

***Pir Mehr Ali Shah***  
**Arid Agriculture University, Rawalpindi**



**Self-Assessment Report (2023-24)**

**Department of Botany**  
**(M. Phil.Botany)**

**Program Self-Assessment Team**

- **Dr. Noshin Ilyas (Coordinator)**
- **Dr. Khafsa Malik (Member)**
- **Dr. Zia ur Rehman Mashwani (Member)**

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## **Introduction**

In PMAS Arid Agriculture Rawalpindi, Department of Botany is one of pioneer department of university with diverse, exciting and challenging expertise in almost all fields of plant science. The discipline of Botany in PMAS-AAUR was introduced as a separate Department in 1995. M.Phil. is one of the main programs being offered in department in addition to M.Sc. And Ph.D. About 74 students are enrolled in M.Phil. Program. The number of passed out students in M.Phil. program so far is 37 in 2 years he objectives of M. Phill program are to prepare educational leaders for scientific institutions of public and private sector; provide the learners an understanding of educational process.

The department has 4 research laboratories and one general laboratory for graduate students. These laboratories are well equipped with modern apparatus like HPLC, TLC, Thermo cycler, phase contrast microscopes, spectrophotometers, ultra freezer, GPS, etc. All the work relevant to Plant Physiology, Plant Ecology, GIS mapping, Plant Taxonomy and Plant Microbe Interaction can easily bed one in the self-sufficient lab satany level. Presently, the department is providing research facilities in all areas of medicinal plant including phyotchemistry, molecular characterization of various compounds &

Allelopathic screening of plant extracts, phytosociology, ethno botany, aflatoxin and their integrated management, stress and drought physiology, gene transformation, taxonomic studies in all fields including algal and fungi for perusing M. Phil./PhD studies.

Schemes of studies are being constantly reviewed and updated asper HEC 'recommendations The department offers a variety of study programs to enhance students'professional training and career opportunities. It regularly holds national and international training workshop, seminars to exchange knowledge and views. The faculty is actively engaged in a number of research projects; some of which are internationally collaborated and funded. Department of Botany prepares students for careers in industry, government agencies and teaching jobs.

## **SECTION 1**

### **Components of Self-Assessment Process:**

This Self-Assessment has been prescribed on the cradle of the eight criteria described in self-Assessment Manual. The Self-Assessment Report (SAR) contains eight sections. The first section outlines the program mission and objectives. Section 2 provides information about the curriculum development. Section 3 enlists the laboratories and other relevant information followed by student support and guidance. The last four sections provide information about student support, process control, faculty characteristics and institutional facilities and support provided by the university.

### **Criterion-1: Program Mission, Objectives and Outcomes**

#### **Introduction**

The department of Botany is actively involved in train in M. Phil students at expert proficiency level.

### **Standards 1-1: Documented measurable objectives Mission of the**

#### **Program:**

Our Mission is to compromise an eminence and valuable guidance in the field of Botany. Our integrative encouragement reproduces the position of solid corrective and inter disciplinary methodologies in research and edification. The notable theme of the department is to regulate, indorse, and conduct acquaintance regarding basic plant biology and fetch supremacy in the biological sciences.

### **Objectives**

1. To develop the discipline of teaching and research for the graduate students.
2. To guide the students how to select, plan and prepare the research project on issues of economic and national importance in the area.
3. The ability to formulate a specific research plan and carry out original independent research on a hypothesis to be tested in depth concerning novel ideas in the field of Botany
4. To commence essential and applied research plan and carry out original independent research on a hypothesis to be tested in depth concerning novel ideas infield of Botany

5.The presentation of their search results to the larger community of scholars nationally and internationally.

6.To transport inventive thinking in students to grow cost effective research accomplishments.

**Outcomes:**

1. Preparation of research projects based on the identification of problems and use of scientific study techniques.
2. Communication skills through presentations, oral discussions, scientific and review articles, etc.
3. Enhancement of knowledge and vision in the field of Botany.
4. Scientific writing skills and publication of research papers in scientific journals.
5. Identification of priority problems in plant management/ conservation and suggest appropriate solutions.
6. Plagiarism free papers are being published successfully.

Sr.#	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	Strengthening of discipline	On the basis of recognition importance impact of plant disease in the are aassessing intrest	Continuous activity	Teaching method need to be improved	Revision and improvement in teaching method like use of multimedia
2.	Guidance to students in research	Assessing intrest of students ,student feedback	Before start of research	Students makes presentations and reports	Presentations seminars communication skill development
3.	Ability to formulate specific research and carry out	Through surveys	identity of priority problems	Continuous activity	New courses to be included in curriculum, research on new problems Approval of new curriculum

	independent research,				
4.	Essential and applied Research	Specialized faculty members in specific field. Upgradation of labs	Incessant process	New Research in established	Establishment of herbarium and botanical garden. Vigorous research activities sand publication
5.	The presentation there search results to the large community	Number of research publication sand projects	It is Generally measured annually	publications are increasing as the number of projects	At present several research projects are in progress.
6.	To transport inventive thinking in student to grow	Reflected by student efficiency	At the end of projects	Successful graduates are Working in different organization	By doing quality research.

#### Program outcomes and their relationship with objectives

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

+ = Moderately satisfactory,

++ = satisfactory

+++ = Highly satisfactory

## **Program objectives**

### **Meeting Standards 1-2: Program Outcome Measurement**

A number of assessments based on the SAR questionnaires were commenced to assess the Program outcomes/ graduates of the department and teacher's evaluation. Maximum students filled the survey forms.

### **Program Assessment Results:**

The outcomes of Program assessment by the SAR are presented in graphical method. However, the inclusive outcomes show that the students are contented with the Program and method of teaching.

### **Student Course Evaluation**

Maximum of the student's favor almost the course contents of each course, their prospect and applications in daily life beside with the presentation by the concerned tutor. The results of this survey are presented graphically.

### **Standards 1-3:**

Emphasis on student involvement in class activity/teacher interaction.

More emphasis on practical.

### **Strength of program**

Updated course, curriculum in accordance with HEC criteria overall student satisfaction.

### **Weakness of program**

Practicals should be more emphasized.

### **Future development**

Improvement in class, infrastructure. lecture halls, multimedia, chair.



**STUDENTS**  
**COURSE & TEACHER**  
**EVALUATION PERFORMA**

**SPRING 2023**

**M.Phil.**

**COURSE EVALUATION**



Pir Mehr Ali Shah

Arid Agriculture University, Rawalpindi

PERFORMA 1

Course Evaluation

Spring-23

Course Name:

Session : Spring-23

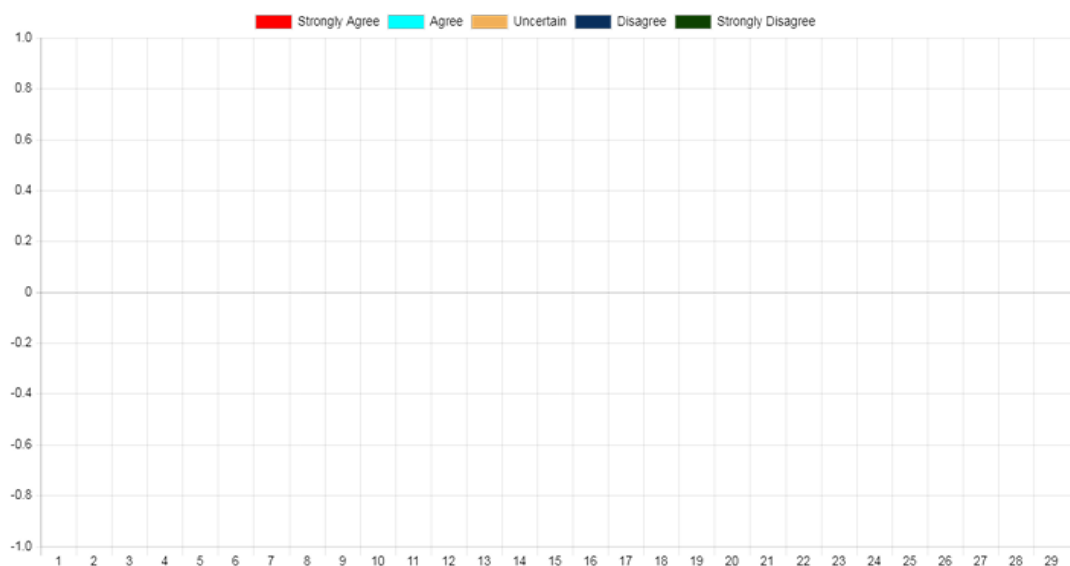
Teacher Name: M. Naveed Iqbal

Special Problem

Section: C

Degree: M.phil (Botany)

