semester#** 2
Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 80% students were strongly agreed regarding the question that the course workload was manageable; i understand the lectures etc, About 80% were strongly agreed that the pace of the course was appropriate; class room was satisfactory, etc. About 80% were strongly agreed that i think the course was well structured to achieve the learning outcomes.

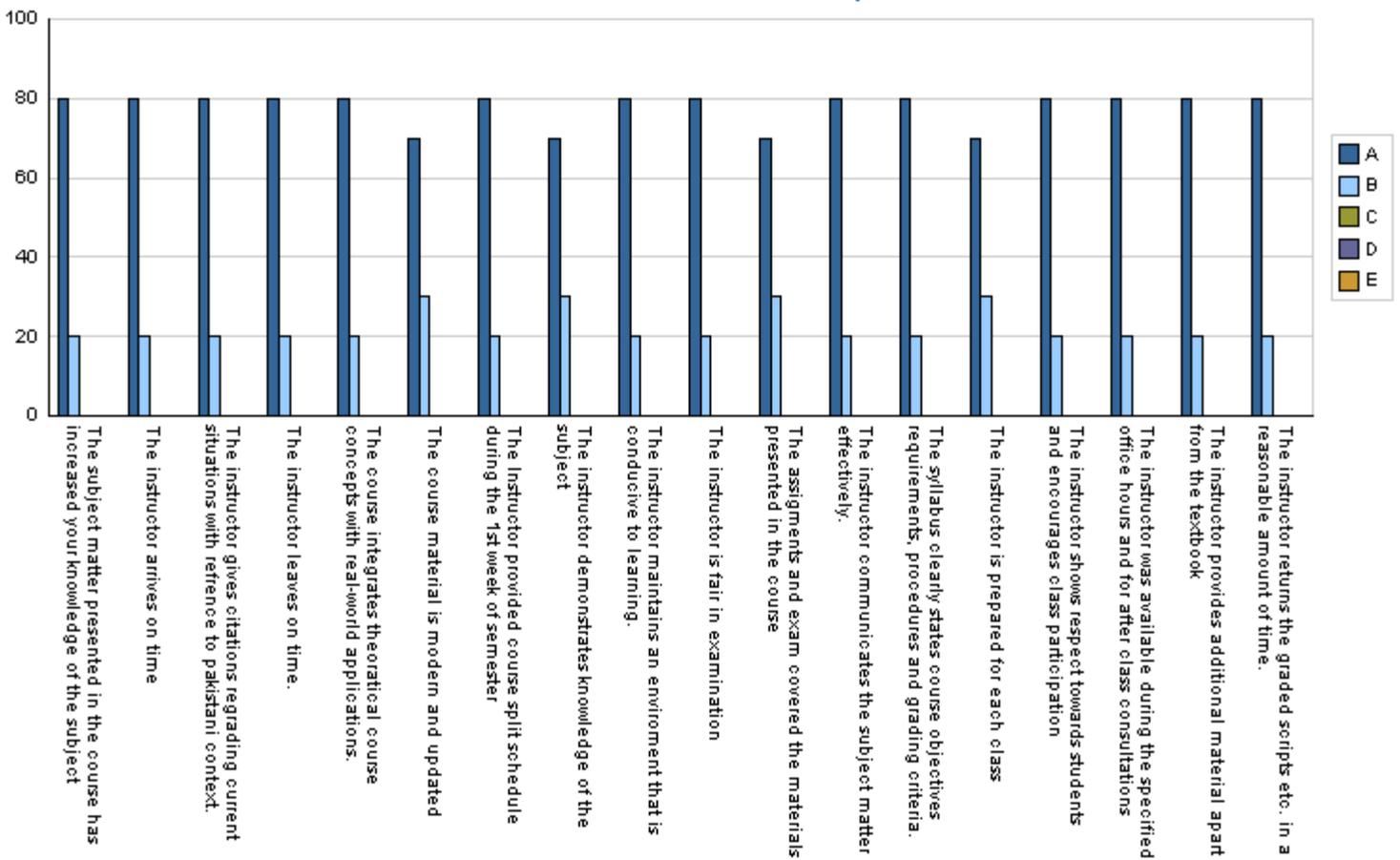


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Muhammad Hanif
Course Name: Applied Smoothing Techniques
Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 80% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 80% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.

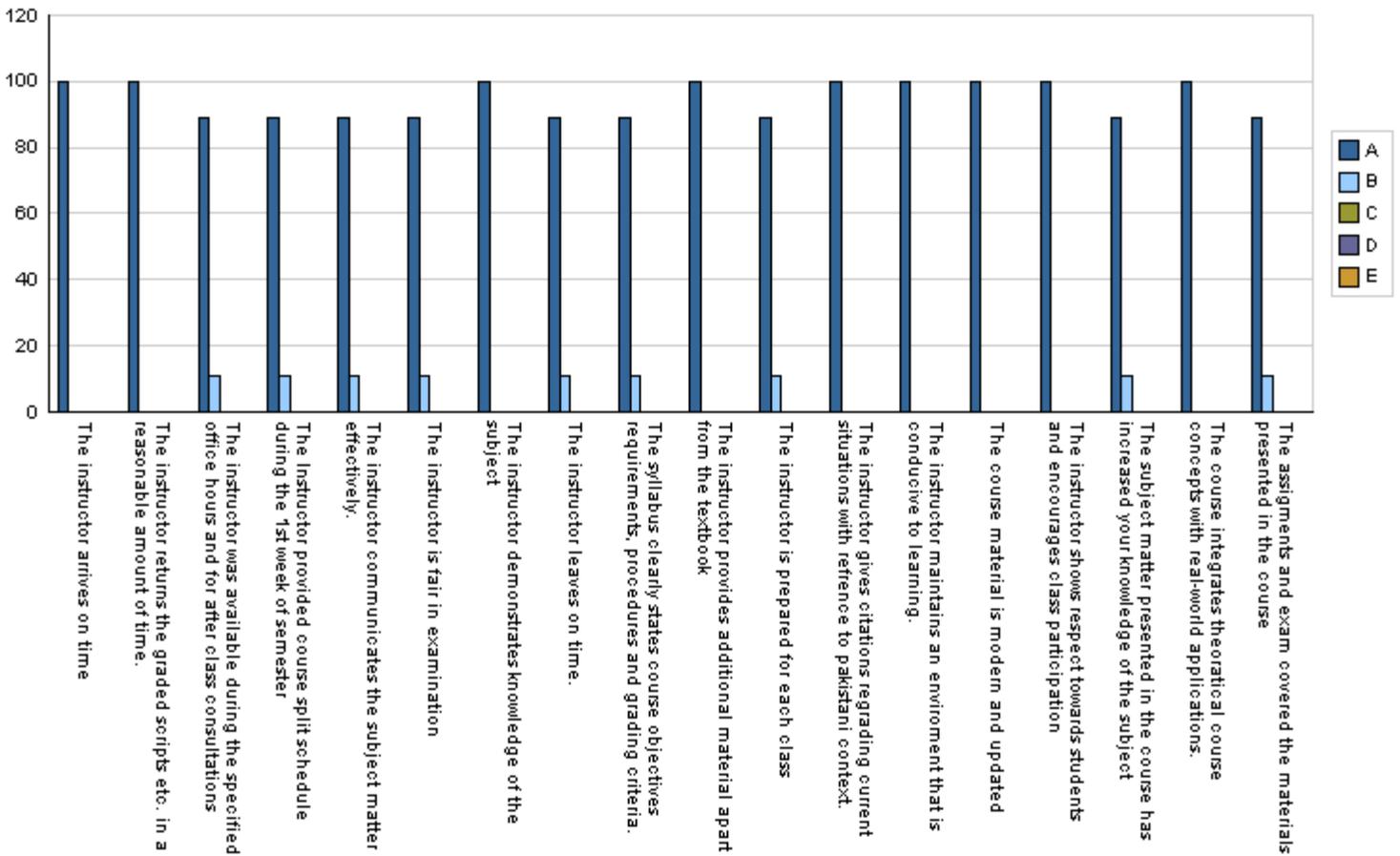


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Saima Mustafa
Course Name: Operations Research Models
Section: A M/E: E Semester#: 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) evening. About 100% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 89% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-16

