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Arid Agriculture University, Rawalpindi



Self-Assessment Report (2010-12)

Department of Botany
(PhD Botany)

Programme Self-Assessment Team

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Introduction

Department of Botany, PMAS Arid Agriculture Rawalpindi, is one of the leading department regarding academic and research activities. Ph.D is the highest degree programme initiated in 2001. At present number of Ph.D scholars is 25. Scholars are actively involved in research activities. The number of passed out doctoral students is 10 so far. The Department is incessantly following HEC's recommendations for impost and updation of its activities.

As per rule of HEC PhD scholars have to complete course work followed by synopsis defense and approval before starting research work in labs. PhD scholars are working on diverse and multidisciplinary aspects of plant sciences including plant genome, taxonomy, ethnobotany, phytochemistry, stress physiology and genetic transformation. PhD students have also availed indigenous scholarship programme of HEC for smooth running of research work. PhD scholars are motivated and encouraged by faculty members to participate in conferences workshops and other scientific gatherings in order to share their achievements as well as to learn new techniques and insights from local and foreign experts. Furthermore PhD scholars have availed IRSIP programme of HEC and visited different countries including USA UK Germany etc. This programme has made it possible to introduce latest techniques and approaches in their research. PhDs also publish one research paper as per requirement of degree.

The department also has dedicated and hardworking faculty comprising of 10 teachers. Out of them 7 are Ph.D, 2 are almost near to completion of their Ph.D and one is M.Phil. All faculty members are highly motivated and actively involved in research activities and academic progress. An extensive scheme of studies has been developed for this degree program in the field of Botany including all major aspects such as ecology, genetics, physiology, taxonomy, anatomy, molecular biology of plants and biochemistry. Opportunities also exist for students to do independent research or assist in faculty research projects on campus. Faculty in the Department of Botany is involved in collaborative research projects from HEC. Students have opportunities to participate in independent research projects in state-of-the-art faculty research laboratories, or research field sites.

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 progressing towards wide range of careers by producing quality researchers in the form of Ph.Ds. Backbreaking exploration activities are in progress under plentiful research project funded by projecting donor establishments including University itself.

Standards 1-1: Documented measurable objectives

Mission Statement of the Department

Our mission is to acquire the PhD scholars a sound background and skills necessary for careers as university teachers and researchers.

We typically engage PhD scholars in dissertation research and seminars participation.

Objectives

1. To develop critical thinking skills in PhD scholars leading as mile stone in career development.
2. To produce highly capable researchers with quality research and education.
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
5. The presentation of the research results to the larger community of scholars nationally and internationally.
6. To bequeath the department with integration of knowledge in linked fields.

7. To transport inventive thinking in students to grow cost effective research accomplishments.
8. To develop good interpersonal, communication and learning skills

Main Element of The Strategic Plan To Achieve Program Mission And Objective.

- Maintain a progressive research environment and motivation to solve our scientific problems
- Strive for distinction in the organization of Botany.
- To develop and maintain research programs those comprise the roots for teaching and provision, and sustain those activities at the forefront of emerging disciplines.
- Establishment of academia by expending the teaching structure based upon capability, hard work, in transformation with modern line of studies.
- Upgradation of research laboratories.
- Regular and periodic process of updating scheme of studies
- Prominent and unique finding are to be published in ISI recognized journal regularly.
- To progress research environment by RESEARCH projects funded by the dissimilar distinguished agencies.

Outcomes:

1. Communication skills through presentations, oral discussions, scientific and review articles, etc.
2. Preparation of scientific research proposals based on our indigenous problems and issues.
3. Enhancement of knowledge and vision in the field of Botany.
4. Graduates and faculty contribute and extant papers in international and national conferences.
5. Scientific writing skills and publication of research papers in scientific journals.
6. Plagiarism free papers are being published successfully.
7. Students are attaining careers in numerous national teaching institutes.

Sr. #	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	Essential and Functional Research	Specialized faculty members in specific field. Up gradation of labs	Incessant process	New research lines established	Establishment of herbarium and botanical garden. Vigorous research activities and publication
2.	To ameliorate research environment	Number of research publications and projects	It is generally measured annually	The no. of publications are increasing as the number of projects	At present several research projects are in progress.
3.	To instruct the mechanical evidence	Reflected by student efficacy	At the end of projects	Successful graduates are working in different organization	By doing quality research.
4.	Ability to write and present the research topic, and defend the results and conclusions in a public forum	Writing Thesis/Thesis defense	Writing Thesis & Thesis defense	The problems are identified at presentation	The problems are solved accordingly

Programs objectives	Program Outcomes		
	1	2	3
1	Perfection of Academic background of successful graduates	Improved show in different competitive exams	Absorption of the graduates in different Government and Non-Governmental Organization

2	Faculty with specialization in relevant fields.	Need oriented research projects are running	Better performance of qualified graduate in knowledge application
3	Collaboration with other departments	Evaluation of thesis by External foreign examiners	A variety of thesis has been done in various field of botany.
4	Ph.D depending upon number of applicants per year	Successful pursuit of graduate for research projects	Increased student interest in field and Laboratory work.
5	Students can use advance techniques.	Research work involving advance techniques and new finding are in progress.	Better performance of students in various institutes while applying advance analytical techniques.
6.	Inculcation of interest and spirit in academics and research in the field of Botany	No. of research publications, techniques introduced; research projects submitted & completed; evaluation by students during the whole academic year	New courses to be included in curriculum, research on new problems

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:

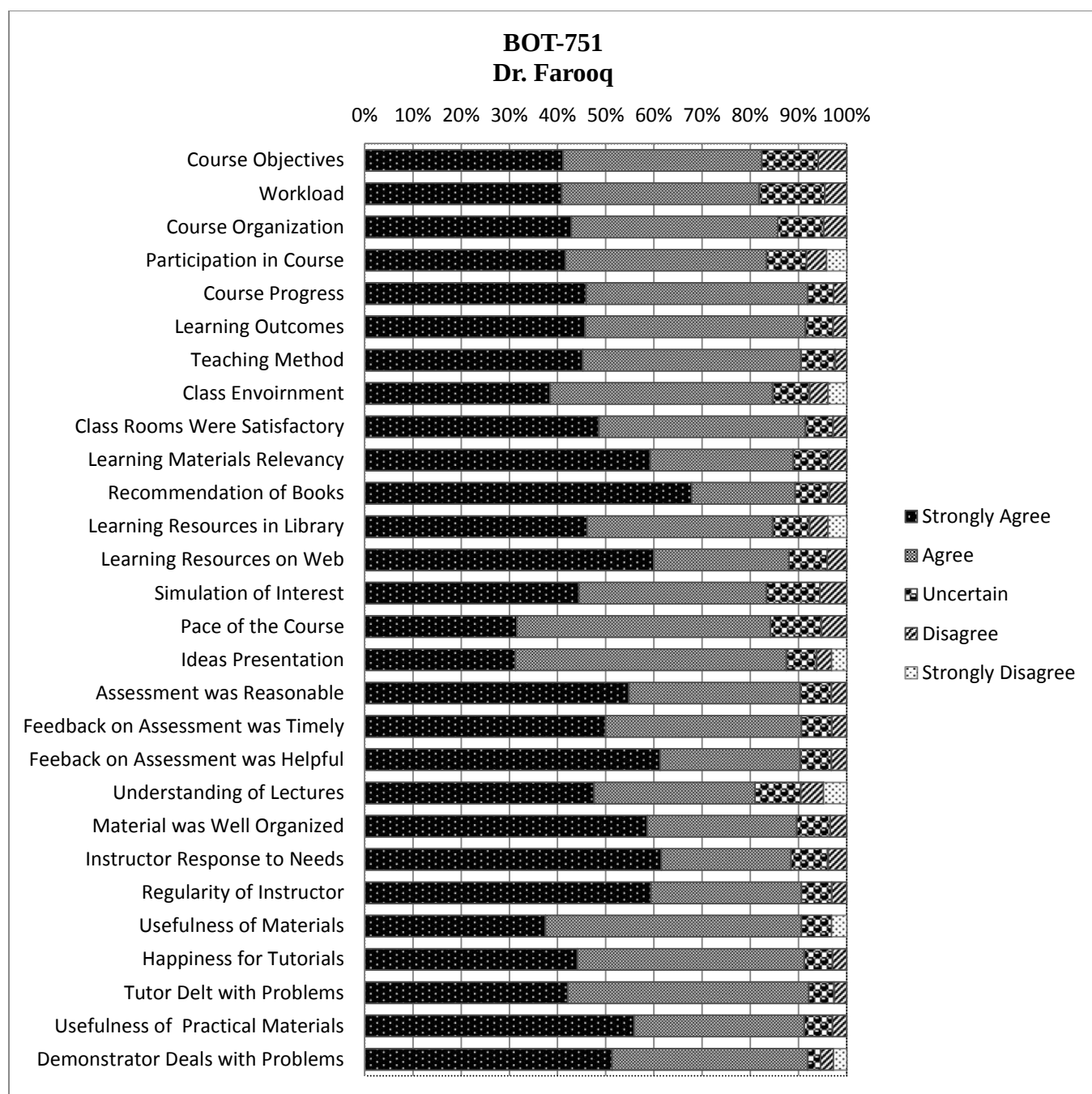
The outcomes of Program assessment by the SAR are presented in graphical method. However, the inclusive outcomes show that the students are contented with the Program and method of teaching.

Student Course Evaluation

Maximum of the students favor almost the course contents of each course, their prospect and applications in daily life beside with the presentation by the concerned tutor. The outcomes of this survey are presented graphically, which are affixed.