Semester# 2



No data available



Pir Mehr Ali Shah

Arid Agriculture University, Rawalpindi

PERFORMA 1

Course Evaluation

Spring-23

Session : Spring-23

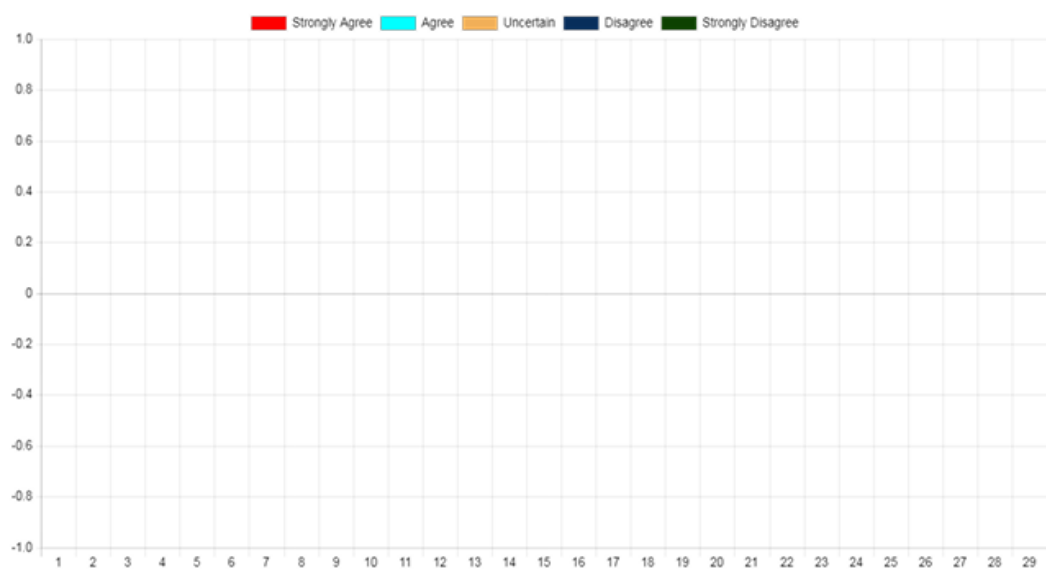
Teacher Name: M. Zia ur Rehman

Course Name: Special Problem

Section: E

Degree: M.phil (Botany)

Semester# 2



No data available

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi

PERFORMA 1

Course Evaluation

Spring-23

Course Name:

Session : Spring-23

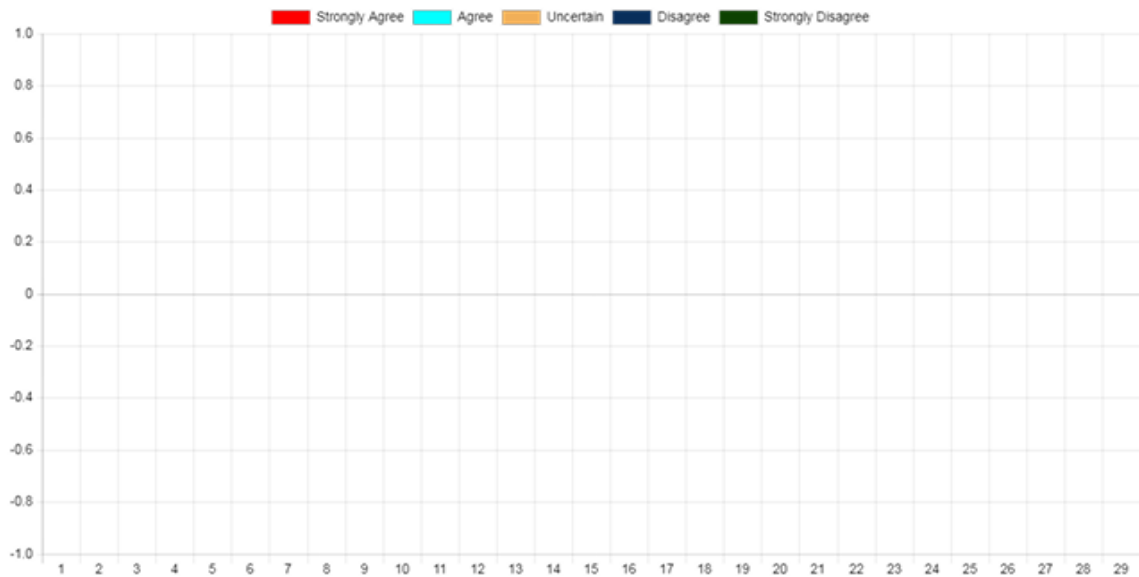
Teacher Name: Dr. Noshin Ilyas

Thesis

Section: B

Degree: M.phil (Botany)

Semester# 3



No data available

**SPRING 2023**

**M.PHIL.**

**TEACHER EVALUATION**

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi  
PERFORMA 10  
Teacher Evaluation  
Spring-23

Teacher Name: M. Zia ur  
Rehman

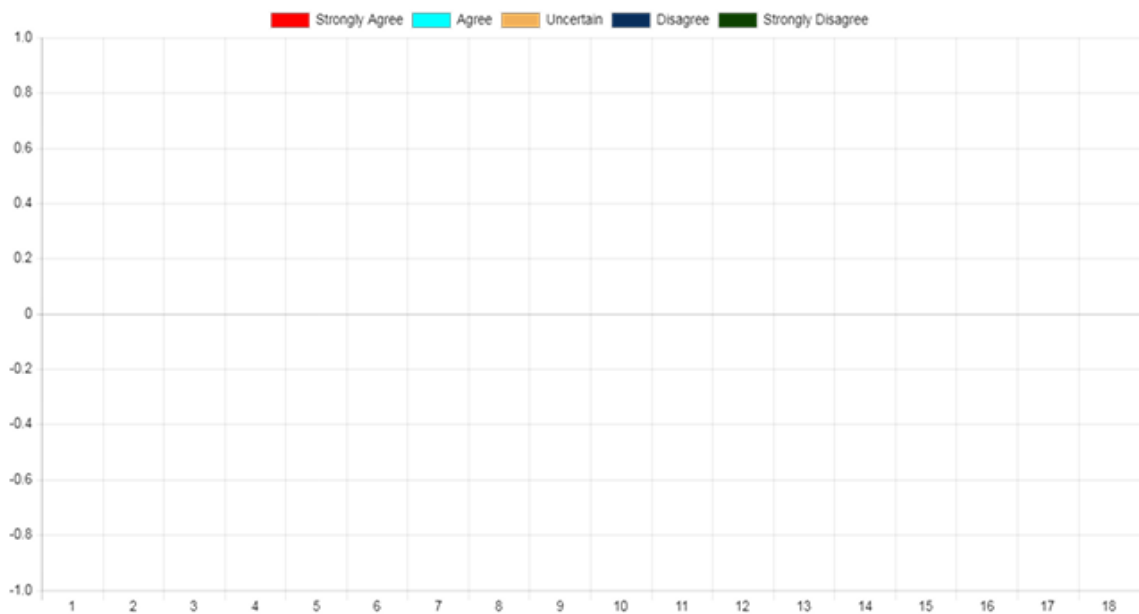
Course Name: Special Problem

Session : Spring-23

Section: E

Degree: M.phil (Botany)

Semester# 2



No data available

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi  
PERFORMA 10  
Teacher Evaluation  
Spring-23

Course Name:

Session : Spring-23

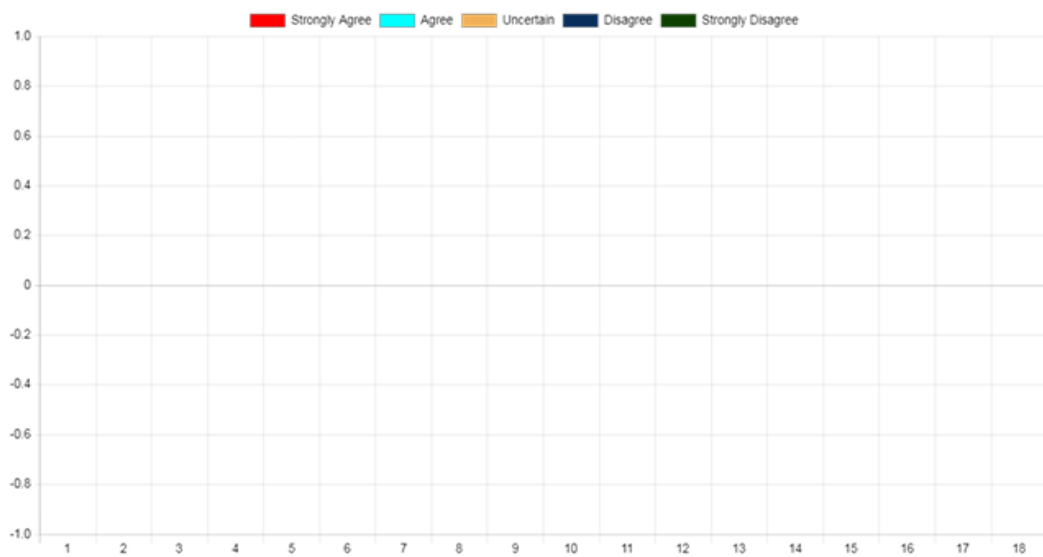
Teacher Name: M. Naveed Iqbal

Special Problem

Section: C

Degree: M.phil (Botany)