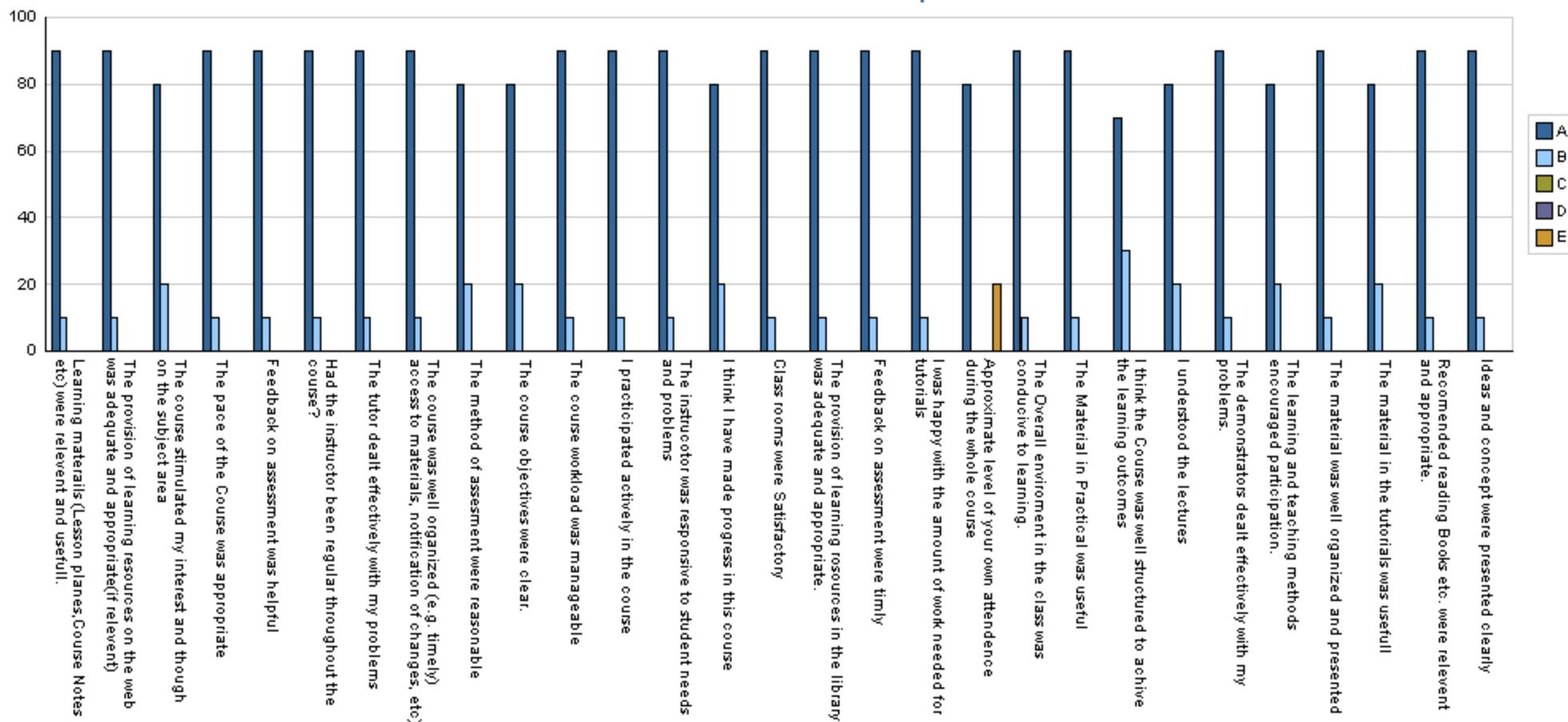
Teacher Name: Saima Mustafa

Course Name: Operations Research Models

Section: A **M/E:** M **Semester#** 2

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 90% students were strongly agreed regarding the question that the course workload was manageable; i understand the lectures etc, About 90% were strongly agreed that the pace of the course was appropriate; class room was satisfactory, etc. About 70% were strongly agreed that i think the course was well structured to achieve the learning outcomes.

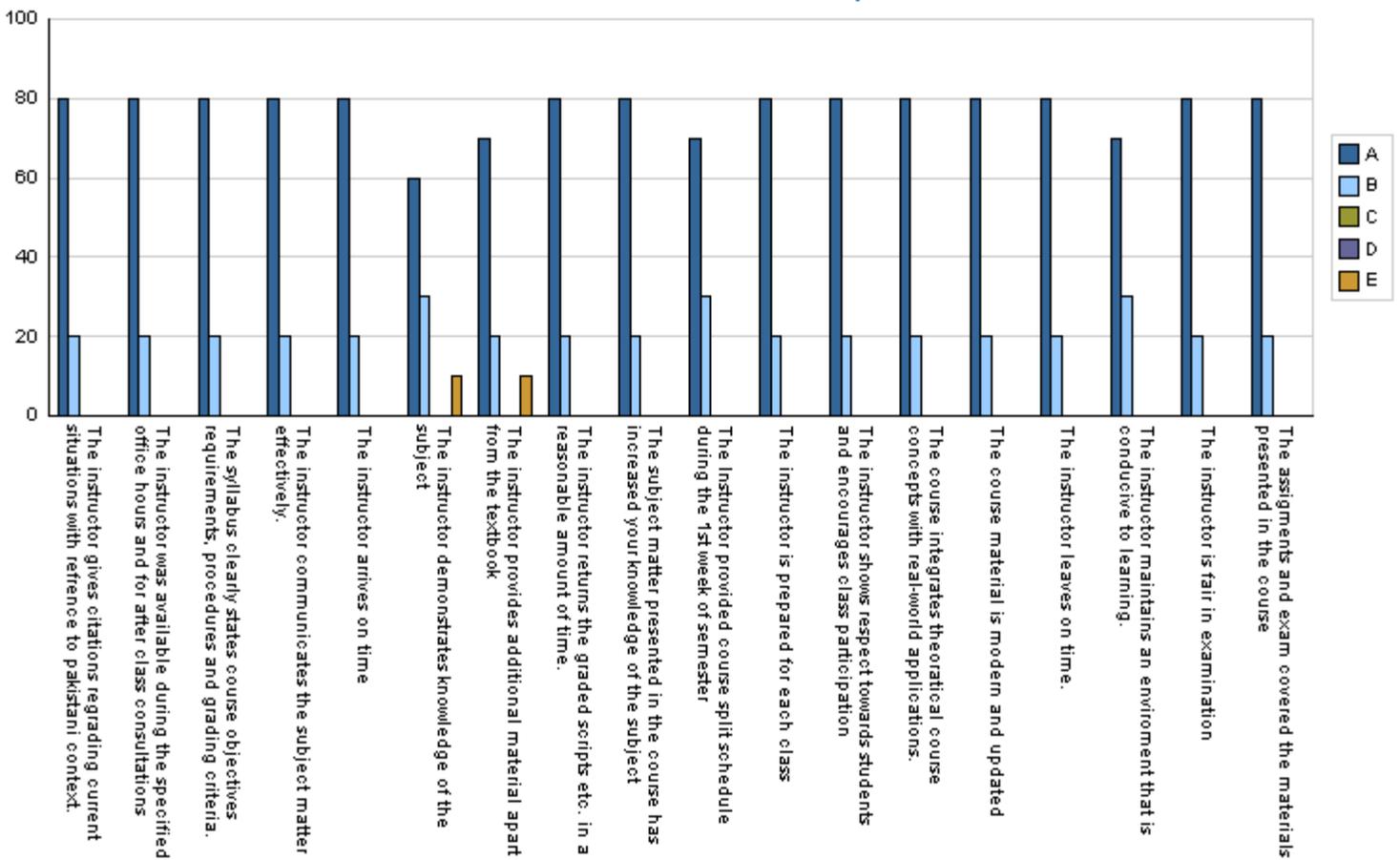


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Saima Mustafa
Course Name: Operations Research Models
Section: A M/E: M Semester#: 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 80% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 80% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.