Ph. D

Students Course Evaluation

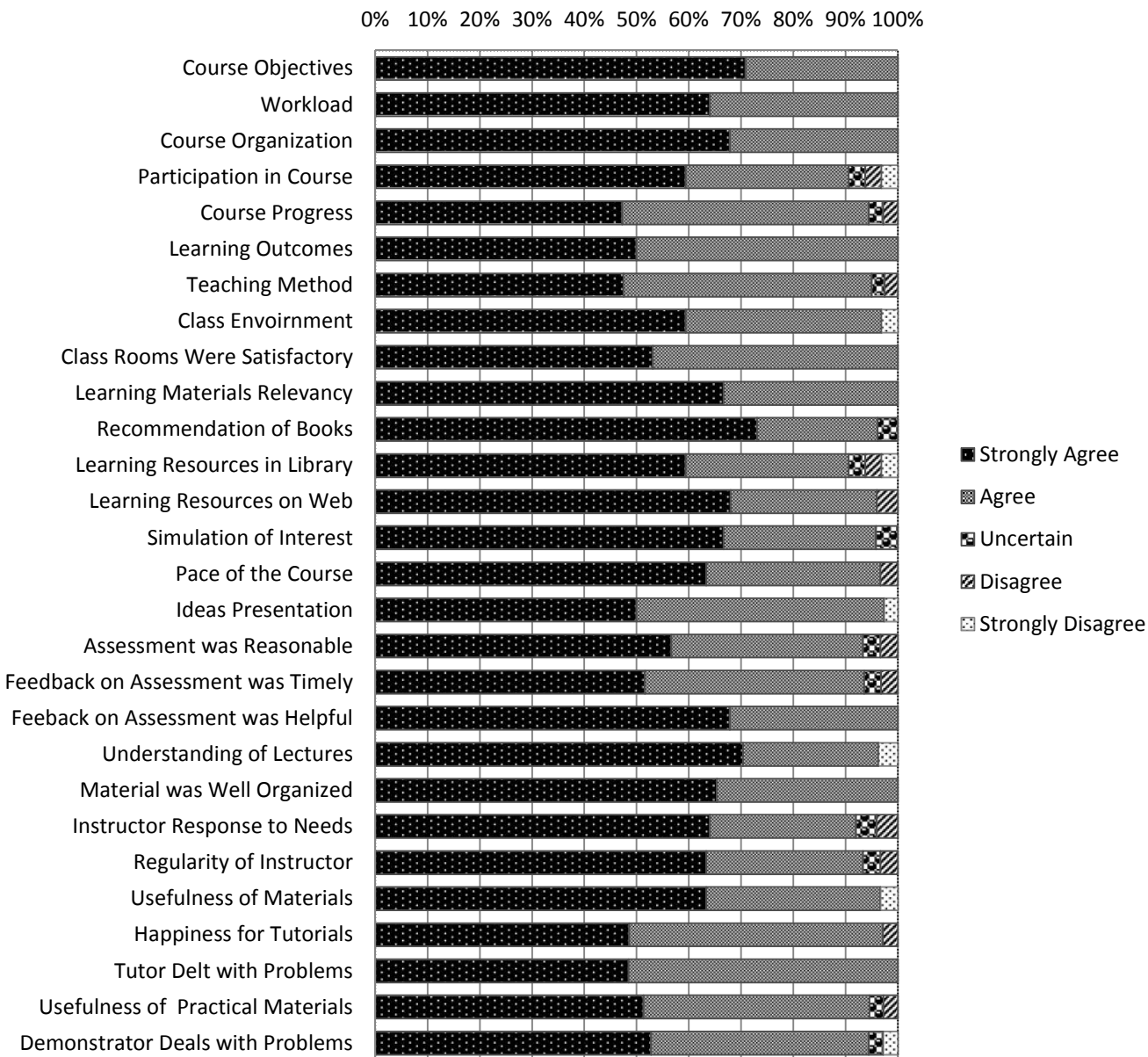


General Comments of the Students about this Course

Weaknesses: Pace of the course was not satisfactory

Strengths: Course points, students' participation and their personal concerns prepared this course.

BOT-751
Dr. Naveed Iqbal Raja

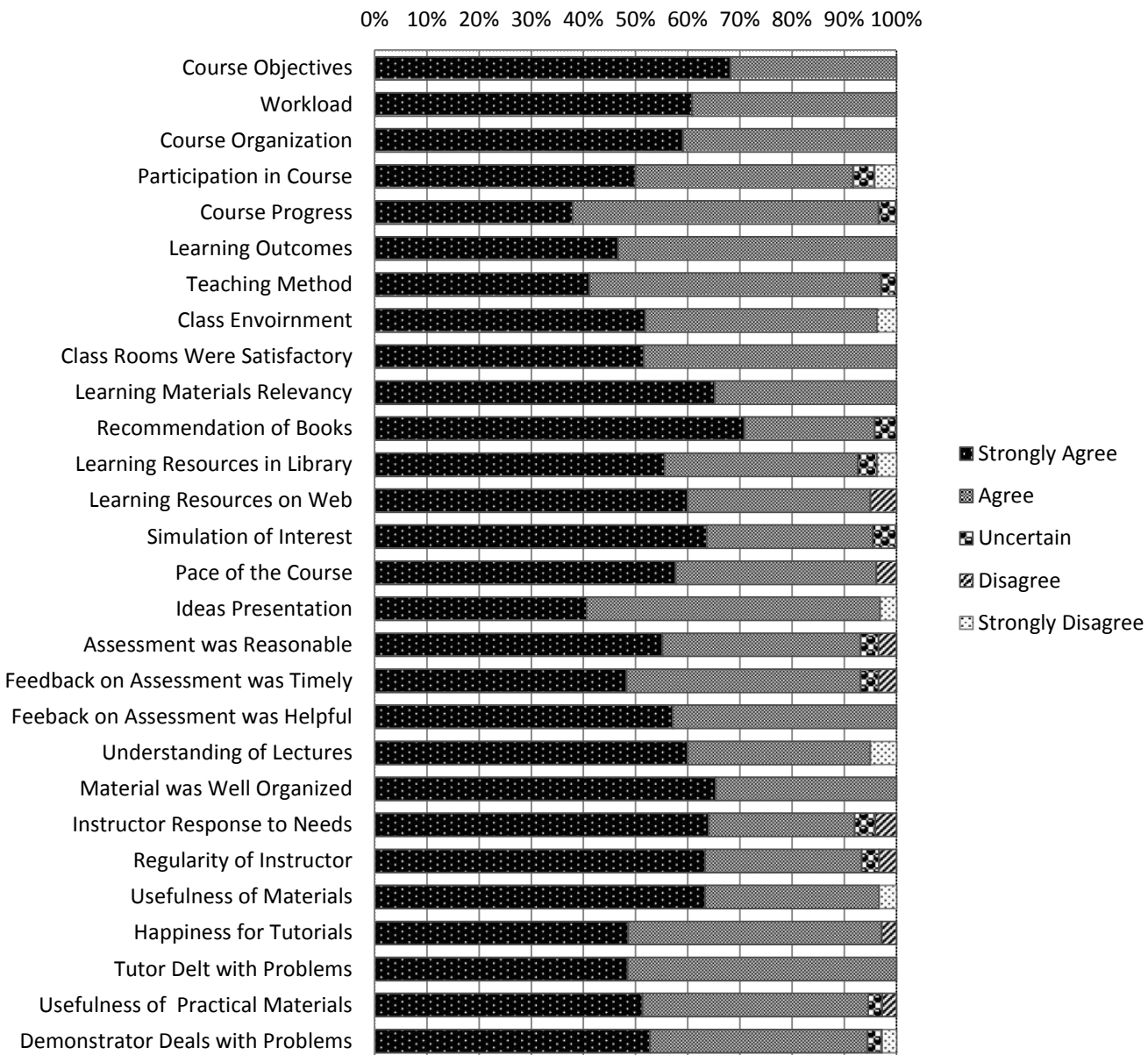


General Comments of the Students about this Course

Weaknesses: No greater weakness was indicated by the students about this course.

Strengths: The tutor showed reasonable attitude and communication skill, established contribution of students in class discussion, included recent materials in the course subjects.

BOT-728
Dr. Naveed Iqbal Raja



General Comments of the Students about this Course

Weaknesses: No weakness was indicated by the students about this course.

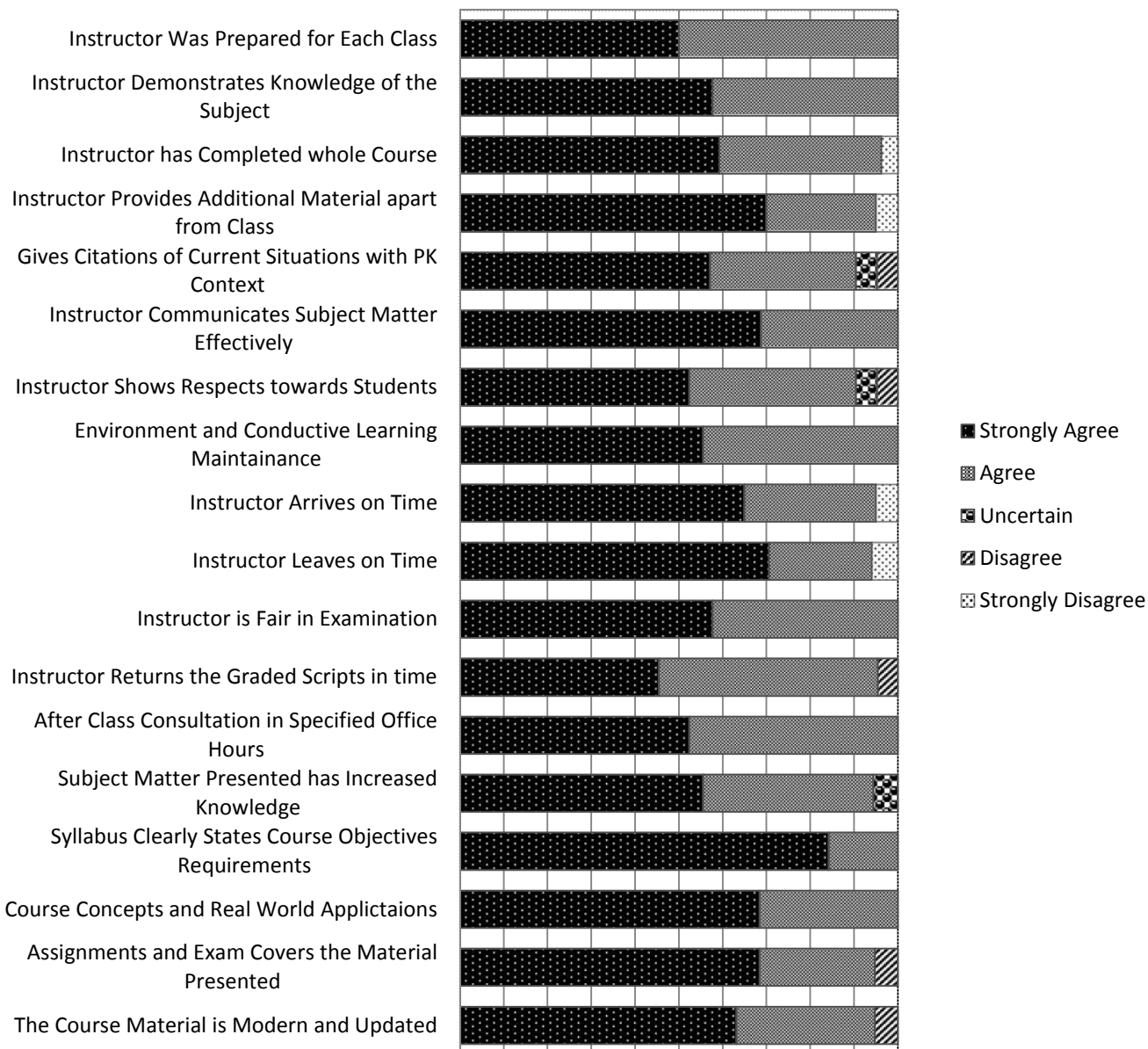
Strengths: Course objectives were clear and learning material was available in time