Semester# 2



No data available



**FALL 2023**  
**M.Phil.**  
**COURSE EVALUATION**

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi

PERFORMA 1  
Course Evaluation  
Fall-23

Course Name:

Session : Fall -23

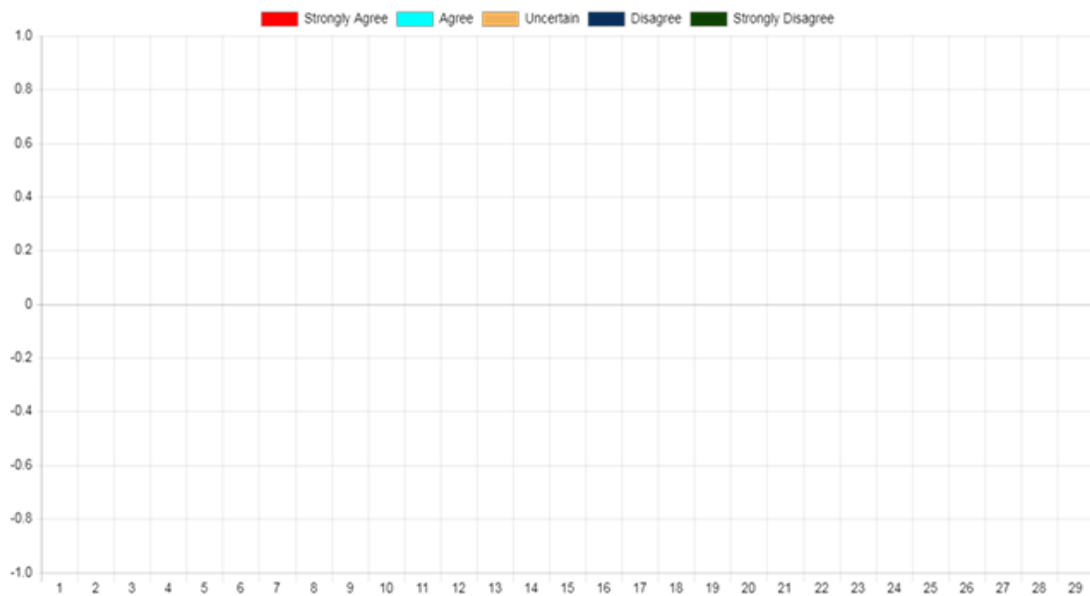
Teacher Name: M. Naveed Iqbal

Thesis

Section: C

Degree: M.phil (Botany)

Semester# 3



No data available.

**FALL 2023**

**M.Phil.**

**TEACHER EVALUATION**

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi  
PERFORMA 10  
Teacher Evaluation  
Fall-23

Course Name:

Session : Fall-23

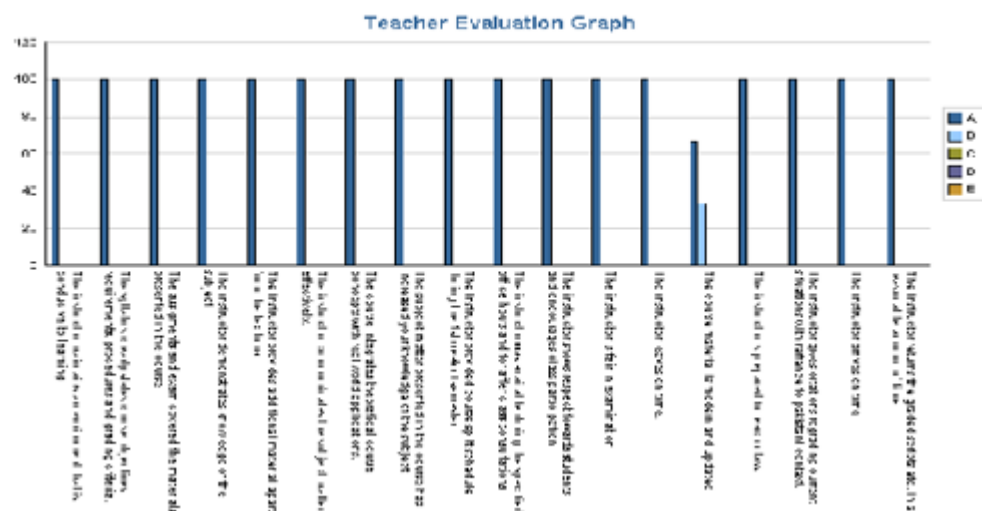
Teacher Name: M. Naveed Iqbal

Thesis

Section: C

Degree: M.phil (Botany)

Semester# 3



### General Comments of the Students about this Teacher

**Weaknesses:** Students were satisfied by the teacher

**Strengths:** Instructor maintained the environment that is good for learning. She was capable to communicate this course in a respectable routine, with all characteristics of training and communication skill.

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi

PERFORMA 10

Teacher Evaluation

Fall-23

Course Name:

Session : Fall-23

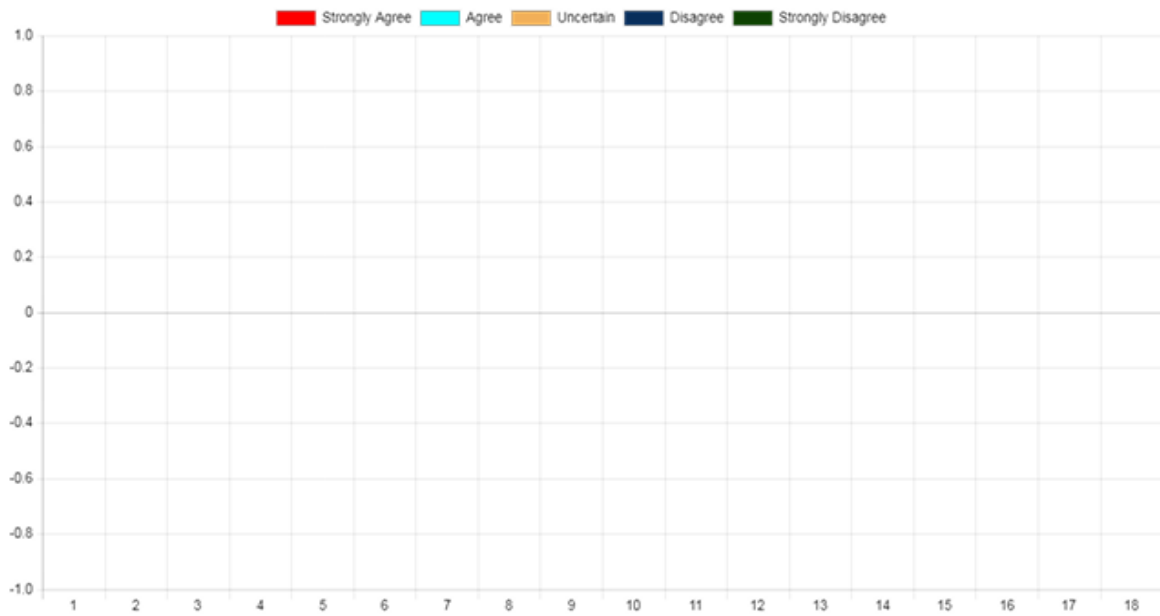
Teacher Name: Dr. Saira

Thesis

Section: F

Degree: M.phil (Botany)

Semester# 3



**No data available**

**SPRING 2024**

**M.Phil.**

**COURSE EVALUATION**



Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi  
PERFORMA 1  
Course Evaluation  
Spring-24

Course Name:

Research Techniques and

Instrumentation

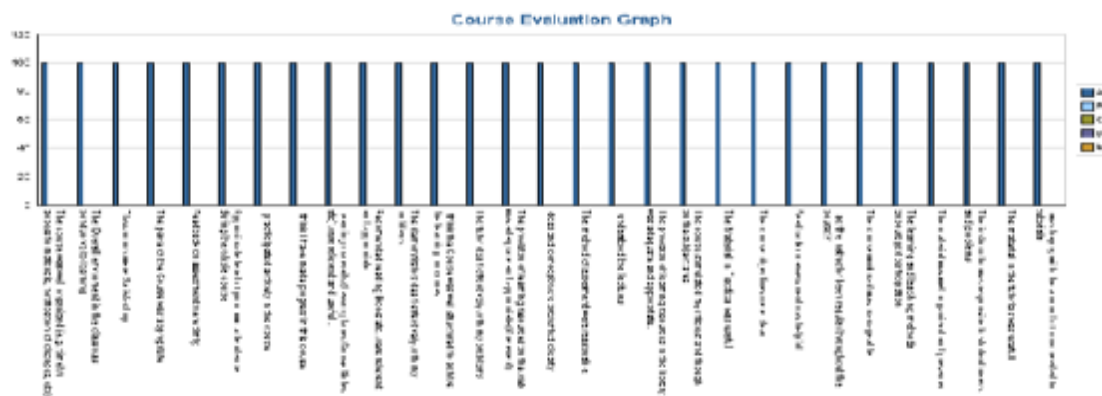
Session : Spring-24

Teacher Name: Dr. Khafsa Malik

Section: A

Degree: M.phil (Botany)

Semester# 3



### General Comments of the Students about this Course

**Weaknesses:** No weakness indicated.

**Strengths:** Additional materials were provided apart from textbooks. Instructor linked the subject matter successfully. Graded scripts were returned in time.



**SPRING 2024**

**M.Phil**

**TEACHER EVALUATION**

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi  
PERFORMA 10  
Teacher Evaluation  
Spring-24

Course Name:

Session : Spring-24

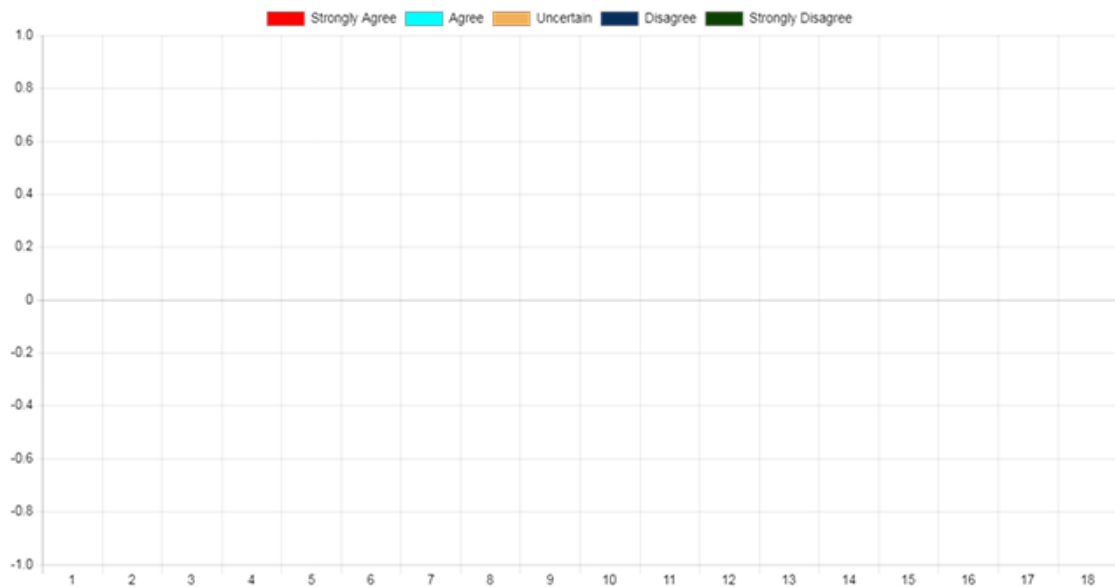
Teacher Name: Dr. Saira Asif

Thesis

Section: X

Degree: M.phil (Botany)

Semester# 4



No data available

Pir Mehr Ali Shah  
Arid Agriculture University, Rawalpindi

PERFORMA 1  
Teacher Evaluation

Spring-24

Course Name:

Session : Spring-24

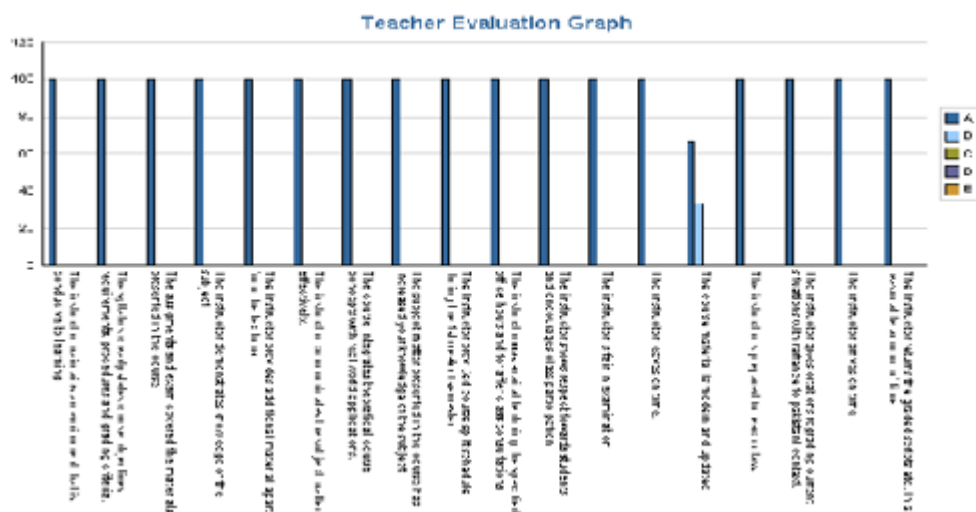
Teacher Name: Dr. Naveed Iqbal

Phytogeography

Section: A

Degree: M.phil (Botany)

Semester# 2



**General Comments of the Students about this Teacher**

**Weaknesses:** The comments were satisfactory

**Strengths:** The tutor showed balanced attitude and communication skill. He was prepared for each class and was available for any time. Established participation of students in class discussion included recent updated materials.

**Fall 2024**

**M.Phil.**

**COURSE EVALUATION**

No data available

## Performa 2: Faculty course review report

Spring 2023													
BO T- 737	Applied Ethnobotany	3(2 - 2)	Examination /Quiz	18	Satisfact ory	Not yet	Spr ing 202 3	1 2	6	0	0	0	.Dr.Khafsa Malik
BO T - 720	Seminar-II	3(2 - 2)	Examination /Assignment	18	Satisfact ory	Not yet	Spr ing 202 3	1 6	2	0	1	0	Dr. Zia ur Rehm an Mash wani
BO T- 727	Environm ental biotechnolog y	3(2 - 2)	Respective Department	18	Satisfact ory	Not yet	Spr ing 202 3	1 0	8	0	1	0	Dr.saira asif
BO T - 715	Phytogeogra phy	3(2 - )	Examination /Assignment	18	Satisfact ory	Not yet	Spr ing 2023	3 4	1	0	1	0	Prof. Dr. Rehmatullah Qureshi
ST AT- 702	Biostatistical Analysis	3(3 - 0)	Examination /Quiz	18	Satisfact ory	Not yet	Spr ing 2023	6	7	3	1	1	Dr. Nasir Ali

BO T - 719	Special Problem	1(1 - 0)	Examination /Quiz	18	Satisfact ory	Not yet	Spr ng 202 3	1 8	0	0	0	0	0	Respect Tive Super voisor
BO T - 709	Thesis	6(0 - 12)	Examination /Quiz	20	Satisfact ory	Not yet	Sprin g 2023	2 0	0	0	0	0	0	Respect Ive Depart ment.
<b>Fall 2023</b>														
BO T - 718	Arid Zone Eco logy	3(2 - 2)	Examination /Quiz	19	Satisfact ory	No t yet	Fal l 202 1		2	17	0	0	0	Dr. Arshad
BO T - 721	Stess Phy siology	3(2 - 2)	Examination /Quiz	19	Satisfact ory	No t yet	Fal l 202 1	1 7	2	0	0	0	0	Dr. Noshin ilyas
BO T - 736	Plant Systematics	3(2 - 2)	Examination/Quiz	19	Satisfact ory	No t yet	Fal l 202 1	1 9	0	0	0	0	0	Dr Khafsa Malik
Bot - 713	Plant- Reproductiv e Biology	3(3 - 0)	Examination/Quiz	19	Satisfact ory	No t yet	Fal l 202 1		3	9	7	0	0	Dr. Mubashir