Pir Mehr Ali Shah Arid Agriculture University

Performa 10

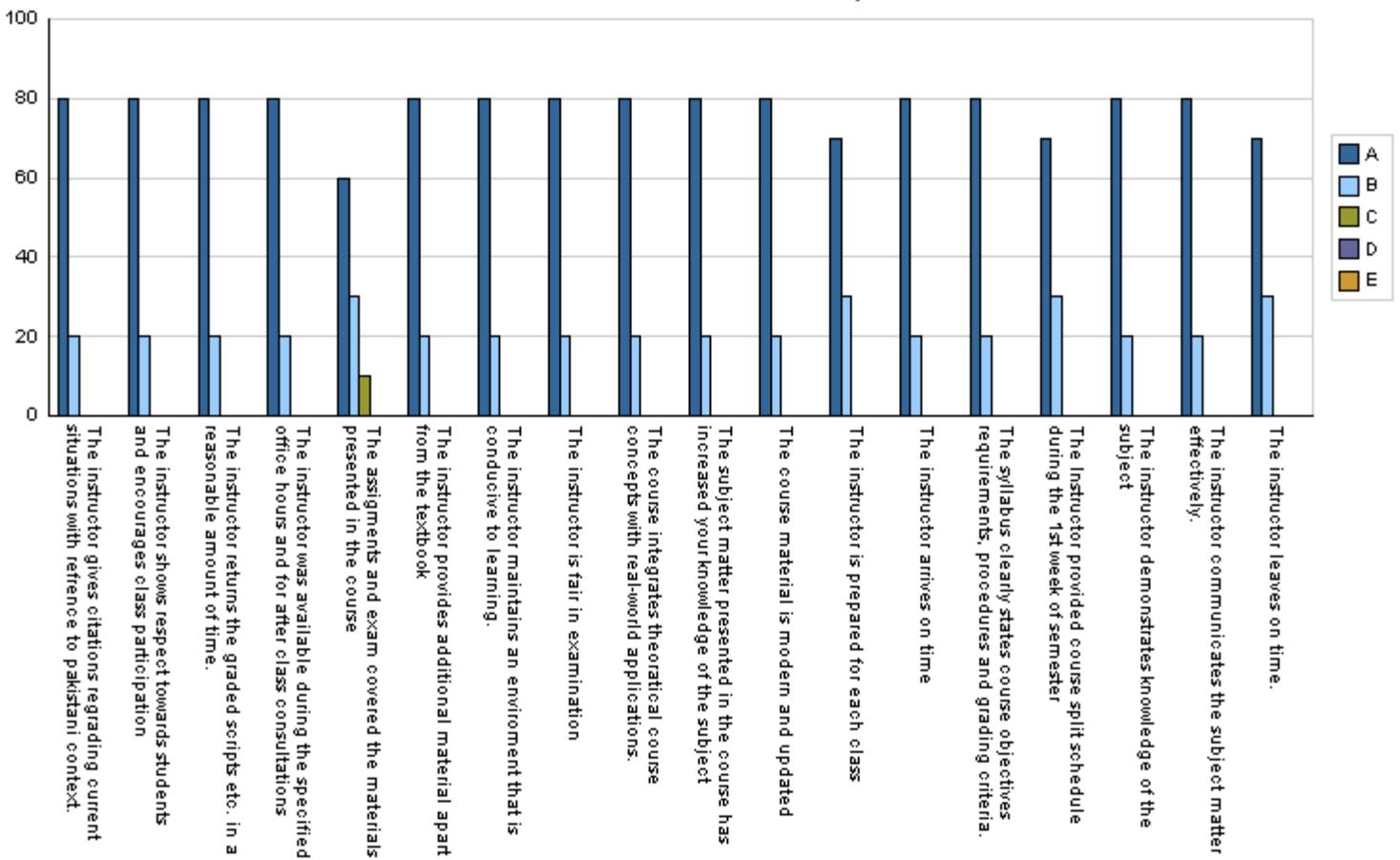
Session Name: SPRING-16

Teacher Name: Saadia Masood

Course Name: Applied Multivariate Analysis

Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 80% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 80% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-16

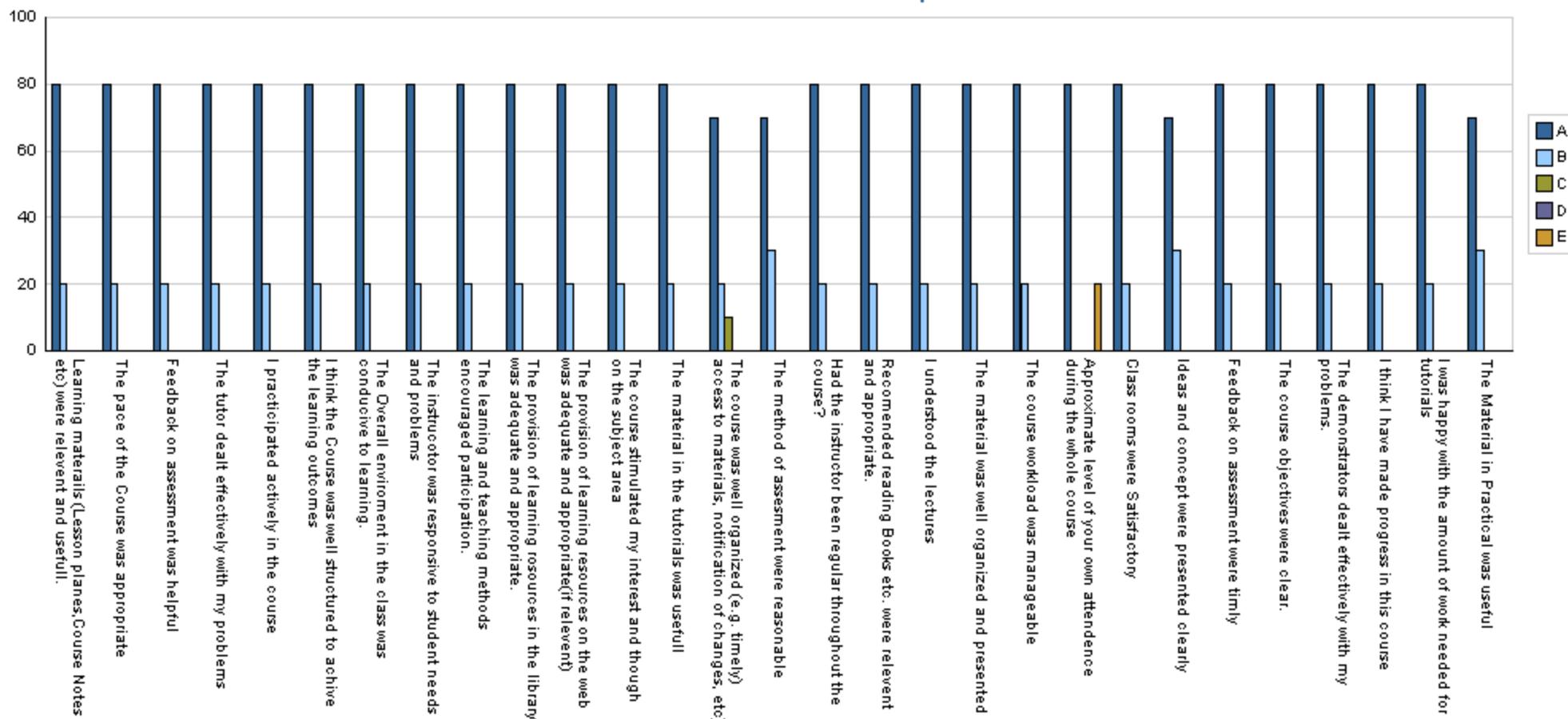
Teacher Name: Nasir Ali

Course Name: Econometrics Techniques and Applications

Section: A **M/E:** M **Semester#** 2

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 80% students were strongly agreed regarding the question that the course workload was manageable; i understand the lectures etc, About 80% were strongly agreed that the pace of the course was appropriate; class room was satisfactory, etc. About 70% were strongly agreed that i think the course was well structured to achieve the learning outcomes.