Ph. D

Teacher Evaluation Questionare

BOT-728
Dr. Naveed Iqbal Raja

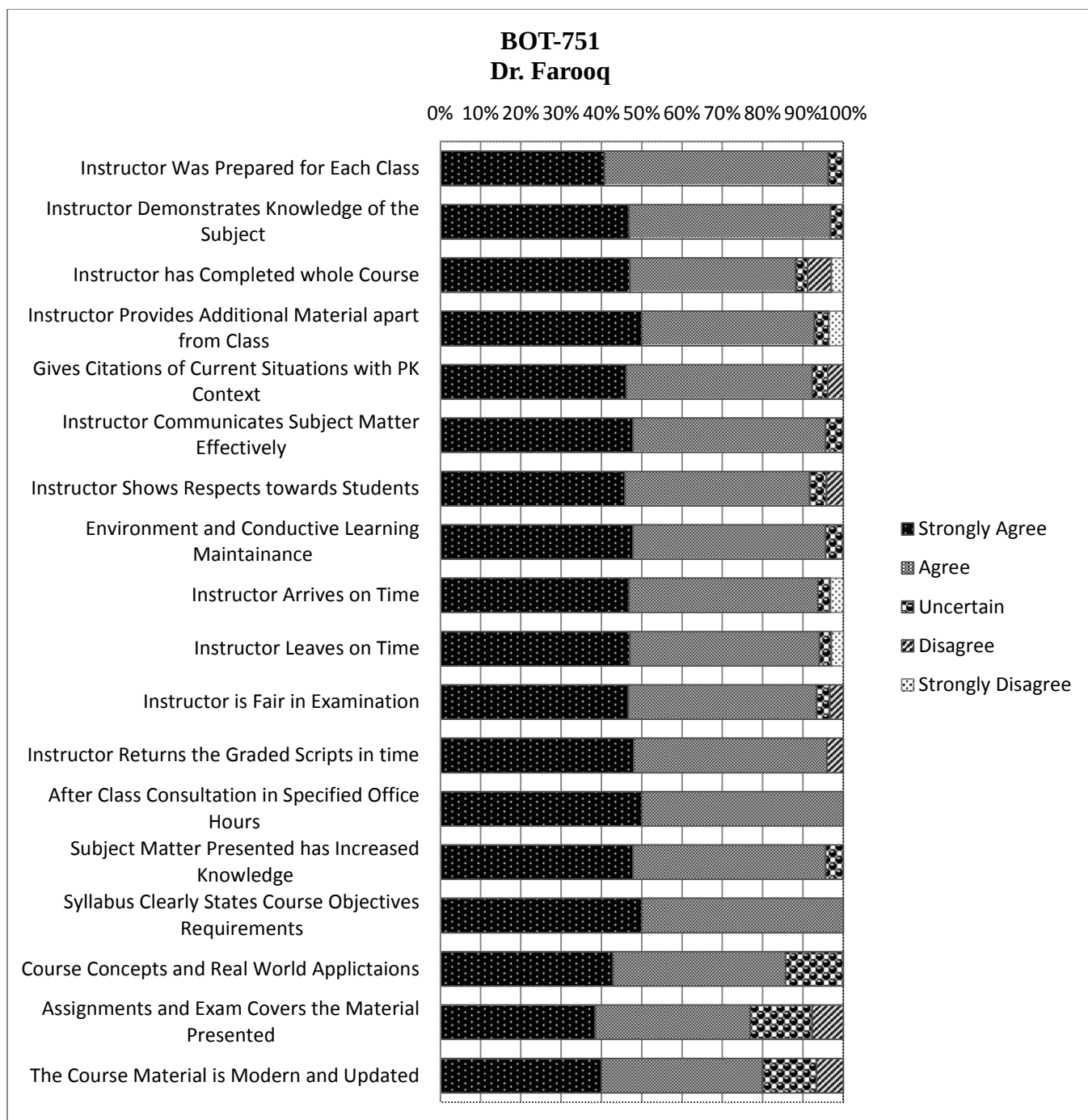
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



General Comments of the Students about this Teacher

Weaknesses: No weakness was indicated by students about this teacher

Strengths: Instructor offered the subject matter effectively and completed the whole course. Regularity was excellent.



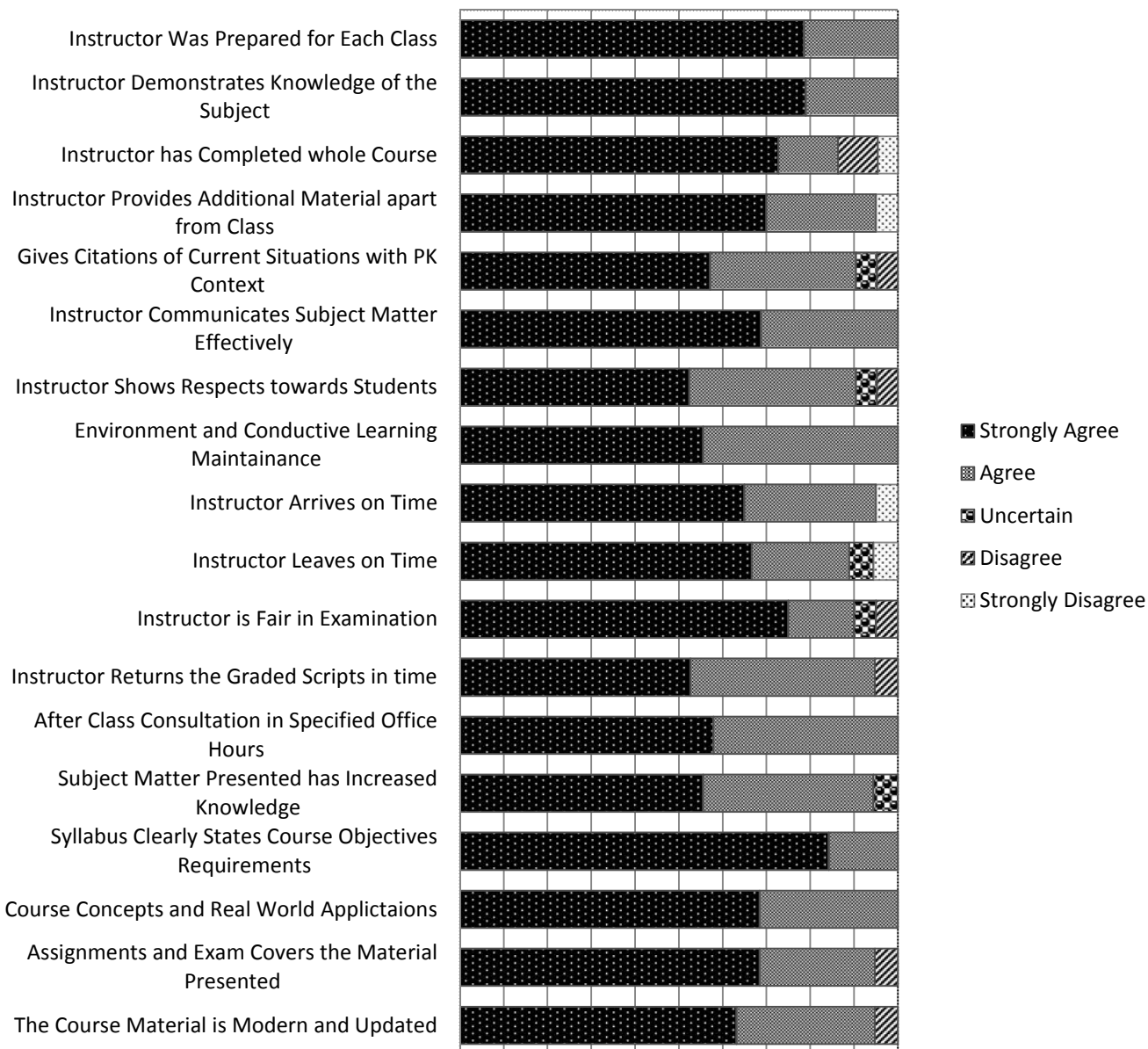
General Comments of the Students about this Teacher

Weaknesses: Instructor needed to improve in course concepts, assignments and exam materials

Strengths: Examination was fair and students have increased their knowledge. Most of the students are agreed with teacher

BOT-751
Dr. Naveed Iqbal Raja

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



General Comments of the Students about this Teacher

Weaknesses: Instructor should return the graded scripts in time

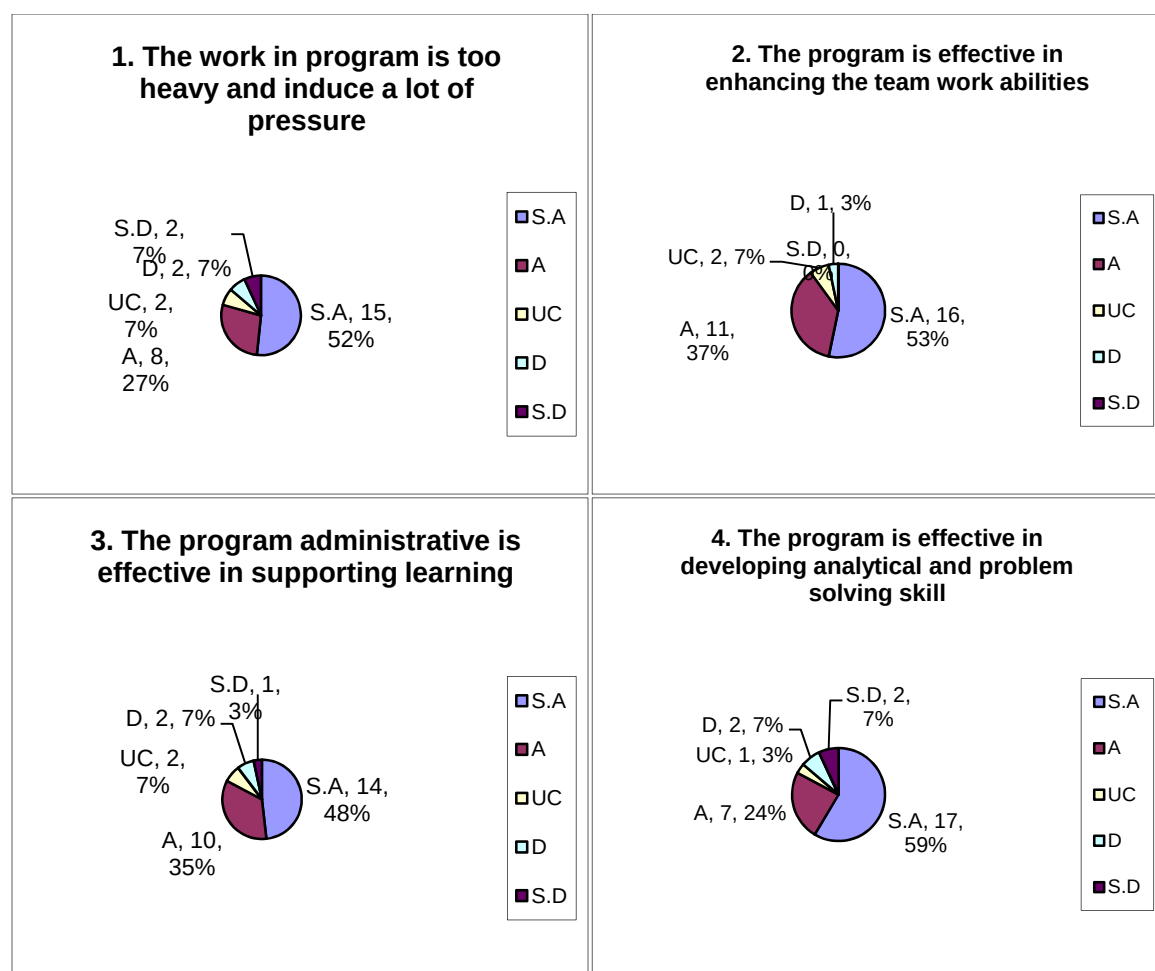
Strengths: Instructor completed the whole course. Regularity was excellent. Course material was modern and updated

Performa 2: FACULTY COURSE REVIEW REPORT

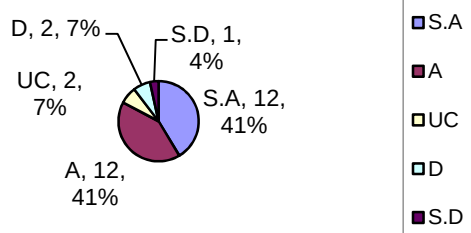
Department	Botany
Faculty	Sciences
Courses	Described earlier in SAR
Assessment method	As per University rules and regulations
Distribution of Grades/Marks	As per University rules and regulations
Overview/Evaluation (course Co-coordinator's comments)	Satisfied
Students (course evaluation survey)	Satisfied
External Examiner	Student have sound theoretical knowledge
Student/Staff Consultative committee	N/A
Curriculum	In accordance with HEC guidelines
Assessment	Course objectives well defined and well achieved
Enhancement	Proposed changes in earlier course review report incorporated
Future changes	New and modern practical approaches may be incorporated if possible

Proforma 3: GRADUATING STUDENTS SURVEY.