BO T - 720	Seminar-I	1(1 -0)	Presentation	19	Satisfact ory	No t yet	Fal l 202 1	1 9	0	0	0	0	Dr. Noshin ilyas
BO T - 709	Thesis	6(0 - 12)	Examination /Quiz	18	Satisfact ory	No t yet	Fal l 202 1	-	-	-	-	-	Respect Ive Depart ment.
<b>Spring 2024</b>													
BO T - 719	Special Problem	1(1 - 0)	Examination /Quiz	19	Satisfact ory	No t yet	Spr i ng 202 2	1 9	0	0	0	0	Respect Tive Super voisor
ST AT- 702	Biostatistical Analysis s	3(3 - 0)	Examination /Quiz	19	Satisfact ory	No t yet	Spr i ng 202 2	6	11	2	0	0	Dr. Mursla
BO T -733	Advances in physiology	3(3 - 0)	Examination quiz	19	satisfacto ry	No t yet	Spr i ng 202 2	1 7	2	0	0	0	Dr Noshin Ilyas
Bot- 799	Research and thesis	10(0 - 20)	EXAMINATI ON QUIZ	18	Satisfact ory	No t yet	Spr i ng 202 2	1 8	0	0	0	0	Respe ctive superv oisor
BO T - 726	Envionment al Toxicology and bioremedia tion	3(2 - 2)	Examination /Quiz	19	Satisfact ory	No t yet	Spr i ng 202 2	1 3	6	0	0	0	Dr.Sai a Asif

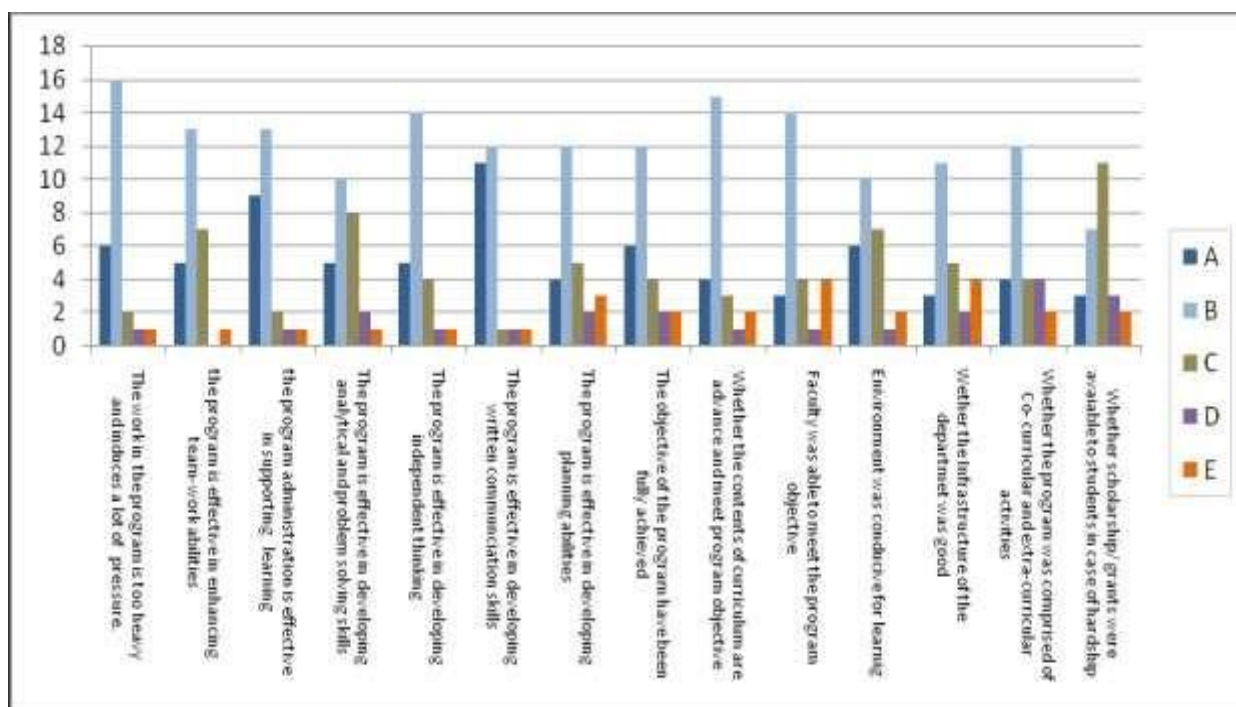


BO T- 737	Applied Ethnobotany	3(2 - 2)	Examination /Quiz	19	Satisfact ory	No t yet	Spr i ng 202 2	3	12	4	0	0	0	Dr.Rehmatu llah Qureshi
BO T - 720	Seminar-II	1(1 -0)	Presentation	19	Satisfact ory	No t yet	Fal l 202 1	1 9	0	0	0	0	0	Dr. Zia-ur- Rehman
<b>Fall2024</b>														
Bot - 72 0	Seminar-I	3(1 - 0)	Class Quiz assign ment	18	satisfac tory	No	Fal l - 202 2	1 8	0	0	0	0	0	Dr. Ziaur Rehman
Bot - 73 5	Plant Microbe Interaction- 735	3(2 - 2)	Presentation and Speak ing skill	18	satisfac tory	No	Fal l - 202 2	1 5	3	0	0	0	0	Dr. Noshin Ilyas
Bot - 72 1	Stress phy siology	3(2 - 2)	Presentation and Speak ing skill	18	satisfac tory	No	Fal l - 202 2	1 5	3	0	0	0	0	Dr. Naveed Iqbaal Raja
B O IT 7 08	Bioinformati cs	3(2 - 2)	Written ex am/Presen tation	18	Satisf actory	No	Fal l - 202 2	1 3	4	0	1	0	0	Dr Reh Ayesha Fatima
B OT	Forestry and Environment	3(3 - 0)	Writtenex am/Prese ntation	18	Satisf actory	No	Fal l	1 4	4	0	0	0	0	Dr

FR-705							- 2022						Sabeeqa Usman
BIOL-727	Environmental Biotechnology	3(3-0)	Written exam/ Presentation	18	Satisfactory	No	Fall 2022	18	0	0	0	0	Dr Wajiha Seerat
BOT-799	Research and Thesis	3(3-0)	Experiment	19	Satisfactory	No	Fall 2024	-	-	-	-	-	Respective Supervisor

### Performa3: GRADUATING STUDENTS SURVEY.

A total of 30 students were included in the survey. The data showed that most of the students were very satisfied or satisfied with the program, but were dissatisfied for the work pressure in the program. More over, most of the students were very satisfied with program administration, development of analytical and problem solving skills, the program is effective in developing independent thinking, written communication skills and planning abilities, the contents of curriculum are advanced and meet program objectives, faculty was able to meet the program objectives and the environment was conducive for learning.



**Proforma4: RESEARCH STUDENTS PROGRESS REVIEW**

	<b>Question</b>	<b>Comments by Students</b>
1	Please outline details of your progressing  Your researchs in your last review	The large portion of student work is a boutto publish
2	Do you have any comments on the level of Supervision received?	They are fully satisfied (100%)
3	What do you plant achieve over the next Six months?	Students will complete their labwork
4	Do you have any comment on generic or subject specialist training you may?  Have received or would to like to receive Internally or externally?	M.Phil (Interested in receiving any this sort of training internally or externally,aspossibl e)
5	Do you have easy access to sophisticated Scientific equipments?	Yes I have access
6	Do you have sufficient research material/commoditie s available?	Yes available

Performa results indicated that most of the research students are satisfied with their research activities. All of the students had access to sophisticated issues and have sufficient research material and commodities available.