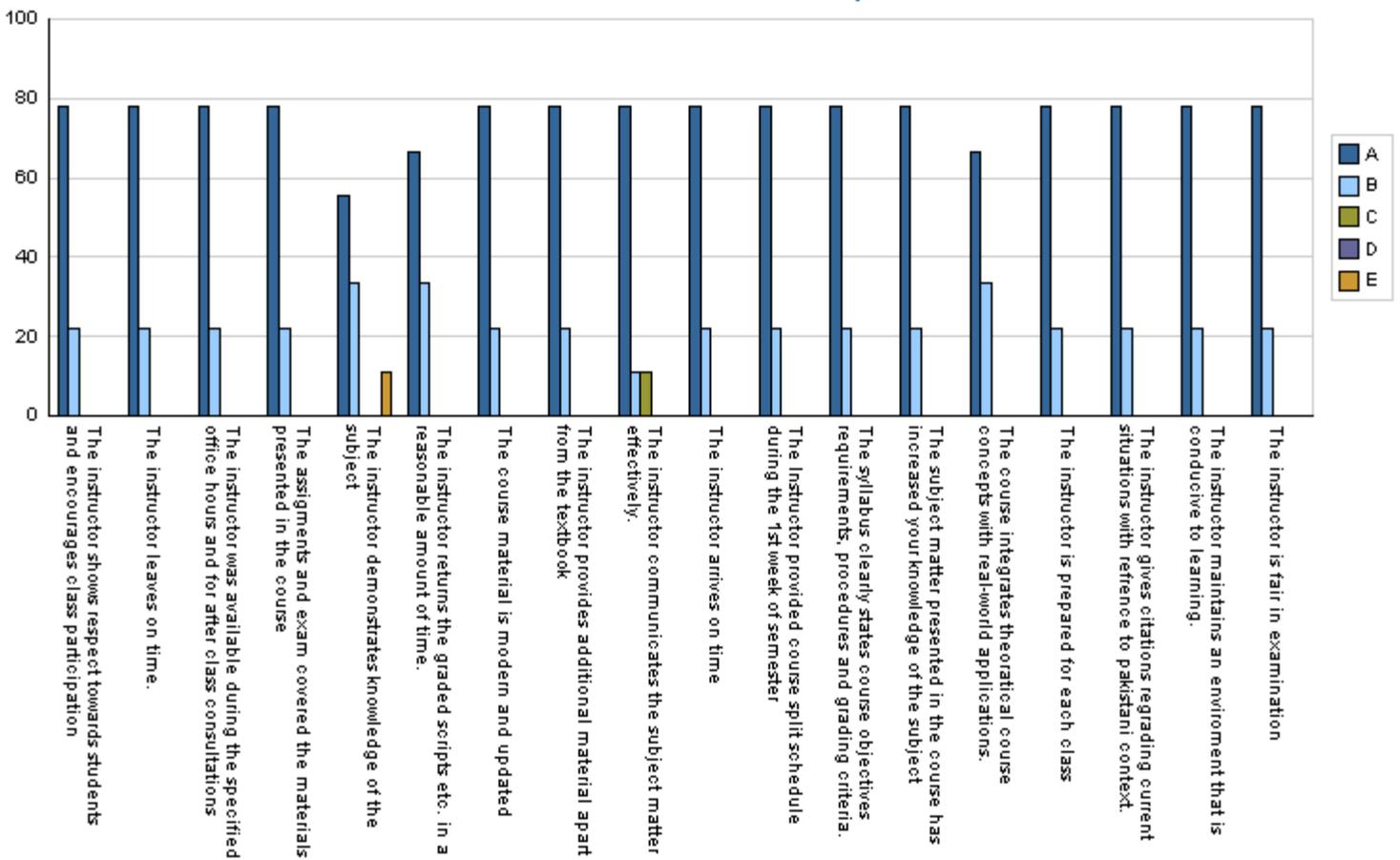


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Nasir Ali
Course Name: Econometrics Techniques and Applications
Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) evening. About 78% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 78% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.



Pir Mehr Ali Shah Arid Agriculture University

Performa 1

Session Name: SPRING-16

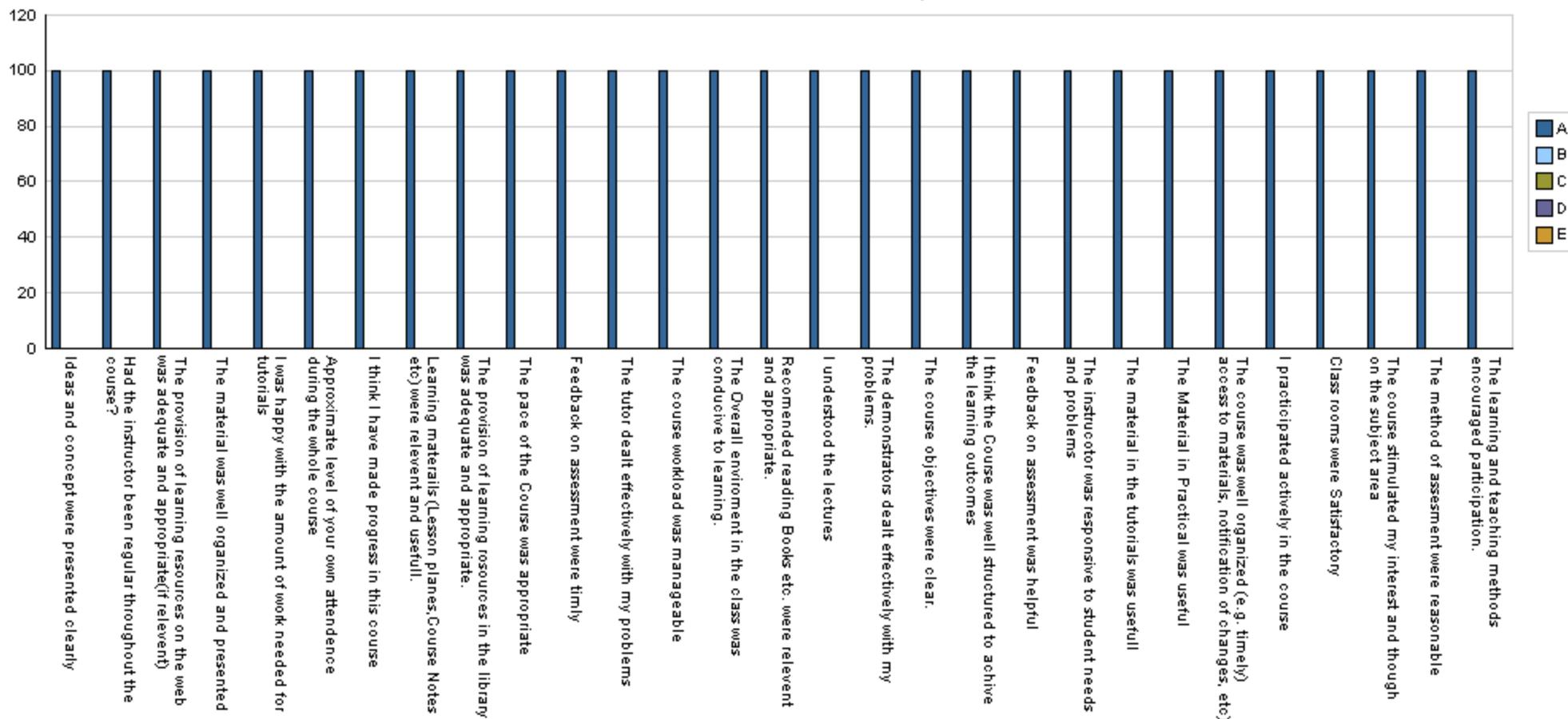
Teacher Name: Nasir Jamal

Course Name: Bayesian Analysis

Section: A **M/E:** E **Semester#** 2

Class: M.Phil (Statistics)

Course Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) evening. About 100% students were strongly agreed regarding the question that the course workload was manageable; i understand the lectures etc, About 100% were strongly agreed that the pace of the course was appropriate; class room was satisfactory, etc. About 100% were strongly agreed that i think the course was well structured to achieve the learning outcomes.