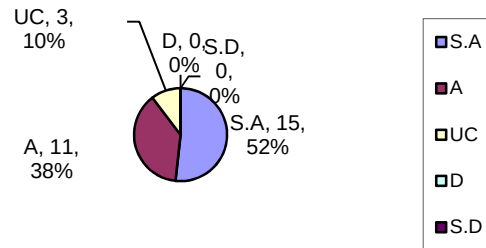
Results of survey of graduating students based on Proforma 3 show that 90% student agreed that the program is effective in enhancing the team working abilities. 83% students agreed that the program developed analytical and problem solving skills. 82% students showed their satisfaction over independent learning skills. 90% students agreed that the program developed writing skills in them. There was 83% agreement towards achievement of program objectives. There was 91% satisfaction towards curriculum. On average, there was 90% liking for faculty. However, there were reservation regarding co-curricular activities, scholarships and above all program workload.



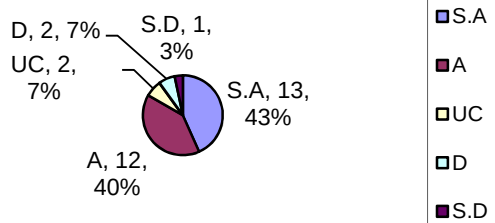
5. The program is effective in developing independent thinking



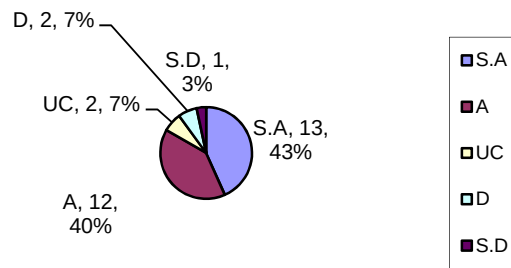
6. The program is effective in developing written communication skill



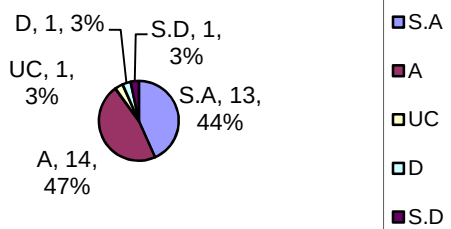
7. The program is effective in developing planning abilities.



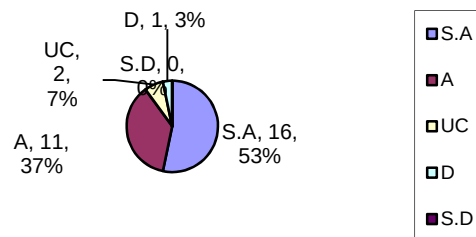
8. The objective of the program have been fully achieved



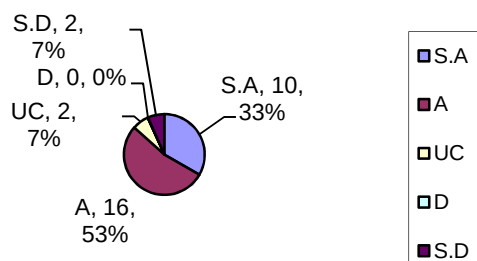
9. Whether the contents of curriculum are advanced and meet program objectives



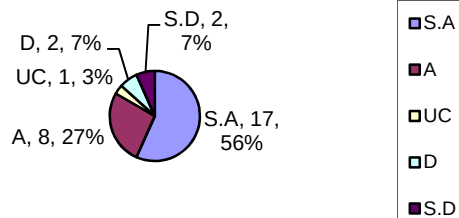
10. Faculty was able to meet the program objectives



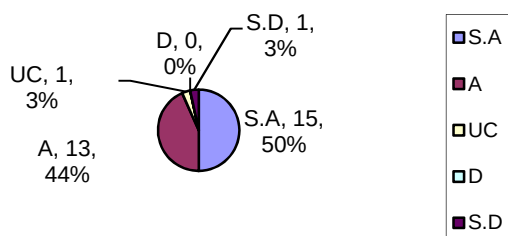
11. . Environment is conducive for learning



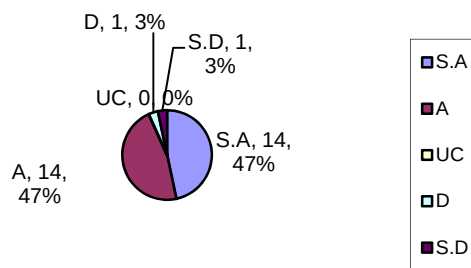
12. Whether the infrastructure of the department was good



13. Whether the program was comprised of Co-curricular and extra cullicular activities



14. Whether Scholarship/grants were available to students in case of hardship



Proforma 4: RESEARCH STUDENTS PROGRESS REVIEW

	Question	Comments by Students
1	Please outline details of your progress in your research since your last review	Ph.D students published single research paper
2	Do you have any comments on the level of supervision received?	Satisfied (100%)
3	What do you plan to achieve over the next six months?	Ph.Ds are busy in designing experiments
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?	Ph.Ds haveplanned to get by HEC-IRSIP for 06 months abroad
5	Do you have easy access to sophisticated scientific equipments?	Yes (100%)
6	Do you have sufficient research material/commodities available?	Yes (100%)

The results of this proforma showed 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. Research students have the motivation to increase their research activities by applying through HEC-IRSIP

Proforma 5: FACULTY SURVEY RESULTS (IN CASE OF PHD KINDLY DON'T MENTION NON PHD FACULTY)

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 them and also to the time they have for themselves and their family.

S. No	Parameter	Dr. M. Arshad	Dr. Abida	Dr. Rahmat	Dr. Noshin	Dr. Naveed	Dr. Yamin	Mr. Zia Ur Rehman	Ms. Mubashrah	Ms. Saira
1.	Your mix of research, teaching and community service	A	B	B	B	B	B	B	B	B
2.	The intellectual stimulation of your work	A	B	B	B	B	B	A	B	B
3.	Type of teaching/research you currently do.	B	B	A	A	A	A	A	A	B
4.	Your interaction with students	B	A	A	A	A	A	A	A	A
5.	Cooperation you received from colleagues	A	A	A	B	B	B	B	A	A
6.	The mentoring available to you	B	B	C	B	B	B	A	C	C
7.	Administrative support from the department	A	B	B	A	B	B	A	A	A
8.	Providing clarity about the faculty promotion process	B	B	A	A	B	B	B	A	A
9.	Your prospects for advancement and progress through ranks	A	B	B	A	B	B	B	B	B

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

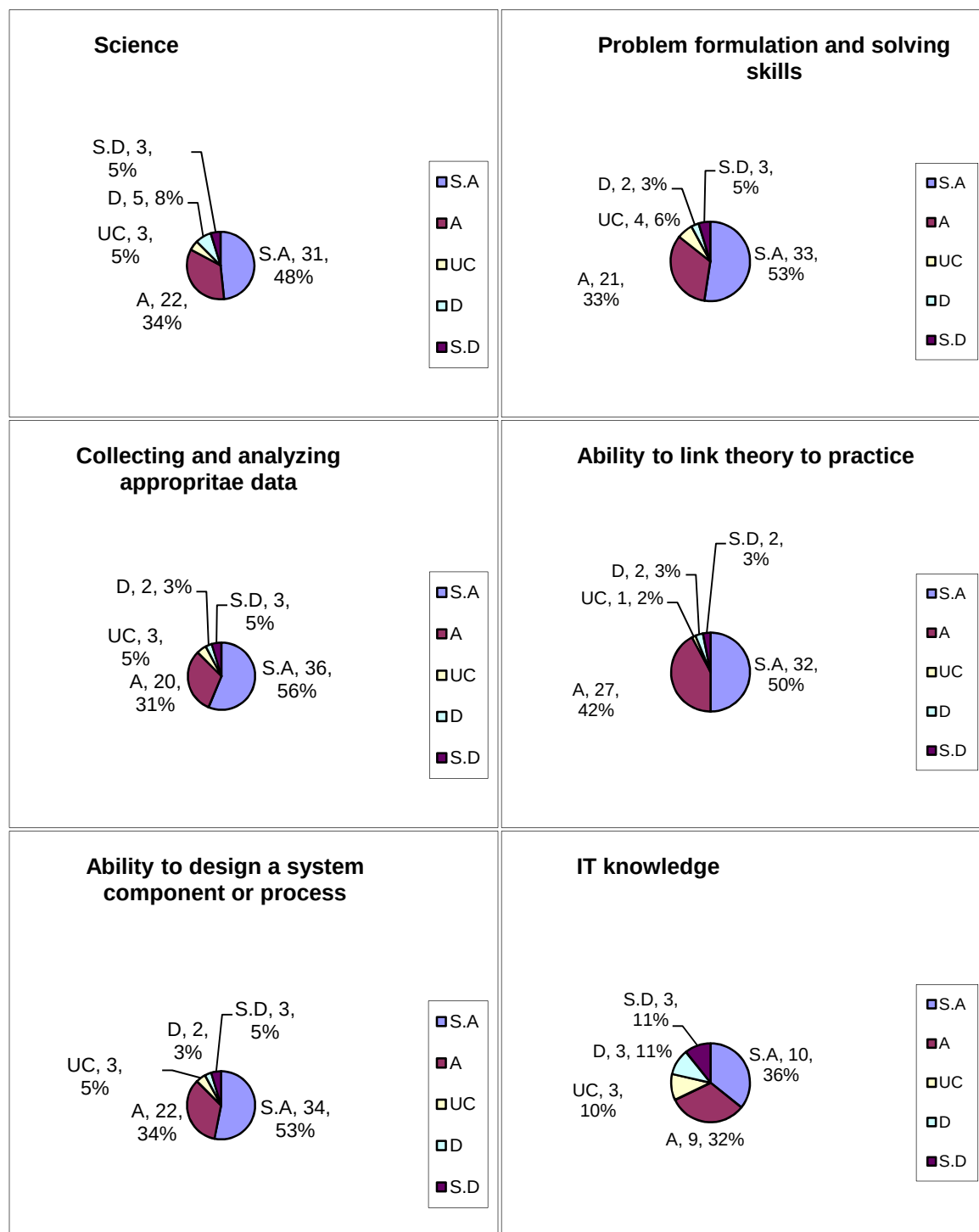
Proforma 06: SURVEY OF DEPARTMENT OFFERING PH.D. PROGRAMS

S.No	Requirements	Comments
1	General Information:	
1.1	Name of Dept.	Botany
1.2	Name of Faculty	Sciences
1.3	Date of initiation of Ph.D. program	2002
1.4	Total number of academic journals subscribed in area relevant to Ph.D. program.	07
1.5	Number of Computers available per Ph.D. student	01/student
1.6	Total Internet Bandwidth available to all the students in the Department.	As per university policy
2	Faculty Resources:	
2.1	Number of faculty members holding Ph.D. degree in the department.	07
2.2	Number of HEC approved Ph.D. Advisors in the department.	07
3	Research Output:	
3.1	Total number of articles published last year in International Academic Journals that are authored by faculty members and students in the department.	43
3.2	Total number of articles published last year in Asian Academic Journals that are authored by faculty members and students in the department.	21
3.3	Total number of ongoing research projects in the department funded by different organizations	06
3.4	Number of post-graduate students in the department holding scholarships / fellowships.	15
3.5	Total Research Funds available to the Department from all sources.	0.05 million
3.6	Number of active international linkages involving exchange of researchers/students/faculty etc. (Attach Details).	Through HEC