**Proforma5: FACULTY SURVEY RESULTS**

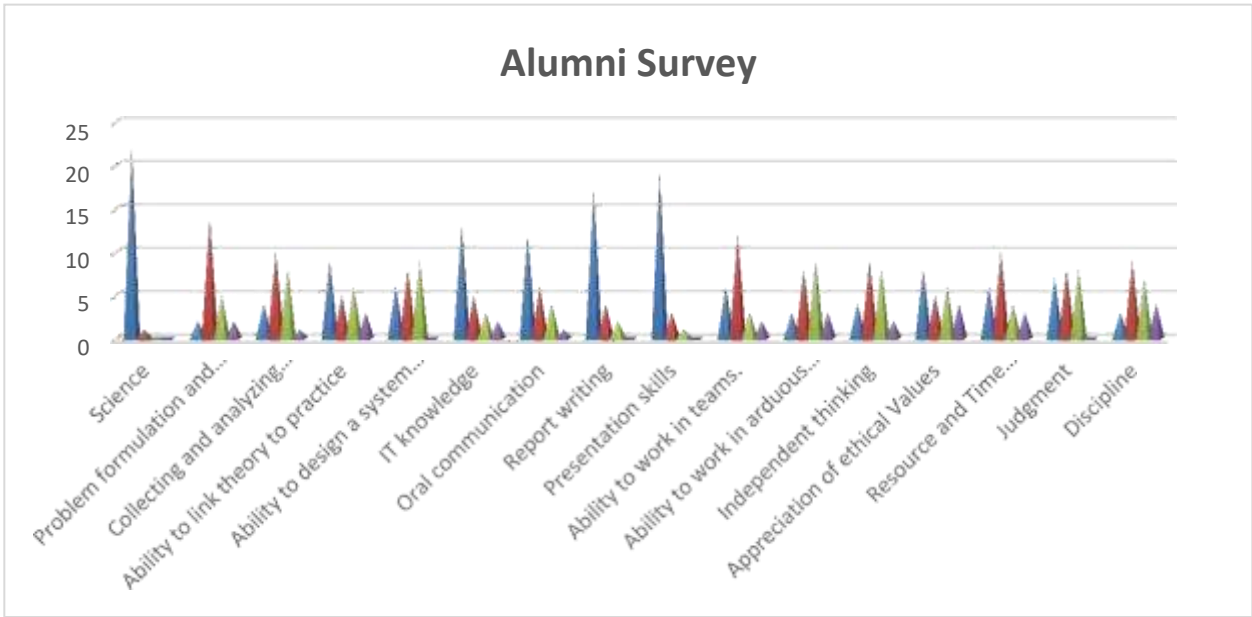
The results of faculty survey showed that most of the faculty members were pleased with their level of academic and research work. All the faculty members have a decent and respectable communication among themselves and with the students. However, some of the faculty members have reservation for the mentoring available to the mand also to the time they have for the mselves and their family.

S. No.	Parameter	Dr.Rahmat	Dr. Noshin	Dr.Naveed	Dr.Yamin	Dr Ziaur rehman	Dr. Khafsa Malik	Dr. Saira
1.	Your mix of research , teaching And community service	C	A	A	A	A	A	B
2.	The intellectual stimulation of your work	B	A	B	B	B	A	A
3.	Type of teaching/ research you currently do.	A	A	C	B	A	B	B

10.	Salary and compensation Package s	B	A	B	A	A	B	C	B
11.	Job security and stability at the department	B	B	A	C	A	C	A	B
12.	Amount of time you have for yourself and family	A	B	B	A	C	B	B	A
13.	The overall climate at the Department	B	A	B	B	A	B	A	C
14.	Whether the department is utilizing your experience and knowledge	A	B	A	B	A	B	B	B

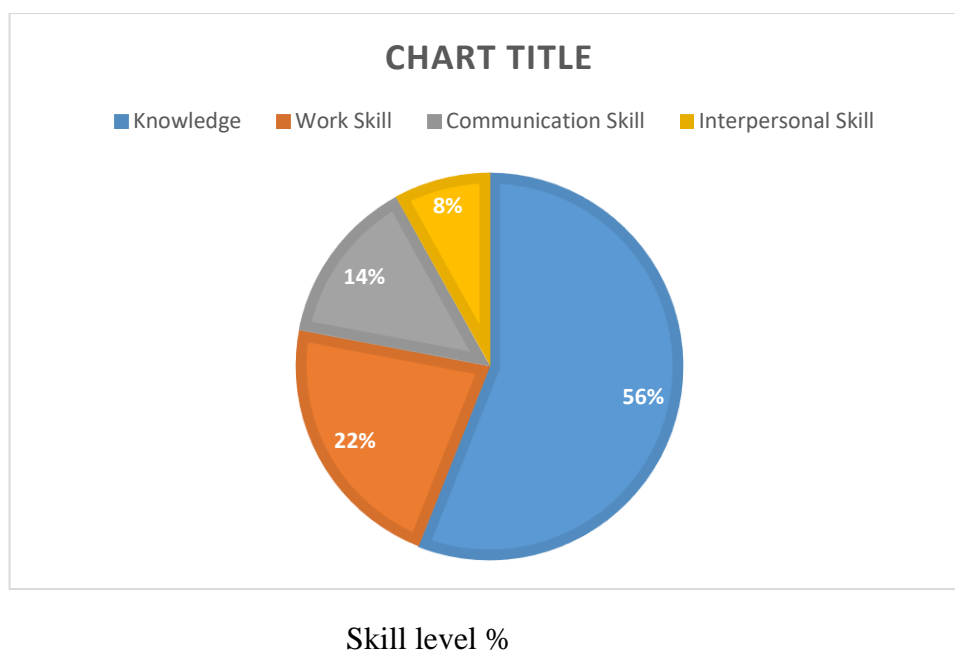
**Performa 7: ALUMNI SURVEY RESULTS:**

The purpose of this survey was to obtain alumni input on the quality of education and research they received and the level of preparation they had at University. A total of 40 alumni were surveyed. Most of the Alumni reported excellent concerning department trained the excellently about the interpersonal skills such as team work, training of oral communication, IT report writing and management skills, department has excellent infrastructure and repute, working in difficult conditions and independent philosophy, learnt excellent administration of resource and time, learnt excellent power of judgment.



### Performa 08: EMPLOYER SURVEY

A survey was conducted to get the employer's point of view about the working of our former students in their organizations Proforma 8, Feedback about 10 employees was obtained from various academic and research organizations). Their views are showed in the graph. The major emphasis was toknow the employer's comments on the quality of education regarding: knowledge, communication skill, work skill. Survey reflects that our graduates fall above average in all areas and their skill levels revealed more than satisfactory showed in below graph.





## Program Outcomes

### Standard1-4:

- ☐ Number of students enrolled are 37.
- ☐ Student faculty ratio1:20.
- ☐ Average grade point as per university policy.
- ☐ Employ were 80% satisfy.
- ☐ Student evaluation was good.
- ☐ Seed certification, plant identification, soil fertility.
- ☐ All are well satisfied.

### Present Performance Measure for community activity

**Table 3: Quantitative Assessment of the Department (Year 2023-2024)**

Sr. No.	Particular	No.	Remarks
1	M. Phil.	39	In progress
2	Students :Faculty rates	1:20	Fulfil HEC criteria
3	Technical: No technical ratio	2:4	Fulfil HEC criteria
4	Average grade point	As per University poilicy	Fulfil HEC criteria

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

**Table 4: Present performance Measures for Research Activities**

<b>Sr. No</b>	<b>Faculty</b>	<b>Journal Publication (National &amp; International)</b>	<b>Conference Publication (proceedings abstract)</b>	<b>Projects</b>
<b>1.</b>	Dr.Rahmatullah Qureshi	34	Proceeding 01	01
<b>2.</b>	Dr.Noshin Ilyas	19	4	01
<b>3.</b>	Dr.Naveed Iqbal Raja	32	5	01
<b>4.</b>	Dr.Yamin Bibi	13	05	01
<b>5.</b>	Dr. Zia-ur-Rehman Mashwani	39	3	01
<b>6.</b>	Dr Saira Asif	8	Nil	Nil
<b>7.</b>	Dr.Khafsa Malik	20	5	Nil

The department is well staffed; distinguishing feature is the availability fall expertise (Genomics, Ecology, Taxonomy, Physiology, and Mycology).

#### **Faculty Satisfaction Regarding the Administrative Services**

- Here are some reservations of faculty about some administrative offices of the university about disposal of documents which usually delayed.

**Table5: Degree requirements**

<b>Degree</b>	<b>Pre-requisites</b>
M. Phil.	M.Sc. Examination in aggregate with CGPA of not less than 2.50 or with 50 %of the marks from are cognized institution, entry test

## **SECTION2**

### **Criterion2: Curriculum Design and Organization**

#### **A. Title of Degree Program: M.Phil. in Botany**

**Intent:** All the courses for degree program were developed by board of studies, faculty and then academic council. Guidelines given by HEC curriculum committee are also considered.

#### **B. Definition of Credit Hour**

A student must complete a definite number of credit hours. One credit hour is one theory lecture or two hours' laboratory (practical work/weeks). One credit hour carries 20 marks.

#### **C. Degree Plan**

Presently three degree programs including M. Phil are organized by the department.

##### **□ M.Phil.**

The M.phil. degree program consists of 02 academic years/04semesters. One full year is given to research work and final thesis write up. Degrees are awarded after completing the required number of credit hours (courses) following by Comprehensive Examination.