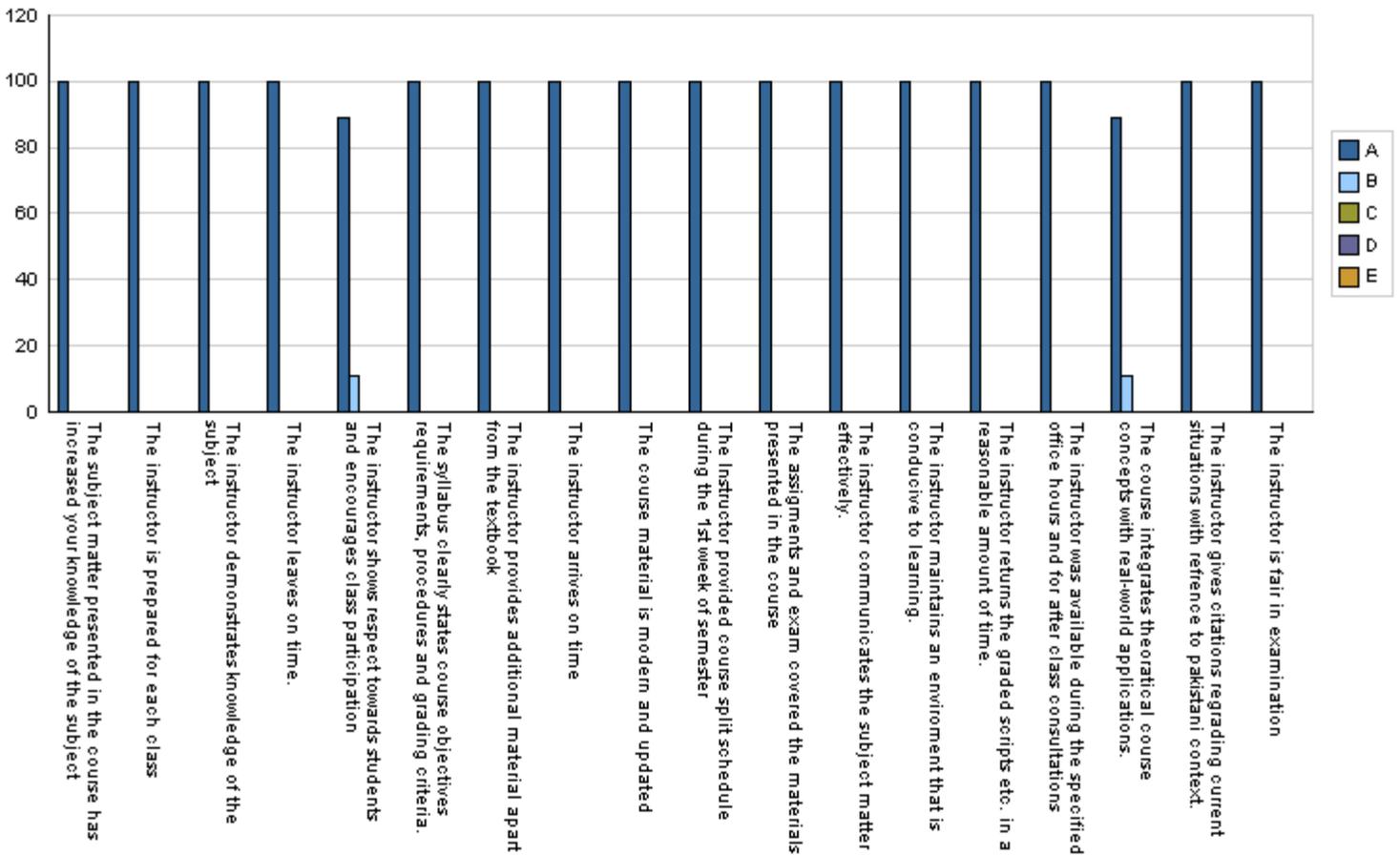


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Nasir Jamal
Course Name: Bayesian Analysis
Section: A **M/E:** E **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) evening. About 89% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 100% were strongly agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.

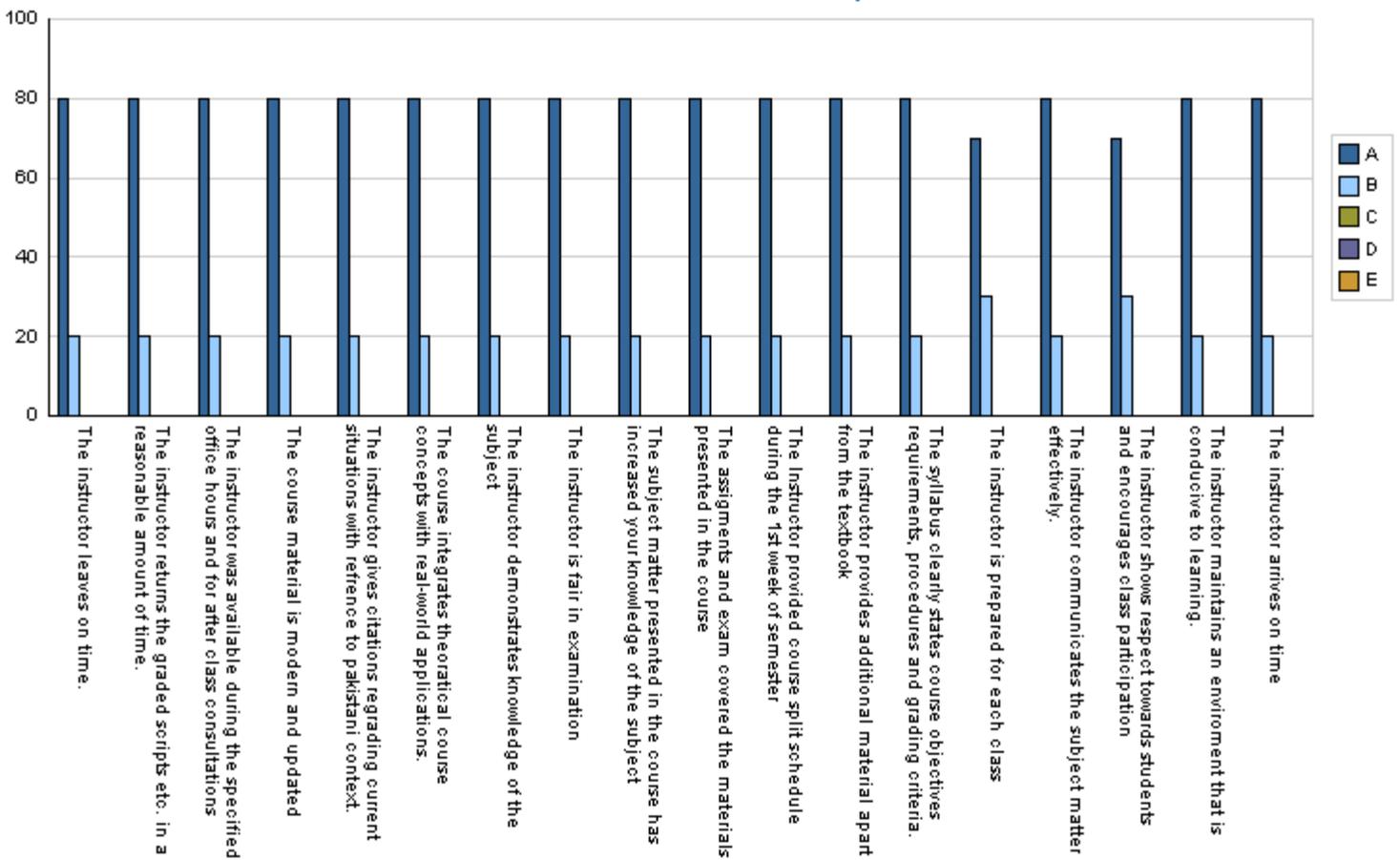


Pir Mehr Ali Shah Arid Agriculture University

Performa 10

Session Name: SPRING-16
Teacher Name: Nasir Jamal
Course Name: Bayesian Analysis
Section: A **M/E:** M **Semester#:** 2

Teacher Evaluation Graph



Data were collected from 15 students of M.Phil (Statistics) morning. About 70% students were strongly agreed regarding the question that the instructor shows respect towards students and encourages class participation; instructor is presented for each class, instructor communicates the subject matter effectively, etc. About 80% strongly were agreed that syllabus clearly states course objectives requirements, procedures and grading criteria.

Performa 2

Faculty Course Review Report

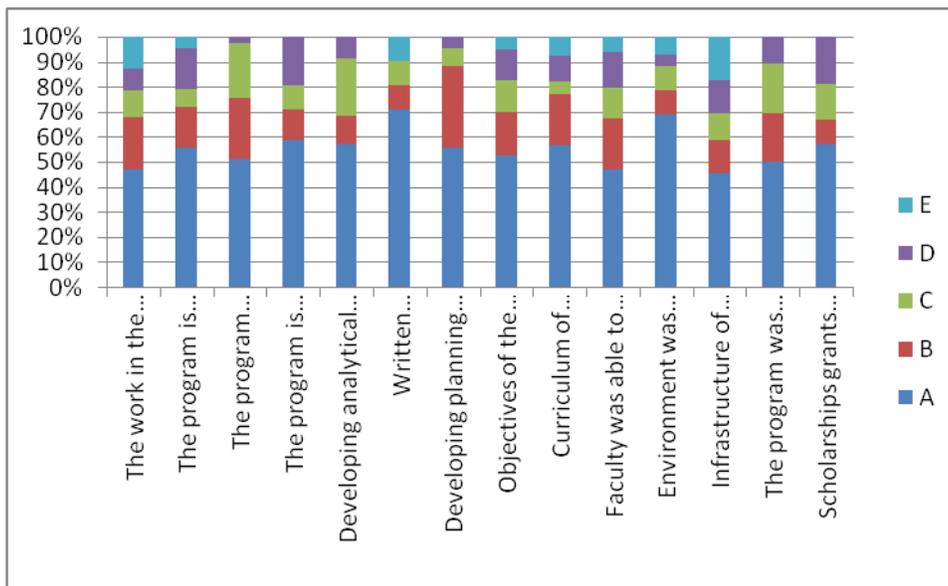
S. No	Course Code	Title	Teacher Name	Semester	Credit Hours	No. of Students	comments on curriculum	Any change for future in course	%Grade				
									A	B	C	D	F
1.	STAT-761 (M)	Probability and Stochastic Process	Dr. M. Hanif	Fall-2014-15	3(3-0)	16	Well and updated as per HEC criteria	No	5	11	-	-	-
2.	STAT-761 (E)	Probability and Stochastic Process	Dr. M. Hanif	Fall-2014-15	3(3-0)	20	Well and updated as per HEC criteria	No	-	8	12	-	-
3.	MATH-772	Applied Numerical Analysis(M)	Dr Saima Mustafa	Fall-2014-15	3(3-0)	20	Well and updated as per HEC criteria	No	1	11	4		
4.	MATH-772	Applied Numerical Analysis(E)	Dr Saima Mustafa	Fall-2014-15	3(3-0)	20	Well and updated as per HEC criteria	No	1	5	13		
5.	STAT-756	Applied Survey Sampling	Mr Nasir Jamal	Fall-2014-15	3(2-2)	20	Well and updated as per HEC criteria	No	3	9	8		
6.	STAT-765(M)	Probability and Stochastic Process	Dr. M Hanif	Spring-2015	3(3-0)	16	Well and updated as per HEC criteria	No	1	12	3	-	-
7.	STAT-765(E)	Probability and Stochastic Process	Dr. M Hanif	Spring-2015	3(3-0)	21	Well and updated as per HEC criteria	No	-	13	6	-	2