4	Student Information:	
4.1	Number of Ph.D. degrees conferred to date to students from the Department during the past three academic years.	01
4.2	Number of Ph.D. students currently enrolled in the department.	25
4.3	Ratio of number of students accepted to total number of applicants for Ph.D. Program.	1:5
5	Program Information	
5.1	Entrance requirements into Ph.D. Program	M.Phil.
5.2	Is your Ph.D. program based on research only? (Y/N)	Yes
5.3	Maximum number of years in which a Ph.D. degree has to be completed after initial date of enrollment in Ph.D. program.	As per University Policy
5.4	Total number of post M.Sc. (16 year equivalent) courses required for Ph.D.	As per University Policy
5.6	Total number of Ph.D. level courses taught on average in a Term / Semester.	As per University Policy
5.7	Do your students have to take/write:	
	a. Ph.D. Qualifying examination (Y/N)	Yes
	b. Comprehensive examination (Y/N)	Yes
	c. Research paper in HEC approved Journal	Yes
	d. Any other examination (Y/N)	Yes (GAT subject)
5.8	Total number of International examiners to which the Ph.D. dissertation is sent.	As per HEC policy
5.9	How is the selection of an examiner from technologically advanced countries carried out?	As per University policy
5.10	Is there a minimum residency requirement (on campus) for award of Ph.D. degree?	As per university policy
6	Additional Information	
6.1	Any other information that you would like to provide.	Nil

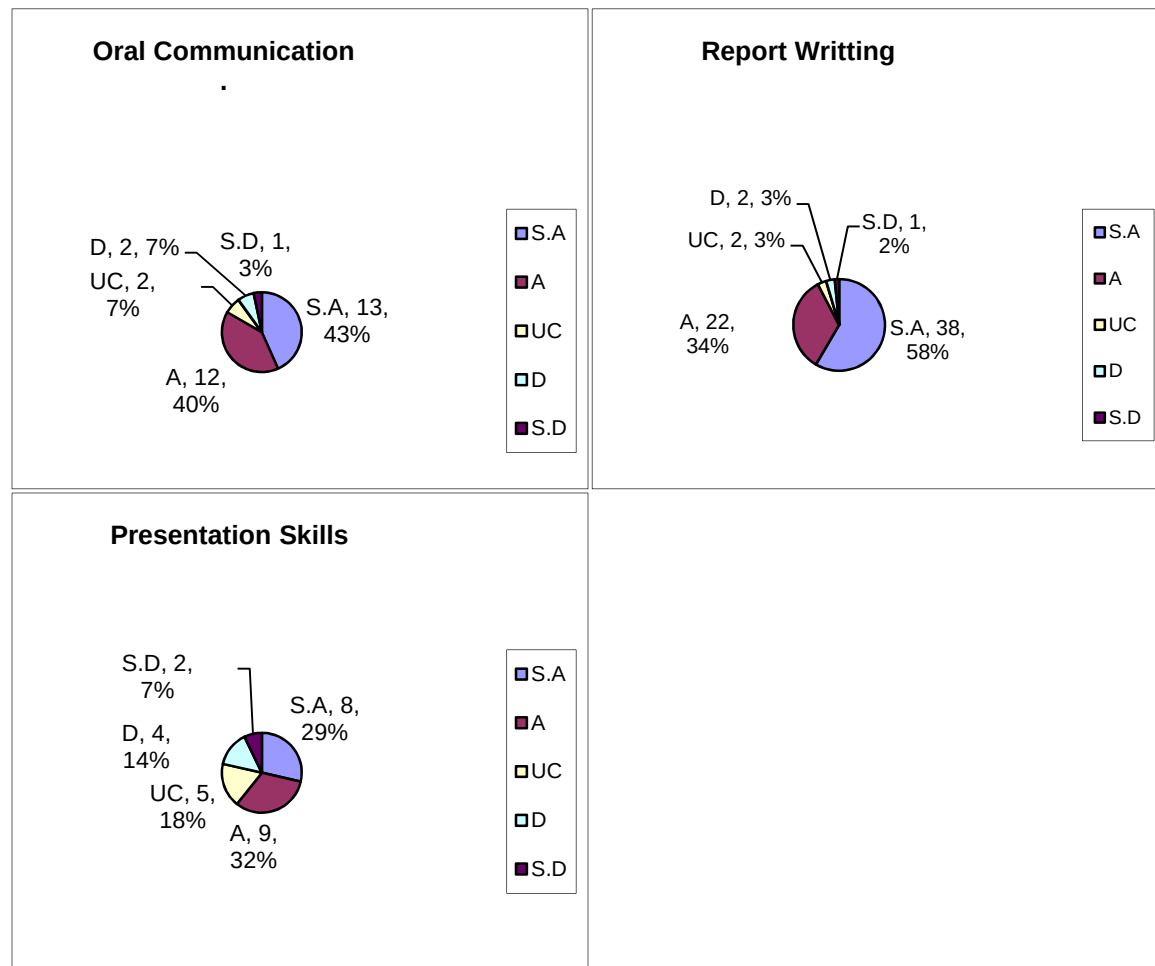
Proforma 7:ALUMNI SURVEY RESULTS:

The graduates of Botany Department join mostly research institutes, universities or opt for academic jobs, so Proforma 7 was sent to concerned institutes and overall feedback results of program assessment by the Alumni are presented in the following figure.



Figures: Knowledge

Results obtained from alumni survey showed that when the alumni were asked regarding the knowledge they obtained from this department, the overall response was satisfactory. 82% of the alumni agreed that they were well acquainted with scientific knowledge. 86% of the students showed their agreement regarding learning problem formulation and solving skill. Most strong positive response was given by alumni regarding collection and analyze of data where 87% alumni showed agreement which means department was able to impart research skills in students. Regarding linking theory to practice 92% alumni showed agreement. Alumni showed agreement towards ability to design system components by 87%. There was a lack in IT knowledge as shown by disagreement of 22% alumni and 10% uncertain.



Figures: Communication Skills

It is evident from pie charts regarding writing skills 92% of the students were agreed, while 93 % students showed agreement in their oral communication; However 18% were uncertain for their presentation skills and 21% showed disagreement.

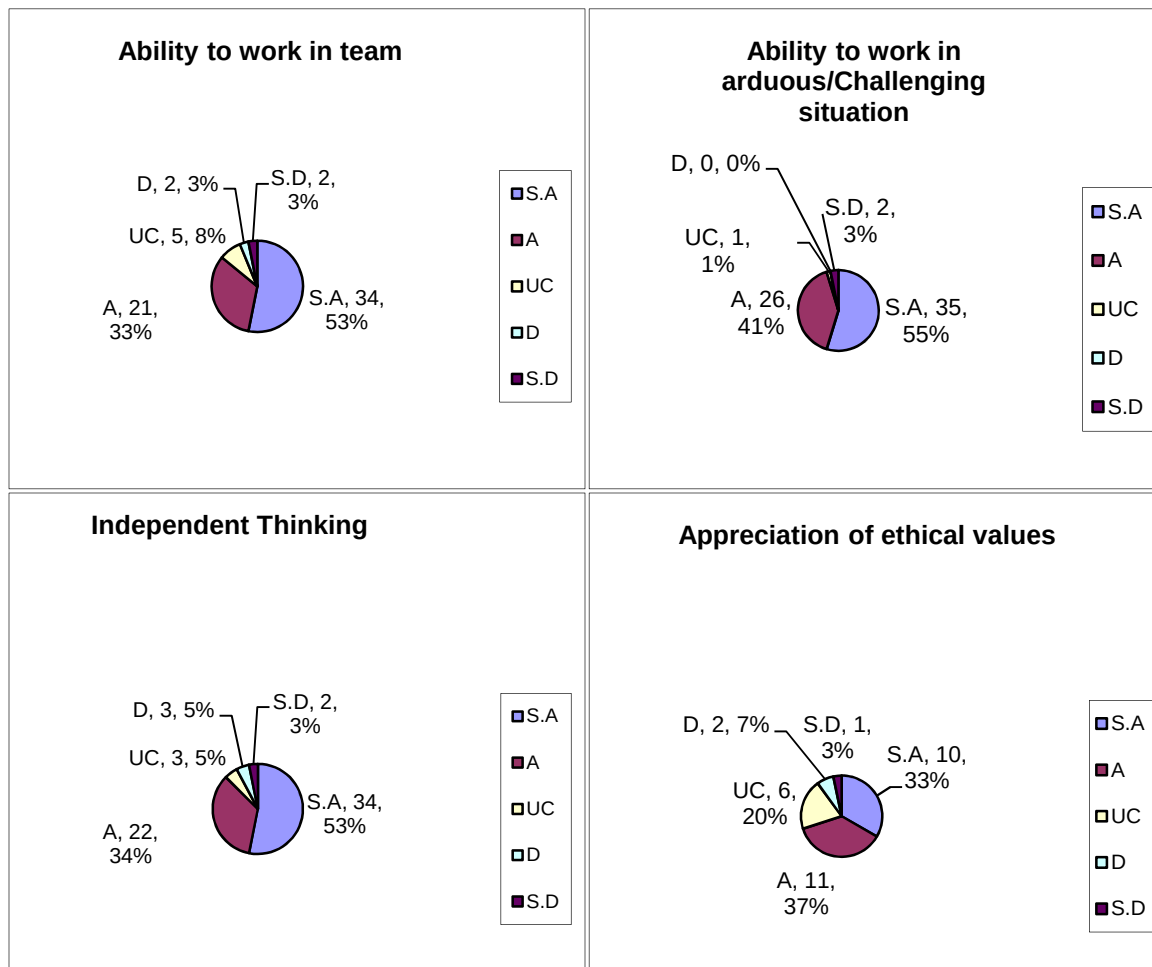


Fig: Interpersonal Skills

Regarding interpersonal skills, the feedback of the alumni showed that there was a 86% response in ability to learn in a team. Similarly, 96% agreed in their learning the ability to work under challenging conditions. 86% of students agreed to acquiring independent thinking, however 10% alumni disagreed regarding appreciation of ethical values and 20 % were uncertain.

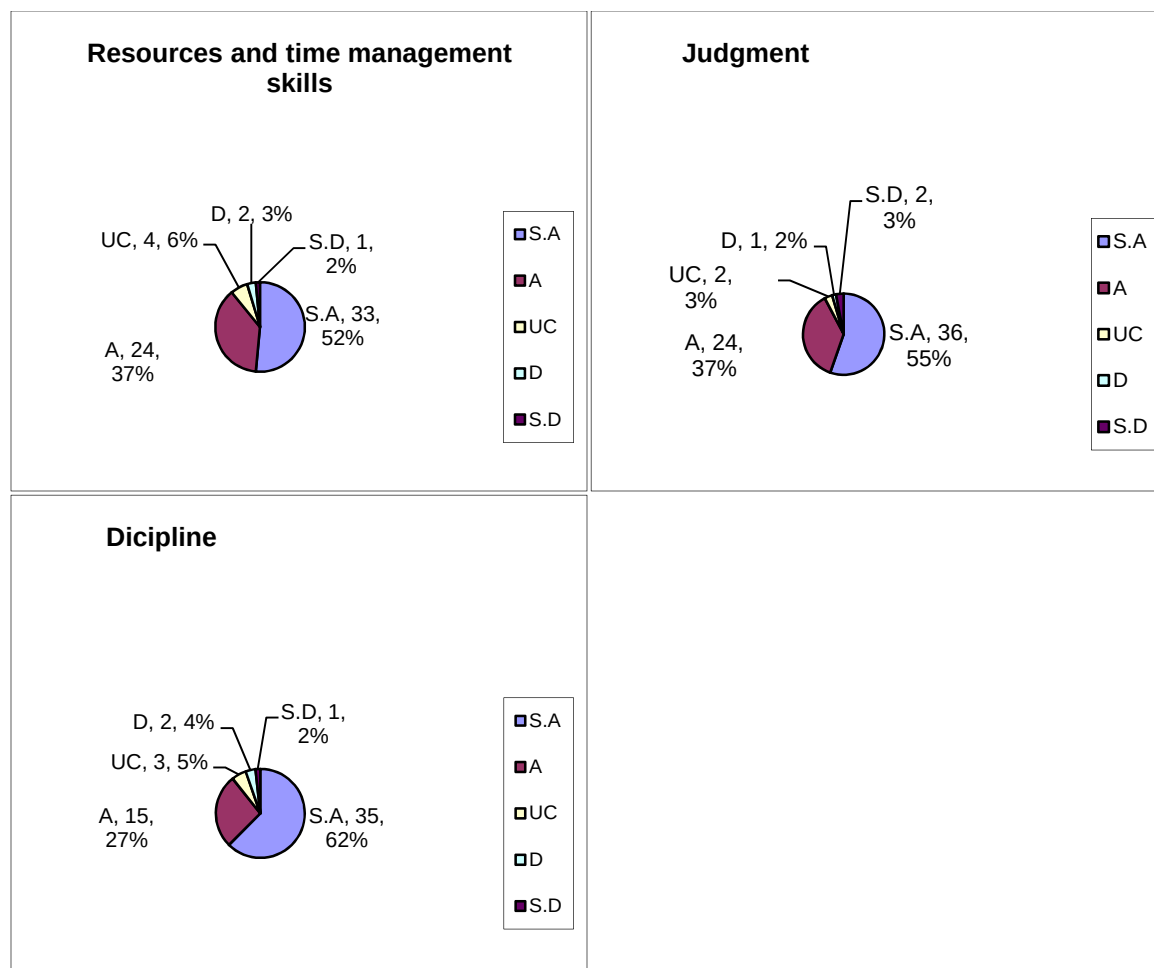


Fig: Management/Leadership Skills

The chart regarding Management and Leadership skills s skills showed that 89 % of the students were agreed to resource and time management skills. 92% alumni were positive in learning judgment skills. Similarly 89% agreed regarding discipline.