**Table6: Core Courses**

<b>Course. No</b>	<b>Course Title</b>	<b>Credit Hours</b>
BOT-715	Phytogeography	3(2-2)
BOT-718	Arid Zone Ecology	3(2-2)
BOT-720	Seminar-I	1(1-0)

BOT-721	Stress Physiology	3(2-2)
BOT-727	Environmental Biotechnology	3(3-0)
BOT-736	Plant Systematics	3(2-2)
FR-705	Forestry and Environment	3(3-0)
BIOL-301	General Biology-I	3(2-2)
BIOL-701	Cellular Biology	3(2-2)
BIOT-708	Bioinformatics	3(1-4)
BIOL-704	Environmental Biology	3(2-2)
BIOL-713	Plant Reproductive Biology	3(3-0)
BIOL-735	Physiology and Genetics of biological nitrogen fixation	3(2-2)
BOT-735	Plant Microbe Interaction	3(2-2)
BOT-719	Special Problem	1(1-0)
BOT-799	Thesis	6(0-12)
BOT-720	Seminar-II	1(1-0)
BOT-737	Applied Ethnobotany	3(2-2)
BOT-726	Environmental Toxicology and Bioremediation	3(2-2)
STAT-702	Biostatistical Analysis	3(2-0)
BOT-723	Advances in Plant Physiology	3(2-2)

**Curriculum course requirement for M.Sc. / M.Phil. / Ph. D degree is summarized in the following table, whereas, their detailed description is also provided at end of report.**

#### **Standard 2.1: Assessment of the Curriculum of Botany Department**

The assessment of curriculum is done in the following table and the courses are cross tabulated according to the program outcomes.

#### **Meeting Standard 2.1: Courses versus Program**

**Outcomes Table 7: Course vs. Program**

	OUTCOMES					
COURSE	1	2	3	4	5	6
BOT-715	**	*	***	**	***	**
BOT-720	**	***	**	**	*	**

BOT-718	*	**	***	**	**	**
BOT-799	***	**	**	***	***	**
BOT705	**	**	***	**	**	*
BOT721	**	**	***	*	***	**
BOT727	**	**	*	**	**	***
BOT735	**	***	**	**	***	**
BOT-719	**	**	***	**	**	**
BOT-737	***	***	**	**	***	**
BOT-726	***	**	**	***	***	**
BOT736	***	**	***	**	*	***
BOT723	***	***	**	***	**	*

\* =Relevant

\*\* =Relevant and satisfactory

\*\*\*=Very relevant and satisfactory

- ☐ The curriculum fits well and satisfies the core requirements for the program, as specified the respective accreditation body.
- ☐ The curriculum satisfied the general art sand professional and other discipline required for the program according to demands and requirements set by the Higher Education Commission (HEC).

### **Standard 2-2: Elements Vs Courses**

#### **Meeting standard 2-2: Percentage of Elements in Courses**

<b>Elements</b>	<b>Courses</b>
Theoretical backgrounds	BIOL-301, BIOL-701, STAT-702, BOIL-704, BIOT-708, BIOL 713, BOT-715, BOT-717, BOT-718, BOT-721, BOT-723, BOT-726,

	BOT- 727, BIOL-735,BOT-735, BOT-736, BOT-737, FR-705
Problem analysis	BOT-715, BOT-718, BOT-721, BOT-736, BIOL-301, BIOL-701, BIOT-708, BIOL- 704,BIOL-735, BOT-735, BOT-737, BOT-726, BOT-723
Solution designs	BOT-719, BOT-720, BOT-799

**Standard 2-3** The curriculum for the core courses is designed as per requirements as approved by HEC.

**Standard 2-4**

The curriculum meets major requirements as approved by HEC.

**Standard 2-5**

There standard has been answered in table 4.4as directed in manual.

**Standard 2-6**

Internet, software, online for research activity (Journal record etc.) Bio-information software GIS, statistical analysis.

**Standard 2-7**

**Enhancing Oral and written Communication Skills of the students**

- ☐ Skill is developed through seminars, assignment and presentation by the faculty in their respective courses.

### **SECTION3**

#### **Criterion3: LABORATORIES AND COMPUTING FACILITIES**

There are four Laboratories in the department. The facilities and short comings of these laboratories are listed as under.

##### **LAB-1**

<b>Laboratory title</b>	<i>Plant Ecology Lab.</i>  (for the graduate and postgraduate students)
<b>Location and Area</b>	Faculty of Sciences, Department of Botany, 1 <sup>st</sup> floor, New Academic Block.
<b>Objectives</b>	Laboratory is used for  ➤ Research work for the graduate and post graduate students.  ➤ Practical exercise and demonstration to master students in their introductory and major courses.  ➤ Laboratory is spacious and adequate for research and teaching.  ➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies.

##### **LAB-2**

<b>Laboratory title</b>	<i>Plant Physiology Lab</i>  (for the graduate and post graduate students)
<b>Location and Area</b>	Faculty of Sciences, Department of Botany, 1 <sup>st</sup> floor, New Academic Block.  .

<b>Objectives</b>	<p>Laboratory is used for</p> <ul style="list-style-type: none"> <li>➤ Laboratory is spacious and adequate for teaching as well as research purpose.</li> <li>➤ Research work for the graduate and postgraduate research fellows.</li> <li>➤ Practical exercise and demonstration to master students in their introductory and major courses.</li> <li>➤ Used for implementing the funded projects by the university, HEC, PSF,</li> </ul> <p>PAR Can do other agencies.</p>
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### **LAB-3**

<b>Laboratory title</b>	<p><b><i>Molecular Mycology Lab.</i></b></p> <p>(For the master and postgraduate research scholars.)</p>
<b>Location and Area</b>	<p>Faculty of Sciences, Department of Botany, 1<sup>st</sup> floor, New Academic Block.</p> <p>.</p>
<b>Objectives</b>	<p>Laboratory is used for</p> <ul style="list-style-type: none"> <li>➤ Research work for the graduate and post graduate research scholars</li> <li>➤ Practical exercise and demonstration to master students in their introductory and major courses.</li> <li>➤ Laboratory is spacious and adequate.</li> <li>➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies.</li> </ul>
<b>Major apparatus viz equipment's</b>	<p>Test tube mixer, autoclave, deep freezer, refrigerators, elective balance, HPLC, Phase contrast microscope, Research microscopes, Electrophoresis, Laminar Flow, etc.</p>



#### **LAB-4**

<b>Laboratory title</b>	<b><i>Plant Taxonomy &amp; Ethnobotany Lab.</i></b> (For the master and postgraduate research scholars.)
<b>Location and Area</b>	Faculty of Sciences, Department of Botany, 1 <sup>st</sup> floor, New Academic Block. .
<b>Objectives</b>	Laboratory is used for <ul style="list-style-type: none"><li>➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies.</li><li>➤ Practical exercise and demonstration to master students in their introductory and major courses.</li><li>➤ Laboratory is spacious and adequate for undertaking research and teaching in the relevant field.</li><li>➤ Research work for the graduate and postgraduate research scholars.</li></ul>
<b>Major apparatus viz equipments</b>	Dissecting microscope ,stereo ,microscopes,deep freezer,electric balance ,sieve shaker, refrigerator, Ph and EC meter, plant pressers, hot plate,etc.

#### **Standard3-1: Laboratory Manuals:**

- ☐ The equipment's are fairly sufficient however; instruments regarding molecular approaches are lacking  
e. g. refrigerated centrifuge, PCR Spectrophotometer.
- ☐ Individual teachers have prepared some manuals but in general there is lacking of laboratory manual of each subject on account of absence of department Library.

### **Standard3-2: Support/ Laboratory Personal for Maintenance of Laboratory**

Laboratories are maintained by only one laboratory assistant (glassware, equipment, chemicals, material etc). Three laboratories attendants assist students in practical, cleaning and washing.

### **Standard 3-3: Computing Infrastructure and Facilities**

Computer facilities are insufficient and not available to all faculty members and the postgraduate students.

However, the department as the following short comings/ problems:

- IT issues, virus problems, telephone sets/ connections?
- Majority of the faculty members do not have access to the PC as department have only one Computer provided by the university.
- Not availability of internet facility

## SECTION4:

### **Criterion4: Student Support and Advising**

#### **Departmental Orientation**

All newly admitted students are given orientations session at departmental level. It covers s orientation about semester system, introduction of faculty and staff and use departmental facilities and services.