8.	MATH-773	Operations Research Model(M)	Dr Saima Mustafa	Spring-15	3(3-0)	20	Well and updated as per HEC criteria	No	1	5	13		
9.	MATH-773	Operations Research Model(E)	Dr Saima Mustafa	Spring-15	3(3-0)	20	Well and updated as per HEC criteria	No	2	3	14		
10.	STAT-761(M)	Probability and Stochastic Process	Dr M Hanif	Fall-2015-16	3(3-0)	20	Well and updated as per HEC criteria	No	-	4	15	1	-
11.	STAT-761(E)	Probability and Stochastic Process	Dr M Hanif	Fall-2015-16	3(3-0)	20	Well and updated as per HEC criteria	No	-	11	9	-	-
12.	STAT-761(E)	Probability and Stochastic Process	Dr M Hanif	Fall-2015-16	3(3-0)	20	Well and updated as per HEC criteria	No		13	3	4	
13.	MATH-772	Applied Numerical Analysis(E)	Dr Saima Mustafa	Fall-2015-16	3(3-0)	20	updated as per HEC criteria		0	3	15	1	1
14.	MATH-772	Applied Numerical Analysis(E)	Dr Saima Mustafa	Fall-2015-16	3(3-0)	20	Well and updated as per HEC criteria	No	0	3	11	0	6
15.	STAT-765(E)	Applied Smoothing Techniques	Dr M Hanif	Spring-16	3(3-0)	20	Well and updated as per HEC criteria	No	3	17	-	-	-
16.	STAT-765(M)	Applied Smoothing Techniques	Dr M Hanif	Spring-16	3(3-0)	20	Well and updated as per HEC criteria	No	-	15	5	-	-
17.	STAT-760(M)	Regression Analysis	Dr M Hanif	Spring-16	3(3-0)	15	Well and updated as per HEC criteria	No		12	3		
18.	MATH-773	Operations Research Model(M)	Dr Saima Mustafa	Spring-16	3(3-0)	20	Well and updated as per HEC criteria	No	4	9	6		
19.	MATH-773	Operations Research Model(E)	Dr Saima Mustafa	Spring-16	3(3-0)	20	Well and updated as per HEC criteria	No	1	12	7		
20.	STAT-754(E)	Bayesian Analysis	Mr Nasir Jamal	Spring-16	3(3-0)	20	Well and updated as per HEC criteria	No	8	9	3		

21.	STAT-754(M)	Bayesian Analysis	Mr Nasir Jamal	Spring-16	3(3-0)	20	Well and updated as per HEC criteria	No	7	11	2		
22.	STAT-759(M)	Categorical Data Analysis	Dr Saadia Masood	Fall-15	3(3-0)	15	Well and updated as per HEC criteria	No	2	9	9	0	0
23.	STAT-753(M)	Applied Multivariate Analysis	Dr Saadia Masood	Spring-16	3(3-0)	15	Well and updated as per HEC criteria	No	3	12	4	0	1

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 very satisfied that the program was compromised of curriculum and extracurricular activities, 70% were answered that environment in the university was conducive to learning and 10% were certain about this. 60% were satisfied that program has developed analytical and problem solving skills. It is observed that majority of the graduating students have shown positive response in the current program, infrastructure and environment.

Performa 4
Research Student Progress Review Form

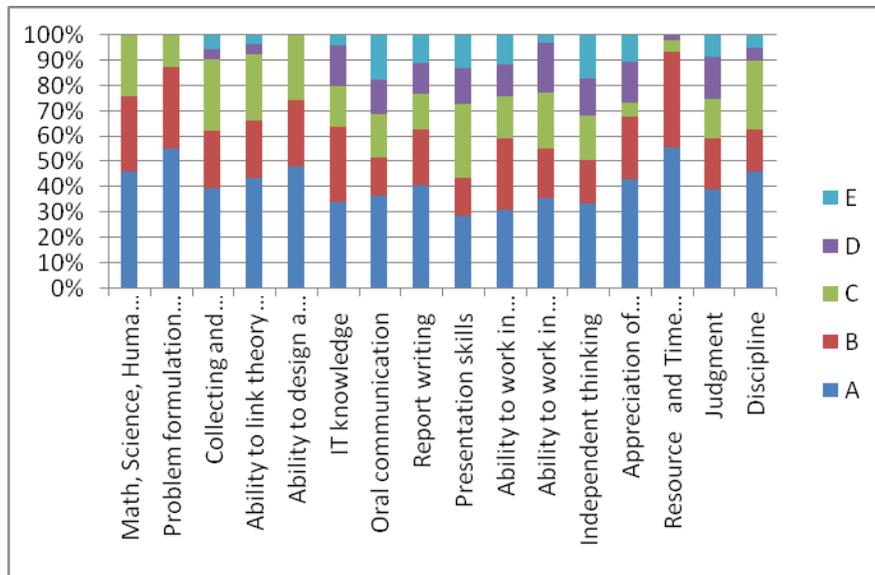
A total of 80 students of M.Phil were surveyed. Most of the students were satisfied on the level of education and supervision they received. About 65% students have highlighted the common problems such as the problems regarding to the availability of qualified teachers, deficiency of learning resources including lack of research materials computers and internet conditions. The same problems are already highlighted in 4th cycle report and they are still prevalent.

Performa 5: Faculty Survey Report
Brief summary of Results of Faculty Survey Report

The data were collected from seven faculty members who answered the following responses regarding the different questionnaires. As concerned to job satisfaction level and promotion aspects, the faculty members responded that 60% of faculty members were very satisfied, 25% satisfied, 20% uncertain, with their job clarity and upgrading procedures. Apart from this, most of the faculty members were satisfied with the healthy environment such as the cooperation received from their colleague, job security but they have too much workload. The faculty members feel lack of deficiency administrative support from the department and their promotion and progress through ranks.

Performa 7: Alumni Survey

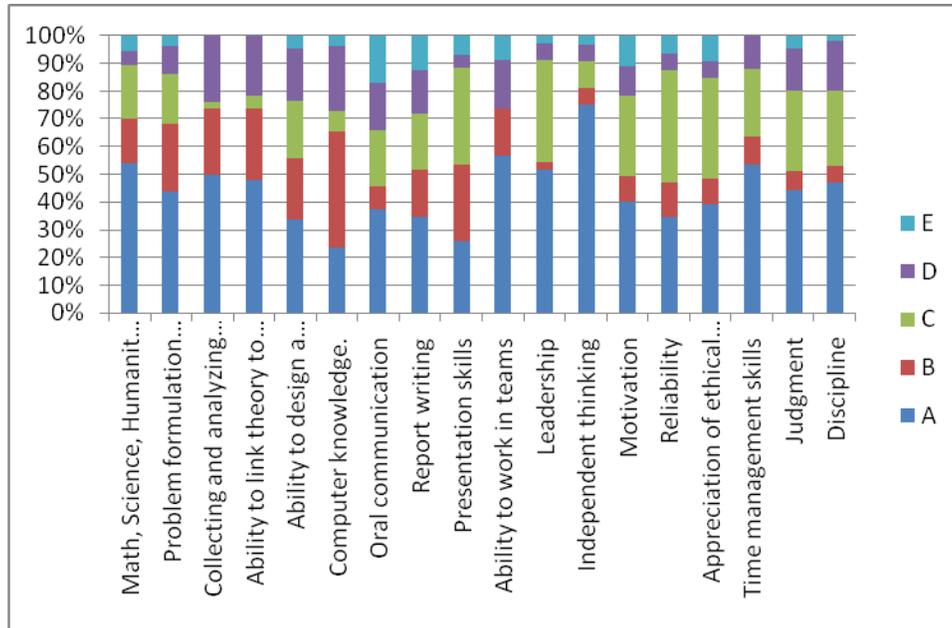
The purpose of this survey was to obtain alumni input on the quality of education, knowledge and communication and Interpersonal skills they received and the level of preparation they had at University. A total of 80% alumni were surveyed. The survey results were shown as follows.



It has been observed that 60% responded excellent regarding their abilities to problem formulation work. About 30% has reported excellent on Independent thinking and judgment skills. 20% answered good regarding their abilities to work in team and 20% agreed that department has improved their presentation skills. 40% has 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 is providing and to 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 were shown as follows.