Proforma 08: EMPLOYER SURVEY

Feedback about employees was obtained from organizations viz. Education department, National Agriculture Research Centre Islamabad (NARC), PirMehr Ali Shah Arid Agriculture University Rawalpindi, Federal Seed Certification Department, Islamabad and Department of Agricultural Extension Punjab. Their views are reflected in the bar diagram below. The major emphasis was to know the employers comments on the quality of education regarding: knowledge, communication skill, work skill and interpersonal skill these students have. Survey reflects that our graduates fall above average and in all areas. Their abilities were rated above 70%. This indicates that our graduates are well adaptable and show their better potential in any given environment. However, some employers have given general comments about some weaknesses, particularly the practical workability. The point has been well noted and will be tried to overcome for our future and current students.

As per Performa 8



PROGRAM OUTCOMES:

Skills and capabilities Reflected In performance as Botanists:

Degree of skills and capabilities that will reflect on their performance as botanist:

- Students will become proficient in skills and attitudes.
- PhD scholars will acquire conceptual and operational understanding of subject.
- Students shall learn to use basic and applied knowledge in field of practicals.
- Students shall learn to employ advanced analytical techniques.
- This skill development will lead them to apply given knowledge of plants.
- Students shall have an ability to use conventional as well as modern tools, techniques and skills necessary to conduct botanical research.
- Students shall learn to develop an insight for research design and projects.
- Students will learn to conduct research in economically thematic areas.
- Students will get awareness of career opportunities.
- Students shall have an understanding of professional and ethical responsibilities of a botanist.
- Students shall have an ability to work effectively in teams including multidisciplinary teams to solve problems relevant to their field.
- Students will be able to work as professionals.
- It will also build confidence to communicate and shall also develop the skill of effective writing.

Strength of the Department

1. Faculty members are
 - fully qualified
 - Have good command of their subject.
 - And have specialization in their respective fields.
2. Labs are reasonably equipped.
3. Different project are going on in the department which are helping in strengthening of department.

Weaknesses Identified in the Program

1. There is a need of short foreign training to faculty members
2. There is a lack of lectures halls.
3. Latest literature and review are hardly available
4. Lack of Gas supply in Laboratories
5. As an integral part of the department, it must have
 - Herbarium & botanic garden
 - Green house,
 - Computer Lab,
 - Departmental library
6. Lack of essential equipment like
 - Scanning electronic microscope,
 - Homogenizer,
 - PCR equipment and ultra-centrifuge.
7. There is lack of supporting staff.

Major Feature of Improvement Plans

- To establish herbarium and Botanic garden in order to aid the students by physically observing plants in preserved and live state.
- To establish computer Lab for students
- To develop departmental library.

Table 3: Quantitative Assessment of the Department (Year 2011-2012)

Sr. No.	Particular	No	Remarks
1	Ph.D.	04	In employment
2	Students: Faculty rates	1:20	Fulfils HEC criteria
3	Technical : No technical ratio	2: 4	Fulfils HEC criteria
4	Average grade point	?	Fulfils 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

S. No	Faculty	Journal Publication & (National International)	Conference Publication (proceedings abstract)	Projects
1.	Dr. M. Arshad	32 International 53 National	Nil.	02
2.	Dr. Abida Akram	12 International 08 National	03	01
3.	Dr. Rahmatullah Qureshi	15 International 23 National	Proceeding 01	01
4.	Dr. Noshin Ilyas	10		01
5.	Dr. Naveed Iqbal Raja	11		01
6.	Dr. Yamin Bibi	10		01
7.	Ms. Mubashra Munir	03 National	0	01
8.	Mr. Zia Ur Rehman Mashwani	07	15	01
9.	Ms Saira Asif	2	Nil	Nil

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

Faculty Satisfaction Regarding the Administrative Services

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

Table 5: Degree requirements

Degree	Pre-requisites
Ph. D.	M.Sc. (Hons)/MS/M. Phil. Examination in first division or with aggregate CGPA of not less than 3.00 out of 4.00 from a recognized institution, entry test and interview. Application of the candidate must be accompanied with comprehensive research proposal to be undertaken by the candidate. The candidate must have to clear international GRE test before submission of thesis.

SECTION 2

Criterion 2: Curriculum Design and Organization

A. Title of Degree Program: PhD 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 PhD are organized by the department.

- **Ph. D.**

The program contents meet the program objectives as highlighted and provide by the Higher Education Commission, Government of Pakistan.

Table 6: Core Courses

S. No.	Course	Title	Credit
1	BOT-701	Diversity in Non- Vascular Plants	3(2-2)
2	BOT-702	Plant and Cell Physiology-I	3(2-2)
3	BOT-703	Plant and Cell Physiology-II	3(2-2)
4	BOT-704	Phytosociology	3(2-2)
5	BOT-705	Plant Taxonomy and Embryology	3(2-2)
6	BOT-706	Diversity in Vascular Plants	3(2-2)
7	BOT-707	Plant Anatomy	3(2-2)
8	BOT-708	Mycology and Plant Pathology	3(2-2)
9	BOT-709	Plant Ecology	3(2-2)
10	BOT-710	Ethnobotany	3(2-2)
11	BOT-711	Environmental Pollution	3(2-2)
12	BOT-712	Research Planning and Report Writing	3(1-4)
13	BOT-720	Seminar	1(1-0)

S. No.	Course	Title	Credit
Optional Courses			
14	BOT-713	Medicinal Plants of Pakistan	3(2-2)
15	BOT-714	Molecular Plant Development	3(3-0)
16	BOT-715	Phytogeography	3(2-2)
17	BOT-716	Research Techniques and Instrumentation	3(2-2)
18	BOT-717	Phytohormones	3(2-2)
19	BOT-718	Arid Zone Ecology	3(2-2)
20	BOT-719	Special Problem	1(1-0)
21	BOT-720	Seminar-I	1(1-0)
22	BOT-720	Seminar-II	1(1-0)
23	BOT-721	Stress Physiology	3(2-2)
24	BOT-722	Plant Nutrition	3(2-2)
25	BOT-723	Advance in Plant Physiology	3(3-0)
26	BOT-724	Molecular Basis of Morphogenesis	3(3-0)
27	BOT-725	Molecular Advances in Phytosystematics	3(3-0)
28	BOT-726	Environmental Toxicology and Bioremediation	3(2-2)
29	BOT-727	Environmental Biotechnology	3(3-0)
30	BOT-728	Principles of Genome Analysis and Genomics	3(3-0)
31	BOT-729	Biology of Halophytes	3(2-2)
32	BOT-730	Environmental Plant Physiology	3(2-2)
33	BOT-731	Conservation and Management of PlantResources	3(1-4)
34	BOT-732	Plant Proteomics	3(2-2)
35	BOT-733	Physiological Genetics of Plants	3(3-0)
36	BOT-734	Forensic Botany	3(3-0)
37	BOT-735	Plant-microbe Interactions	3(2-2)
38	BOT-736	Plant systematic	3(2-2)
39	BOT-737	Applied Ethnobotany	3(2-2)
40	BOT-751	Integrated Biological Resource Management	3(3-0)
All courses offered for M. Sc. Programmes can be offered to the Ph. D. students, depending upon their requirements			

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 Outcome

COURSE	Outcomes		
	1	2	3
BOT-707	**	**	***
BOT-710	***	**	**
BOT-703	**	**	**
BOT-708	**	**	***
BOT-737	***	**	**
Biol-302	***	**	**
BOT-706	**	**	***
BOT-705	**	***	**
BOT-702	***	**	***
BOT-708	**	**	**
BOT-712	**	**	***
Biol-301	**	***	**
BOT-701	***	**	**

* = Relevant
** = Relevant and satisfactory
*** = Very relevant and satisfactory
**** = highly 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 arts and professional and other discipline required for the program according to demands and requirements set by the higher education Commission.

Standard 2-2: Elements Vs Courses

Meeting standard 2-2: Percentage of Elements in Courses

Elements	Courses
Theoretical backgrounds	BOT-701, BOT-702, BOT-703, BOT-704, BOT-705, BOT-706, BOT-707, BOT-708, BOT-709, BOT-710, BOT-711, BOT-713,

	BOT-714, BOT-715, BOT-717, BOT-718, BOT-721, BOT-722, BOT-723, BOT-724, BOT-725, BOT-726, BOT-727, BOT-728, BOT-729, BOT-730, BOT-732, BOT-733, BOT-735, BOT-738
Problem analysis	BOT-712, BOT-736, BOT-737, BOT-751
Solution designs	BOT-716, BOT-719, BOT-720, BOT-731, BOT- 734, 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 2-7

Enhancing Oral and written Communication Skills of the students

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

SECTION 3

Criterion 3: LABORATORIES AND COMPUTING FACILITIES

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

LAB-1

Laboratory title	<i>Plant Ecology Lab.</i> (for the graduate and post graduate students)
Location and Area	Faculty of Sciences, Department of Botany, 1 st floor, New Academic Block.
Objectives	Laboratory is used for ➤ Practical exercise and demonstration to master students in their introductory and major courses. ➤ Research work for the graduate and post graduate students. ➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies. ➤ Laboratory is spacious and adequate for research and teaching.
Major apparatus vizequipments	Microscopes, oven, vacuum pump, thermograph, pH meter, electric balance, sieve shaker, refrigerator, pH and EC meter, etc.
Safely Regulations	Safely measures are unavailable against fire (extinguisher), minor hazards and accidents, injuries (First Aid Kit). However, the university maintains a Medical Dispensary for such incidents.

LAB-2

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

	➤ Practical exercise and demonstration to master students in their introductory and major courses. ➤ Research work for the graduate and postgraduate research fellows. ➤ Laboratory is spacious and adequate for teaching as well as research purpose. ➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies.
Major apparatus vizequipments	Refrigerators, pH meter, EC meter, UV visible spectrophotometer, Osmometer, water potential apparatus, Leaf area meter, oven, Microscopes, elective balance, etc
Safely Regulations	Safely measures are unavailable against fire (extinguisher), minor hazards and accidents, injuries (First Aid Kit). However, the university maintains a Medical Dispensary for such incidents.