#### **Student Advisor**

One of the faculty members is deputed as student advisor. The services provided by the student advisor are:

- ☐ Organization of function at departmental level
- ☐ Solving student's problems (personal and academic)
- ☐ Providing general assistance

#### **Standard4-1: Frequency of courses**

- ☐ Courses are taught as per approved scheme of study.
- ☐ Required courses outside department are under

Optional Courses			
1	BOT-718	Arid zone ecology	3(2-2)
2	BOT-721	Stress physiology	3(2-2)
3	BOT-736	Plant systematic	3(2-2)
4	BIOL-701	Cellular Biology	3(2-2)
5	BIOL-728	Concepts of Genetics	3(2-2)
6	ZOO-751	Project Planning ,Monitoring and Evaluation	3(3-0)
8	BCH-751	Advances in Biotechnology	3(3-0)
9.	BIOL-736	Element of Statistics and Biometry	3(3-0)
11.	BIOL-736	Mitochondria and Plastid	3(3-0)
12.	BIOL-713	Plant Reproductive Biology	3(3-0)
13.	BCH-701	Biochemistry	3(3-0)

#### **Standard4-2: Structure of the Courses**

The majority of the courses are divided into two major aspects: Theoretical and Practical.

**Theoretical portion** covered in teaching, assignments and presentations.

**Practical aspects** are covered by performing experiments in Labs and fields. In order to update students about the latest developments in study area visits to various research organization areas is also organized.

#### **Standard4.3: Guidance to the Students**

There is a strong and regular communication between student advisors and students to discuss about program requirements. Regular interaction between student and teacher supports advising and counseling system.

There is student councilor in department who solves the problems of students on weekly base.

## **SECTION5: PROCESS CONTROLL**

### **Standard 5.1: Admission Criteria for Program**

- ☐ The process of admission well established and followed as per rules and criteria set by university.  
For this purpose, an advertisement is given in the national papers by the Registrar office.
- ☐ Admission criteria:

O **M.Phil.** (M.Sc. Botany/ Biology with CGPA 2.5 out of 4 or 50% marks under annual examination system and entry test.

- ☐ Admission criteria are revised every year before the announcement of admissions.

### **Standard 5.2: Process of Registration and Monitoring of Students.**

- ☐ The complete list of finally admitted candidate after fulfilling the admission criteria is to be forwarded to the registrar office for proper registration in the specific program. Registration numbers are issued to the students
- ☐ Students are registered once in a degree program.
- ☐ Mid, Final, Practical exams and assignments are used to monitor student progress.

### **Standard 5.3: Recruiting Process for Faculty**

Recruitment policy for faculty followed by the University is as per HEC standard recommendation.

New inductions areas follow:

- ☐ Vacant and newly created positions are advertised in the leading daily newspapers. Applications are receiving d by the registrar office; call letters are issued to the short listed candidates on the basis of their experiences, qualification, publications and other qualities/activities as fixed as per university rules.
- ☐ The candidates are interviewed by the university selection Board. Principal and alternate candidates are selected
- ☐ Selection of candidates is approved by the syndicatefor issuing orders to join within as pecified time period.

- ☐ Induction of new candidates depends up on the number of approved vacancies.
- ☐ Standards et by HEC are considered.

### **Retention of Excellent Faculty Members**

- ☐ At present, some procedure exists for retaining highly qualified faculty members.
- ☐ HEC also supports appointment of highly qualified members as foreign faculty professor, National Professors and deputes them in various departments of the university.

### **Standard5.4: Process and Procedure to Ensure Teaching and Delivery of Course Material**

Periodical revision of he curriculum helps high quality teaching. This revision is based upon requirements, innovations and new technology

With the emergence of new fields, new courses are set and included in the curriculum

Relevant and supporting material is available in university library Lecture aids are prepared by the teachers and given to the students.

Most of the lectures are also supplemented by over heads, slide sand pictures

All efforts are made that the course sand knowledge imparted meet the objectives and outcomes.

The progress is regular lyre viewed in the staff meetings.

### **Completion of Program Requirements**

- Announcement of the date of commencements examination by the controller of examinations announces.
- Notification of results after 30 days of the examinations finish, the controller office notifies the results of the students.
- The evaluation procedure consists of quizzes, mid and final examinations, practical formulas, assignments and reports, oral and technical presentation.

## SECTION 6

### Criterion 6: FACULTY

#### Standard 6-1: Full Time Faculty

##### Effective Programs for Faculty Development

Proficient implementation and accessibility of pleasing research and academic facilities are provided conferring to the faculty members.

provided conferring to the faculty members.

Incentives in the practice of allowances to thesis supervisors have been implemented lately to promote high standard research.

Faculty is encouraging in various development program of the university

##### Faculty member motivation

- ☐ There is a calamitous necessity of motivation

**Table9: Faculty Specialization**

S.No	Name	Position	Qualification	Specialization
1	Dr.Rahmatullah Qureshi	Professor	PhD	Plant Taxonomy &Ethnobotany
2	Dr.Noshin Ilyas	Assist Professor	PhD	Plant Microbiologist
3	Dr.Naveed Iqbal Raja	Assist Professor	PhD	Tissue culture
4	Dr.Yamin Bibi	AssistProfessor	PhD	Phytochemistry
5	Dr,Zia Ur Rehman Mashwani	Assistant Professor	PhD	Ethno pharmacology
6	Dr.Khafsa Malikk	Assistant Professor	PhD	Plant Biosystematic s And Biodiversity
7	Dr. Saira Asif	Assistant professor	PhD	Tissue culture

### **Standard6.2: Effective Programs for Faculty Development**

Proficient implementation and accessibility of pleasing research and academic facilities are provided conf erring to the faculty members.

Incentives in the practice of allowances to thesis supervisor shave been implemented lately to promote high standard research.

### **Standard6.3: Faculty member motivation**

- ☐ There is a calamitous necessity of motivation



## **SECTION7**

### **Criterion7: Institutional Facilities**

#### **Standard7-1infrastructure**

The institutional facilities are in sufficient though the department has provided new space. These short falls are under:

- ☐ The department has lack of departmental library.
- ☐ Lab of the dept. lack the gas supply
- ☐ There is only one lecture hall for all class son departmental disposal and the remaining shared with other department.
- ☐ New Labs are also required.
- ☐ Up turn the department budget for research and experimentation.
- ☐ The Department lacks the computer and internet laboratory.

#### **Standard 7-2 Library facilities**

The university central library has very limited number of books, journals and periodical, it's a small library in term of space and facilities no catalogue systems; it does not meet the standards of a university library. Department itself does not havea library.

#### **Standard7.3Class Room and Faculty Offices**

- ☐ Faculty offices are in adequate.
- ☐ Shortage of lecture halls

## SECTION 8

### **Standard 8-1: Institutional Support**

- ☐ There is one classroom available therefore; classes are taken in the labs
- ☐ There should be more encouragement for the faculty members to carry out quality research.
  - ☐ There is in adequate supporting technical and official staff and some equipment.
  - ☐ Sabbatical leaves for researches in the country and abroad.
- ☐ Research grants to the young faculty members.

### Standard 8-2 High Quality Graduate Students and Research scholars

Graduate students are enrolled once in a year. A strict merit policy adopted and GRE/NTS examination is implemented. Lately, details of the students and research scholars are given following tables.

**Table 12: Showing the Number of students obtaining degree in different programs from 2021-2022.**

STUDENTS	Number of students (NOS)	
	2021	2022
M.Phil	40	42
Research Associate		

<b>Students :Faculty ratio</b>	1:20	Fulfills HEC criteria
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### **Standard 8-3 Financial Resources:**

Total budget of the department for the financial year 2023-24 is Rs. 55000/- (Fifty thousand rupees only) which hardly fulfills the departmental needs particularly for the purchase of necessary chemicals, etc.

## SUMMARY AND CONCLUSION

Pir Mehr Ali Shah Arid Agriculture Rawalpindi from spring semester 2023 to fall 2024, this Self- Assessment Report (SAR) comprises plans and activities carried out for M. phil Program of botany. The data revealed the students are satisfied the subject approach of faculty members, their fairness in examination, and level of knowledge. Pre-requisites are fully observed and examination are conducted as pre schedules. The main objective of self-assessment report was to over view the academic and research activities are perceived by students, M. phil department of botany.

The data revealed that students are satisfied with the subject approach of faculty members, their fairness in examination, and level of knowledge. Teachers remain busy in designing advance course for M. phil program. The number of course along with their title and respective credit hours course content for degree program fully planned. Students are in process of training towards higher profile research in accordance with the new challenges and requirements. The strong academic enables them to specialize in one hour more areas reflecting the students particular interest. As regards the process control convering admission registration, recruiting policies, delivery of material, academic requirements, performance and grading, sample effectiveness is evident. Teachers remain busy in designing advance courses for M. phil program. The rules formulated by university and HEC are properly followed regarding admission registration, grading and performance. The efficiency was measured through set standard and was found to be satisfactory. The no. of courses along with their title and respective credit hours course content for degree program fully planned.in addition they have sufficient specialist knowledge reflected areas to allow them to pursue a research degree. Different projects as well as research activities have been carried out in department. Research being persued by M. phil students is also strengthening research activities in departments.

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**Date of submission to HEC**