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

CRITERION 2: CURRICULUM DESIGN AND ORGANIZATION:

Degree Title M. Phil (Statistics)

The M.Phil degree program consists of 02 academic years / 04 semesters. Ordinarily a whole time student cannot be enrolled for more than 18 and less than 10 credits in a semester except during the last semester. The credits will include the credits earned in respect of deficiency courses. As a whole a student has to study minimum 24 or 30 credit hours and 10 credit hours allocated for the thesis which is not be counted towards calculation of CGPA. For each course 10% marks are reserved for the assignments, 30% marks are for mid-term examination while 60% marks for final examination as per university rules. Degrees are awarded after completing the required number of credit hours (courses).

The break of 40 credit hours for the award of degree of the Master of Philosophy is as follows:

Major Courses:	18 Credit Hours
Minor Courses:	9 Credit Hours
Seminar-I	1 Credit Hour
Seminar-II	1 Credit Hour
Special Problem	1 Credit Hour
Research Work/Thesis/ Dissertation	10 Credit Hour
Total	40 Credit hours

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 accomplishes with the general requirements of the degree and is finely revised.

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

The syllabus fits very well and assures the core requirements for the program's documented goals.

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

At present, the department is offering the masters and M.Phil. degrees. The prerequisites for the degree are briefly discussed.

Objectives

Computer Laboratory is utilized for practical purposes and demonstrations to the graduates and M.Phil students in their preliminary and major courses.

Location and Area:

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

Adequacy for instruction:

Instruction tools like multimedia are available.

Software Available:

- SPSS
- MSTAT
- Minitab
- Mathematica

Safety Regulations:

No precautionary measures are available in case of incidents like fire (extinguisher), minor hazards and accidents, injuries (First Aid Kit). However, the university maintains a Medical Dispensary for such incidents.

Standard-3.1: General Computer Labs

- There is no availability of Software Manuals of each subject.
- The department library is not established so far. However, the teachers have prepared some manuals and mini library in the department personally.

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

Laboratories are retained by only two Laboratory Attendant and one laboratory assistant. No technological support is available.

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

- **Computing Facilities Support:** Computer facilities are accessible to all Faculty members and the M.Phil students.

- **Shortcoming in Computing infrastructure:** Laboratory technician is needed for computer Lab. The facilities of high speed internet computers should be available to all M.Phil students.
- **Safety arrangements:** In case of emergency, there are no suitable safety arrangement and safety maps. The department is located on the 1st floor; there is no emergency exit for the lab and classroom. No fire extinguishers have been fixed in any laboratory. No first aid kits/ facilities are presented in the laboratory/ department.

CRITERION 4: STUDENT SUPPORT AND ADVISING

The faculty of the department of Statistics has always been of great source of inspiration and support for the students. The teachers are always there for any kind of assistance to the students in any respect of life. To meet this criterion, the department conforms all the relevant standards.

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 M.Phil level, the elective and supportive courses are taught as per policy of HEC.
- Elective courses are offered as per strategy of HEC and the university. The courses from outside the department are also offered as per scheme of study provided by HEC.
- For M.Phil Programs, a variety of courses are offered according to need of the profession.

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 department, same instructor is employed so to reduce the difficulties for the theory and practical based courses.
- However, different faculty members may teach same course to different disciplines. In such cases, faculty meetings are conducted to communicate and interact with each other and the course contents are decided with mutual consent.

- To make sure effective interaction between students, faculty and teaching assistants at the time of course formulation both theoretical and practical aspects are focused.
- Theoretical problems are clarified and as well as the assignments are given to the students while the practicals are carried out in the lab.
- An effective interaction between each section is always emphasized.

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 a number of student supporting programs regarding admission, scholarship schemes, etc.
- The department arranges orientations, study tours and a range of cultural activities accordingly.
- The teachers prove to be a big parental support for the students and are helpful in solving students' problems, however currently there is no parent teacher association.
- The office of head of the department updates the students about the program requirement.
- Director, Student Affairs are appointed by university who is ready to help the students for tutorial and counseling for extracurricular activities. However there is no counseling cell in the department.
- Realizing the need for exploring job opportunities for the university graduates, Directorate of placement bureau has been established.

Weaknesses:

- Student advisory committee should be formed at the departmental level.
- Intra university departmental seminars should be conducted for the students for communications.

CRITERION 5: PROCESS CONTROL

The department applies quality control at subsequent stages by which main tasks are carried out. As the student concerns with the department right after the admission, the phase starts from his admission and registration till the completion of the academic years and even after that. It is the

department's duty to uphold quality control in each phase of the educational life of the student for which some norms 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 announced by the university in an advertisement in the newspapers.
- Number of seats available in the discipline is approved by the Academic council.
- The candidate having M.Sc degree with minimum 45% marks in the relevant subject can pursue admission in M.Phil.
- The process of admission is a trustworthy phase and is followed as per rules and criteria set by the university. Due to this reason, an advertisement is published in the national newspapers by the Registrar office which also publicizes the time of the merit lists.
- The lists are presented right after the completion of whole phase. The nominated students are assigned registration number after paying the required 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

- At the completion of the admission process, the students names are forwarded to the registrar office for proper recordkeeping in the specific discipline and registration numbers are assigned to the students.
- The Mid, Final and Practical exams, assignments and different research proposals are the ways by which the students are evaluated. The subject quizzes are also supportive for the assessment of competences of students.
- The students are promoted to the next semester on the behalf of assessment, which is done through the result of respective semester, if the students fulfill criteria of the university.
- A comprehensive examination followed by a viva voice is held for M.Phil students by the end of course work. The students passing the exam are considered recommendable to award the degree.

- At large, the students are enrolled on competition basis keeping in view the educational 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

- Recruitment strategy followed the university is commended by HEC induction of all posts is done as per rule. Vacant and newly generated posts are publicized in the national newspapers, requests are collected by the registrar office.
- Call letters are issued to the short listed applicants on the basis of their experiences, qualification, publications and other qualities / activities as fixed by the university.
- The candidates are interviewed by the university selection Board. The candidates having any previous experience, publications or any additional qualification are entertained. Principal and alternate candidate are selected on merit.
- Syndicate meeting is held for further orders such as when to issue appointment letters to the employees.
- Induction of new candidates rests on the number of approved vacancies.
- Standard set by HEC are considered.
- At present, no procedure exists for retaining highly qualified faculty members, though, the revised pay scales of structures is really attractive.
- HEC also provisions appointment of highly qualified members as foreign faculty professor, National Professors and allots them various departments of the university.

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

- As stated earlier that the department of statistics has outstanding teachers who teach the students with the vision of conveying true knowledge.
- The teachers explain in a responsive way, review and apprise the syllabus as needed.
- The students are educated with the aid of overheads, slides, pictures etc.
- Though the subject books form the authentic authors are hardly available in the library but their economical Asian versions are available in the markets. Teachers also offer the students with photo state copies of some significant books, articles and notes.

- Teachers formulate their lectures from the books and updated knowledge accessible and deliver them to students. Students are also provided with few research assignments, which, the teachers know that they can go through with the help of literature and internet facility available in the university library.
- Seminars are also being conducted at small level so that to encourage and guide the students to do research. One seminar has been scheduled at departmental level.
- The advanced knowledge is very essential. With the new and diversified 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

- The assessment of the students' competences is a continuous phase which relies on the whole academic years. The evaluation system consists of quizzes, mid and final examinations, practical plans, assignments and reports, oral and methodological presentations.
- The result is notified after the final examinations which are held at the end of the academic years. The exams are taken to judge the capabilities of students by examining applied questions and problems about the various aspects of the subject which help the students to be completely assessed. Only the students passing this exam are granted the degree.
- Candidates who secure 80% or more are awarded a gold medal to the students on the annual convocation that is 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	PhD	Probability and Stochastic Analysis
2	Dr. Saima Mustafa	Assistant Professor	PhD	Complex Analysis,

3	Mr. Nasir Jamal	Assistant Professor	M.Phil.	Statistical Methods, Survey Sampling,
4	Dr. Muhammad Jamal	Assistant Professor	PhD	Mathematical Modeling & Simulation.
5	Dr. Saadia Masood	Assistant Professor	PhD	Survey Sampling

The department faculty currently consists of one Associate Professor and two Assistant Professors. Most of the faculty members are improving and updating their qualifications in different PhD research programs. However, the department is in short of teaching faculty as two 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 of the faculty members are busy in improving their qualifications. So far, one of the members has completed the PhD research and has joined back the department and two of them are busy in different research programs in renowned institutes both inside and outside the country.

All the faculty members completing their researches were given study leaves and were fully accommodated by the department and university.

Any faculty member if interested in improving his/her education can avail any and every available chance. Full accommodation from the department is provided.

The faculty members are being evaluated on regular basis by the students.