LAB-3

Laboratory title	<i>Molecular Mycology Lab.</i> (For the master and post graduate research scholars.)
Location and Area	Faculty of Sciences, Department of Botany, 1 st floor, New Academic Block. .
Objectives	Laboratory is used for ➤ Practical exercise and demonstration to master students in their introductory and major courses. ➤ Research work for the graduate and post graduate research scholars. ➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies. ➤ Laboratory is spacious and adequate.
Major apparatus vizequipments	Research microscopes, autoclave, Laminar Flow, deep freezer, refrigerators, Test tube mixer, elective balance, HPLC, Phase contrast Microscope, Electrophoresis, etc.

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

LAB-4

Laboratory title	<i>Plant Taxonomy & Ethnobotany Lab.</i> (For the master and post graduate research scholars.)
Location and Area	Faculty of Sciences, Department of Botany, 1 st floor, New Academic Block. .
Objectives	Laboratory is used for ➤ Practical exercise and demonstration to master students in their introductory and major courses. ➤ Research work for the graduate and post graduate research scholars. ➤ Used for implementing the funded projects by the university, HEC, PSF, PARC and other agencies. ➤ Laboratory is spacious and adequate for undertaking research and teaching in the relevant field.
Major apparatus vize equipments	Hotplate, Microscopes, stereomicroscope, dissecting microscope, deep freezer, electric balance, sieve shaker, refrigerator, pH and EC meter, plant pressers, etc.
Safely Regulations	Safely measures are unavailable against fire (extinguisher), minor hazards and accidents, injuries (First Aid Kit). However, the university maintains a Medical Dispensary for such incidents.

Standard 3-1: Laboratory Manuals:

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

Standard 3-2: Support/Laboratory Personal for Maintenance of Laboratory

Laboratories are maintained by only one laboratory assistant (equipment, glassware, 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 has the following shortcomings/ problems:

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

SECTION 4:
Criterion 4: Student Support and Advising

Departmental Orientation

All newly admitted students are given orientation session at departmental level. It covers 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 students problems (personal and academic)
- Providing general assistance

Standard 4-1: Frequency of courses

- Courses are taught as per approved scheme of study.

Standard 4-2: 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.

Practicals 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.

Standard 4.3: 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.

SECTION 5: PROCESS CONTROLL

Standard 5.1: Admission Criteria for Each Programme

- 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 **Ph. D.** (M. Phil with CGPA 3/4 or 1st division under annual examination system with International GRE must be cleared before submission of theses.
- It is based on the recommendations of supervisory committee
- 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 programme.
- 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 are as follows:

- Vacant and newly created positions are advertised in the leading daily newspapers. Applications are received 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 syndicate for issuing orders to join within a specified time period.
- Induction of new candidates depends upon the number of approved vacancies.
- Standard set by HEC are considered.

Retention of Excellent Faculty Members

- At present, no 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.

Standard 5.4: Process and Procedure to Ensure Teaching and Delivery of Course Material

- Periodical revision of the 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 overheads, slides and pictures

- All efforts are made that the courses and knowledge imparted meet the objectives and outcomes. The progress is regularly reviewed in the staff meetings.

5.5. 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

Table 8: Faculty Distribution by Program Areas in Botany

Program area of specialization	Courses in the area and average number of sections per year	Number of faculty members in each area	Number of faculty with Ph. D degree
Taxonomy & Ethnobotany	6	2	1
Ecology	6	1	1
Physiology	8	1	1
Mycology and Plant Pathology	2	1	1
Tissue Culture	3	2	2
Total	25	7	6

Table 9: Faculty Specialization

S. No	Name	Position	Qualification	Specialization
1.	Dr. Muhammad Arshad	Professor	PhD	Plant Ecology
2.	Dr. Abida Akram	Assoc. Professor	Ph.D	Mycologist
3.	Dr. Rahmatullah Qureshi	Assoc. Professor	PhD	Plant Taxonomy & Ethnobotany
4.	Dr. Noshin Ilyas	Assist Professor	PhD	Plant Microbiologist
5.	Dr. Naveed Iqbal Raja	Assist Professor	PhD	Tissue culture
6.	Dr. Yamin Bibi	Assist Professor	PhD	Phytochemistry
7.	Ms. Mubashra Munir	Lecturer	M. Phil.	Fresh water biologist
8.	Ms. Saira Asif	Lecturer	M.Phil	Tissue Culture
9.	Mr. Zia Ur Rehman Mashwani	Lecturer	M.Phil	Ethnopharmacology

Standard 6.2: Effective Programs for Faculty Development

- Proficient implementation and accessibility of pleasing research and academic facilities are provided conferring to the faculty members.
- Incentives in the practice of allowances to thesis supervisors have been implemented lately to promote high standard research.

Standard 6.3: Faculty member motivation

- There is a calamitous necessity of motivation

SECTION 7

Criterion 7: Institutional Facilities

Standard 7-1 infrastructure

The institutional facilities are insufficient though the department has provided new space. These shortfalls are under:

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

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 have a library.

Standard 7.3 Class Room and Faculty Offices

- Shortage of lecture halls
- Faculty offices are inadequate.

SECTION 8

Criterion 8: Institutional Support

- There should be more encouragement for the faculty members to carry out quality research.
- There is inadequate supporting technical and official staff and some equipment.
- There is one classroom available therefore; classes are taken in the labs.

Standard 8-1 Support and Financial Resources

At present department is having a very insufficient financial resource to maintain the present needs of the department. Individual research grants for students and faculty are mainly supporting the departmental research activities. There is dire need of increasing the financial resources allocated to the department to establish a library, laboratories and computer facilities. Suggestions and factors that can contribute to the motivation to the faculty are given as follows:

- Research grants to the young faculty members.
- Discrimination should be discouraged at all levels.
- Sabbatical leaves for researches in the country and abroad.

Standard 8-2 High Quality Graduate Students and Research scholars

Graduate students are enrolled once in a year. However, PhD scholars are enrolled semester wise. 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 2003-09.

STUDENTS	NOS									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Postgraduate	39	42	43	41	32	60	56	57	67	57
Ph. D.	5	0	02	0	5	2	3	-	--	01
M.Phil	--	--	--	--	--	13	09	13	14	14
Research Associate				01	02					

Students: Faculty ratio	1:20	Fulfills HEC criteria
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Standard 8-3 Financial Resources:

Total budget of the department for the financial year 2011-12 is Rs. 1, 00000/- (One Lac rupees only) which hardly fulfills the departmental needs particularly for the purchase of necessary chemicals, etc.

SUMMARY AND CONCLUSION

This Self-Assessment Report (SAR) covers activities and achievements in Ph.D. programme carried out in department of Botany, Pir Mehr Ali Shah Arid Agriculture Rawalpindi from fall semester 2010-11 to fall 2011-12. SAR encompasses program mission, objectives, outcomes, curriculum design and organization. Information about laboratories, facilities, student provision, and supervision is also provided. Procedure control capacity of faculty members, institutional facilities, and provision information is also cited in the report.

Strengths and weaknesses of the Ph.D. programme are highlighted in SAR. The students have been well trained in accordance with the new challenges and requirements. Survey indicates a good level of research work being pursued in the department. 80 percent of faculty members are HEC approved supervisors. Ph.D. students are availing HEC indigenous scholarship to facilitate their research work. Students further avail IRSIP programme of HEC to incorporate advance techniques in their research. The data indicates that teachers and course evaluation survey results are satisfactory. Majority of the faculty members are performing well in terms of punctuality, well preparedness and knowledge demonstration. Curriculum design, development, and organization are based upon set, well defined and approved criteria. Pre-requisites are fully observed, examinations are conducted as per schedules. Advanced courses are in progress for Ph.D. programme which align the department with modern trends. The number of courses along with their titles and respective credit hours, course content for degree program is fully planned. The rules formulated by university and HEC are properly followed regarding admission e.g. GAT subject. Besides admission performance and grading is also being done according to rules of HEC. International academic and research standards are highly observed in the department. The efficiency and effectiveness was measured through branded standards and was found to be acceptable.

Major shortcomings have been observed in survey for Ph.D. programme which include gas supply to laboratories and departmental library and computer laboratory. Latest equipment like GC-MS is another limitation. Institutional facilities need to be improved and strengthened so that work could be conducted with ease and efficacy. Glass house of the department must be well equipped with electric and water supply. Accordingly, institutional support in this regard can

play a pivotal role in stream lining the sustained development of institution to update the knowledge of the faculty member. Training of faculty members should also be emphasized to improve research skills and broadening of vision of the young and senior faculty members. Workshops, symposiums, capacity building programmes and participation in international conferences can play the role here.

Despite of all mentioned limitations various research related activities are in progress. Faculty members are encouraged to carry our research projects. Research being carried by Ph.D. students is also strengthening research activities in department. Novel research finding are being published in ISI recognized impact factor journals with improved citation. Collaborations with other institutions and universities are being developed to boost up the research activities.

Prepared by:

Zia-ur-Rehman Mashwani

Lecturer

Department of Botany

Pir Mehr Ali Shah Arid Agriculture

University, Rawalpindi

Dr. Noshin Ilyas

Assistant Professor

Department of Botany

Pir Mehr Ali Shah Arid Agriculture

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Dr. Yamin Bibi

Assistant Professor

Department of Botany

Pir Mehr Ali Shah Arid Agriculture

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Prof. Dr Muhammad Arshad

Chairman

Department of Botany

Pir Mehr Ali Shah Arid Agriculture

University, Rawalpindi

Checked By:

(Dr Ikram Ali Malik)

Director,

Quality Enhancement cell

Pir Mehr Ali Shah Arid Agriculture

University, Rawalpindi

Date of submission to HEC

Faculty Resume

Faculty Resume

Name:	Muhammad Arshad
Personal:	H. No. 12, UNIVERSITY COLONY NO. 2, PMAS Arid Agriculture University Rawalpindi, Pakistan. 051-9290093
Experience	Jan. 2010 to date Chairman Feb 2007 to date Professor Department of Botany, PMAS Arid Agriculture University, Rawalpindi, Pakistan. Dec 2004 to Feb. 2007 Associate Professor Department of Botany, University of Arid Agriculture, Rawalpindi, Pakistan. June 2004 to May 2005 Administrative Incharge Department of Botany, University of Arid Agriculture, Rawalpindi, Pakistan. Jan., 1998 to Dec 2004 Assistant Professor Department of Botany, University of Arid Agriculture, Rawalpindi, Pakistan. Jan., 1998 to Feb, 1998 Chairman, Department of Biological Sciences University of Arid Agriculture, Rawalpindi, Pakistan May 1986 to Jan., 1998 Lecturer Department of Botany, University of Arid Agriculture, Rawalpindi, Pakistan. June 1984 to May 1986 Junior Research Assistant (JRA) Department of Biological Sciences, Quaid-i-Azam University, Islamabad, Pakistan. Aug. 1980 to April 1981 Apprentice Chemist Hyesons Sugar Mills, Khanpur Distt. Rahim Yar Khan Pakistan.
Honors and Awards	Medalist scored first position in M. Phil., Quaid-i-Azam University, Islamabad Pakistan. Award Merit Scholarship during H.S.C. Member of Cricket team, Department of Botany, University of Punjab, Lahore, Pakistan. Awarded merit certificate for best performance during cricket championship organized by Student Union, University of Punjab, Lahore, Pakistan. Certificate of Service, the National Cadet Corps, Govt.