The initialization of M Phil classes is not only a big encroachment for the students but is and will be great help to the teachers.

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 have been serving the department. The department accomplishments are being carried out with the help of visiting faculty. As stated earlier, any faculty member if interested in any research or learning refining platform is fully and instantaneously supported.

The department sustains brilliant working environment for the faculty members. There is complete cooperation amongst them. Teachers are being evaluated by the graduates to attain the input on the quality of education university is providing and the results are nourishing. Teachers of the department are keenly involved in imparting quality education. Up to now, the faculty members of the Stats department have collaborated in each step taken by the university to achieve the program objectives. They are fully devoted for the betterment of the quality education and departmental competence.

CRITERION 7: INSTITUTIONAL FACILITIES

The university has one central library which is aided 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 number of 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 internet is an essential component.

The faculty members of the Stats department are always prepared to be innovative and experimental in their subject. They like to have access to new and authentic soft wares which are helpful in studying theories and concepts of subject e.g. MSTAT, SPSS, Minitab and Eviews etc.

Weaknesses:

- The library has not sufficient literature. Prestigious and high ranked journals are scarcely available so there is difficulty in advanced research culture.
- Suggested books of the program are not available to the students.
- The departmental computer lab has been facilitated with the internet capacity.
- The same facility should be provided to the faculty offices.
- A departmental library should be formed with having all the considerable 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 containing of 25 personal computers with the internet facility.
- The access to various web sites of prestigious research journals and publications e.g. Science Direct, JStor, ACM and IEEE provided by HEC is also accessible in the lab. Electronic library books and journals are available for learning purpose via Higher Education Commission.

Weaknesses:

- The personal computers available are not enough for the needs to be fulfilled.
- The library must have an up-to-date technical collection pertinent to the program and professional personnel.

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

- The department has a single personal class room and one room is being shared with the economics department. As mentioned earlier, there is one computer lab in the department provided with 25 personal computers.
- Inadequacy of faculty offices to accomplish the requirements of all the faculty members.

Weaknesses:

- The lab is not fully furnished with all the facilities.
- Due to lack of classrooms we have to use the computer lab as an alternative.
- Class rooms must be adequately furnished and offices must be adequate to facilitate the faculty to perform their obligation.

CRITERION 8: INSTITUTIONAL SUPPORT

Though the institute is fully compassionate and accommodating but the economic resources in this respect are inadequate. Let us have a look at 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 department environment is extremely friendly and relaxed. All the faculty members have a complete harmony and are very cooperative with each other. The courses are allocated with the total consent of the teacher.
- Faculty offices are well built, spacious and airy.
- The departmental lab has one lab assistant.

Weaknesses:

- Deficiency of secretarial support, technical staff and office equipment.
- The number of faculty offices as mentioned earlier are insufficient for the members.
- The classes are taken in the lab, due to unavailability of class rooms,

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. Phil. Degree awarded	Nearly 75	24 students joined. M.Phil. Program at different universities
2.	Students : Faculty ratio	1:4	Does not fulfill HEC criteria
3.	Technical : Non Technical ratio	1:3	Does not Fulfill HEC criteria
4.	High Quality Graduate Students, PhD students, Research Assistants		Research papers and seminar

However, there are research publications and seminars conducted by the department.

SUMMARY

The quality assessment report for the year 2014-16 of the Department of Mathematics and Statistics is presented, which shows progress in the last years. Presently, there are four faculty members are on duty and two of them have PhD qualification.

In this report, it has been analyzed the department progress in different aspects like course evaluation, teacher evaluation, alumni survey, graduating student surveys and faculty survey by program team. The data has collected and explained in the form of graphs and tables. The charts of this report highlighted the assessment efficiency of teachers evaluated by the students. The evaluation of the teachers has been carried out using students' opinions. It is noticed that all the teachers have been evaluated for all the different criteria using Performa 1 and 10 and have been proved to be appropriate and good for almost all of them. The outcomes are good, fair and satisfactory for most of the questions. It has been found from graphs and charts shows that students are satisfied with the present performance of the teachers. Most faculty members are very impartial and punctual in their lectures. The students are additionally satisfied the quality of the examination, and teacher supervisions. Students have also showed positive response on scholarship grants and financial help from the institution. Besides this, the limited no of classroom, however computer laboratory infrastructure is updated by new computers and internet resources. There is still problem to access to various scientific journals such as jstore, science direct etc. According to employer survey, the department has produced qualified statistician with broad knowledge and most of them are designated on good jobs. Their jobs are good and their degrees proved to be beneficial in their future careers. As concerned to Faculty members, they are satisfied with their job environment but still they have faced the major workload problem.

The performance of the department could also be further improved when you consider that;

- Qualified faculty is required for the upgradation of the department, as in future the department intends to start the PhD Statistics programs as well.
- At present there is no professional training for faculty members. Training programs and workshops at national and international levels are required.

- The departmental computer lab need latest internet facilities such as accessing of different research websites and availability of latest software's .Improvement in this area may more suitable to enhance the level of research and teaching.

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@uair.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	Teaching, Research
Brief Statement of Research Interest	Limit theory in probability and large sample theory in statistics. Statistical Inference for Stochastic Processes
Publications	8
Research Grants and Contracts	no
Other Research or Creative Accomplishments	no
Selected Professional Presentations	no

FACULTY RESUME

Name:	Dr. Saima Mustafa
Personal:	saimamustafa28@gmail.com 0333-5249362
Experience:	16 years
Honors and Awards	COMSATS 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 = 30 students Co-supervision = 28 .
Service Activity	Teaching, Research
Brief Statement of Research Interest	<ul style="list-style-type: none"> ➤ Geometric Function Theory ➤ Complex Analysis ➤ Optimization Theory ➤ Numerical Analysis ➤ Operations Research
Publications	8
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above
Selected Professional Presentations	Workshops, seminars

FACULTY RESUME

Name:	Dr. Muhammad Jamal
Personal:	Department of Mathematics & Statistics, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan. jamal@uair.edu.pk Contact: +92-51-9062777
Experience:	12 years
Honors and Awards	Chinese Government Scholarship in PhD.
Memberships	<ul style="list-style-type: none"> ➤ Admission Committee, Department of Mathematics & Statistics. ➤ Quality Enhancement Cell (QEC) team member, Department of Mathematics & Statistics.
Graduate Students Postdocs Undergraduate Students Honor Students	M.Phil Statistics Supervision = 5 students
Service Activity	Teaching.
Brief Statement of Research Interest	<ul style="list-style-type: none"> ➤ Mathematical Modeling & Simulation. ➤ Mathematical Biology. ➤ Analytical Dynamical Systems.
Publications	5
Research Grants and Contracts	-
Other Research or Creative Accomplishments	As described above
Selected Professional Presentations	-

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	2
Research Grants and Contracts	No
Other Research or Creative Accomplishments	No
Selected Professional Presentations	No

FACULTY RESUME

Name:	Dr. Saadia Masood
Personal:	2015 Feb till Date: Assistant Professor. Department of Statistics and Mathematics. PMAS-University of Arid Agriculture, Rawalpindi. saadia2masood@hotmail.com
Experience:	2years
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 = 10 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)

	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

Name	Nasir Ali
Personal	<p data-bbox="630 296 1382 1098"> 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 </p> <p data-bbox="630 1157 963 1188">GENERAL INTEREST</p> <p data-bbox="683 1209 1382 1297">❖ Reading books, Computer Islamic magazine, to play Badminton.</p> <p data-bbox="683 1325 854 1356">Academics</p> <ul data-bbox="683 1404 1349 1875" style="list-style-type: none"> ▪ 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

	<p>COMPUTER SKILLS</p> <ul style="list-style-type: none"> ▪ Ms-Word, Ms-Excel, Ms Access, Power Point ▪ Internet Explorer, Outlook Express ▪ Data Analysis (Minitab, Mstat-C, SPSS)
Experience	<p>JOB EXPERIENCE</p> <ul style="list-style-type: none"> ❖ 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	<p>TEACHING RESPONSIBILITIES</p> <ul style="list-style-type: none"> ❖ At the under graduate classes <ul style="list-style-type: none"> ➤ Introduction to Statistics ❖ At post graduate classes <ul style="list-style-type: none"> ➤ Sampling Techniques ➤ Statistical Quality Control & Reliability ➤ Operations Research ➤ Population Analysis ➤ Theory of Matrices & numerical Analysis ➤ Experimental Design <p>RESEARCH DUTIES</p> <ul style="list-style-type: none"> ❖ To assist the post graduate students to develop research design, data collection, analysis of data and in thesis writing.
Publications	08
Brief Statement of Research Interest	Sampling Techniques, Statistical Quality Control & Reliability, Operations Research, Non parametric