	College Chichawatni, Distt. Sahiwal, Pakistan. Worked as Secretary, Department of Plant Protection, Barani Agricultural College Rawalpindi, Pakistan. Worked as Hostel Superintendent Form 1986 - 1989, Barani Agricultural College, Rawalpindi, Pakistan. Member of Examination Committee, Barani Agricultural College, Rawalpindi, Pakistan. President, Student Tutorial Group “Heaven” University of Arid Agriculture, Rawalpindi, Pakistan. Member of Board of Faculty, Faculty of Sciences, university of Arid Agriculture, Rawalpindi, Pakistan. Member of Environmental Friendly Club, University of Arid Agriculture, Rawalpindi, Pakistan. Incharge Sports (Badminton), University of Arid Agriculture, Rawalpindi, Pakistan. Academic supervisor of M.Sc. Botany students, University of Arid Agriculture, Rawalpindi, Pakistan. Member of Comprehensive Examination Committee of M.Sc. Botany students, University of Arid Agriculture, Rawalpindi, Pakistan. Incharge Administration, Department of Biological Sciences, University of Arid Agriculture, Rawalpindi. Member of advisory group of WWF project” Capacity building in ethnobotany applied to conservation and sustainable use of plants resources from 2001-2004. Member Scrutiny Committee of Synopsis of Ph.D/ M Phil. Botany Program. Approved Ph.D. Supervisor for Higher Education Commission. Paper setter Federal Public Service Commission for the subject of Botany. Member Board of Studies. Department of Botany, University of Azad Jammu and Kashmir, Muzzaferabad. Member Syndicate. University of Arid Agriculture, Rawalpindi for the period of two years (2005-2007). Member of University Finance and Planning Committee as a representative of Syndicate for the period of two years (2005-2007). Member of Advanced Studies and Research Board, Kohat University of Science and Technology, Kohat. Member of Board of Faculty of Crop and Food Sciences for the period of three years (August 2006 to August 2009) as a nominee of Academic council. Prepared the UAAR scheme of study for the courses of M.Sc. and M.Phil. Botany and Biology.
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	Paper setter / Examiner of Botany for various universities of Pakistan. Resource person to establish National Data Base for the subject of Botany to National Testing Service (NTS) Pakistan. Enquiry officer for some enquiries at UAAR. Member of University Cafeteria Committee. Member of Board of Faculty of Forestry Range Management and Wildlife for the period of three years (Aug. 2007 to Aug. 2010) as a nominee of Academic Council. Member Pakistan Phytopathological Society. Member of synopsis scrutiny committee of Department of Environmental Sciences, Faculty of Forestry, Range Management and Wildlife for the period of three years i.e. from March 2008 to February 2011 Member of Board of Studies, Dept. of Plant Sciences, QAU Islamabad Advisor/Subject Specialist, Punjab Public Service Commission, Lahore Member of comprehensive committee of M. Phil, Dept of Environmental sciences PMAS AAUR. Member of self assessment committee of tenure track system QAU Islamabad Member of self assessment committee, Dept of Botany, PMAS AAUR. Member of Board of Faculty of Crop and Food Sciences for the period of three years (August 2009 to August 2012) as a nominee of Academic council. Member of Board of Studies, Dept. of Plant Sciences, QAU Islamabad from May 2009 –May 2012 Member Scrutiny Committee of Synopsis of Ph.D/ M Phil.Biology Program. Examiner for screening professional test conducted by Federal Public Commission. Member of Advance Study and Research Board of University as Nominee of Academic Council. Chairman purchase committee PMAS Arid Agric University Sep 2012 Member Unfair Mean Control Committee PMAS Arid Agric. University Sept. 2012-14 Organized one day seminar on Application of Proteomics to Investigate Stress-induced Proteins on June 11 2012 Speaker was, Dr. Setsuko Komatsu from Japan. Head of Departmental Tenure Review Committee.(DTRC) Member of Tenure Review Committee Dept. Plant Sciences QAU Islamabad.
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	Subject specialist for federal Public service commission. Evaluation of applications for various positions at various universities. Paper setting for CCS examination for botanical discipline. Involved in Development/Revision of Syllabi for Central Superior Services(CSS) Competitive Examination 2012 Reviewer for the evaluation of research projects of HEC and PSF. Papers reviewing of various national and international journals
Memberships	Member of Advisory Board of Ethnobotany Project, WWF. Member of Pakistan Ethnobotanical Society. Pakistan Botanical Society. Pakistan.
Graduate Students, Postdocs, Undergraduate Students, Honor Students	PhD : 11 M.Phil : 25 M.Sc : 15
Service Activity	
Brief Statement of Research Interest	Phytosociological aspects of vegetation and ethnic approach with reference to their utilization. Gene transformation Bioactivities and Chemical Characterization of medicinal plants
Publications	Book : 3 Publication (Impact factor) : 49
Research Grants and Contracts	1. Ethnobotanical study of the Galliyat for botanical demography and bioecological diversification. Funded by University of Arid Agriculture, Rawalpindi, Pakistan. 0.1 million 2. Ethnobotanical Study of Mountain Range of Kalla Chitta in Potohar Region , Pakistan Funded by WWF Pakistan. 0.4 million 3. Exploration and Eco.Taxonomic Screening Of Fodder Grasses from Thal Desert (Khushab) of Pakistan. 0.5 million 4. Correlation of percentage disease resistance with level of gene expression in transgenic wheat with Xa 21 gene. 0.5 million
Other Research or Creative Accomplishments	Nil
Selected Professional	Nil

Presentations	
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Name:	DR. RAHMATULLAH QURESHI
Personal:	Associate Professor Dept. Botany +923006730496 phytotaxonomist@gmail.com rahmatullahq@yahoo.com
Experience	1). Associate Professor From 14th December, 2010 to Date. Department of Botany Pir Mehr Ali Shah Arid Agriculture University Rawalpindi 2). Assistant Professor From 23rd May, 2007 to 13th December, 2010 Department of Botany Pir Mehr Ali Shah Arid Agriculture University Rawalpindi 3) Seed Certification Assistant (BPS-17) in Federal Seed Certification & Registration Department from 4th January, 2002 to 22nd May, 2007. 4) Research Associate in the Department of Botany, Shah Abdul Latif University Khairpur from 25th September 1998 to 31st December, 2001 (Sponsored by Pakistan Science Foundation Islamabad).
Honors and Awards	1. Elected as Vice President (Punjab) for the executive body/council of Pakistan Botanical Society for the session 2013-2015. 2. Fellow of Royal Anthropological Institute, British Museum, London. 3. Won award “Productive scientists of Pakistan” for the year 2012-13 by the Pakistan Council for Science & Technology under category “E”. 4. Won award “Productive scientists of Pakistan” for the year 2011-12 by the Pakistan Council for Science & Technology under category “F”. 5. Won award “Productive scientists of Pakistan” for the year 2010-2011 by the Pakistan Council for Science & Technology under category “G”. 6. HEC Recognized Ph.D. supervisor 7. Member, Curriculum development of M. Sc. Botany/Biology at PMAS Arid Agriculture University. 8. Member, Curriculum development of M.Sc./M. Phil./PhD of Botany/Biology at PMAS Arid Agriculture

	University. 9. Member Selection Board, Federal Public Service Commission. 10. Selected as jury for Intel Science Olympiad 2008-2009.
Memberships	1. Pakistan Botanical Society (Life Time). 2. Pakistan Wildlife Society (Founder Member) 3. Weed Science Society of Pakistan (Life Time). 4. Latifian Green Globe Forum, Shah Abdul Latif University, Khairpur. (Life Time).
Graduate Students, Postdocs, Undergraduate Students, Honor Students	M.Phil : 31 Ph.D (under supervision) : 08
Service Activity	1. Academic Council, PMAS-AAUR. 2. Departmental Tenure Review Committee for TTS 3. Board of Studies, Department of Botany. 4. Board of Studies, Forestry & Range Management Department, PMAS-AAUR since 01.11.2007 (as an external expert). 5. Scrutiny committee of Botany, Plant Breeding & Genetics, Mathematics & Statistics, Horticulture and Wildlife departments for M. Phil. /PhD studies. 6. Quality Enhancement Cell. 7. Admission Committee for M. Sc./M. Phil.
Brief Statement of Research Interest	Plant Taxonomy Ethnobotany
Publications	Paper (Impact factor) : 61 Paper (non-impact factor): 33
Research Grants and Contracts	1. Ethnobotanical survey of Thal Desert, Punjab Pakistan funded by Pakistan Science Foundation Islamabad (Three Years duration). (Principal Investigator). 2. Floristic & Ethnobotanical enumerations of Kallar Kahar Lake and its adjacent areas. 2010. Funded by Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi. (Principal Investigator). 3. Floral Biodiversity of Khanpur Dam, District Hazara Khyber Pakhtunkhwa. 2010. Funded by WWF, Islamabad (Principal Investigator). 4. Floristic Inventory of University Research Farm at Koont and its surrounding areas. 2008-2009. Funded by Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi (Principal Investigator).

	5. Floristic Study of Arid Zone (Desert- Nara Region) Sindh, Pakistan, Sponsored by Pakistan Science Foundation, Project No. S-SALU/ENVR (45) during 1998-2001 (as Research Associate). 6. Environmental Impact Assessment for Seismic operation in East Qadan wari gas field (Nara Desert) with reference to the vegetation. 2001. Sponsored by Hagler Bailey Pakistan (Pvt.) Limited, Islamabad (Co-Principal Investigator). 7. Environmental Impact Assessment for Seismic operation in Gamabt Block with reference to the vegetation. 2001. Sponsored by Halcrow Pakistan (Pvt.) limited, Islamabad (Co-Principal Investigator). 8. Environment Impact Assessment Study of Sawan Wari (Nara Desert) for OMV Gas Company with reference to the vegetation. 2001. Sponsored by Hagler Bailey Pakistan (Pvt.) Limited, Islamabad (Co-Principal Investigator). 9. Assessment of Natural Vegetation of Hingol National Park, Balchistan. 2005-2006. Sponsored by WWF-Pakistan. (1st and 2nd Phases) (Co-Principal Investigator). 10. Assessment of Natural Vegetation of Taunsa Barrage. 2005. Sponsored by WWF-Pakistan (Co-Principal Investigator). 11. Floral Base-Line Study of Khunjerab National Park, Northern Areas. 2006. Sponsored by WWF-Pakistan (Principal Investigator). 12. Preliminary Baseline Study of Chotiari and Pai forest Ecosystems of the Indus For All Programme (IFAP). 2005 Sponsored by WWF-Pakistan (Co-Principal Investigator). 13. Detailed Vegetation Assessment Study of Ketu Bundar, Kenjhar Lake Chotiari Reservoir and Pai forest Ecosystems of the Indus For All Programme (IFAP). 2006. Sponsored by WWF-Pakistan (Co-Principal Investigator).
Other Research or Creative Accomplishments	NA
Selected Professional Presentations	

Name:	Dr. Abida Akram
Personal:	Associate Professor Dept. Botany 0333-5320262 abidaaakram@hotmail.com abidaakram@uaar.edu.pk
Experience	1). Associate Professor From 28-05-2011 to date Department of Botany Pir Mehr Ali Shah Arid Agriculture University Rawalpindi 2). Assistant Professor From 26-02-2005 – 27-05-2011 Department of Botany Pir Mehr Ali Shah Arid Agriculture University Rawalpindi 3). Lecturer From 13-10-1996 - 25-02-2005 Department of Botany Pir Mehr Ali Shah Arid Agriculture University Rawalpindi
Honors and Awards	List honors or awards for scholarship or professional activity
Memberships	Botanical Society of Pakistan Pakistan Phytopathological Society. Soil Science Society of Pakistan (UAAR-47)
Graduate Students, Postdocs, Undergraduate Students, Honor Students	M.Phil : 14 Ph.D (under supervision) : 03
Service Activity	List University and public service activities.
Brief Statement of Research Interest	Recent working on mcoflora, mycotoxins and mcotoxin management Strategies.
Publications	Paper (Impact factor) : 13 Paper (non-impact factor): 13

Research Grants and Contracts	1).13-02-2012 Virulence analysis of <i>Xanthomonas campestris</i> pv sesame and <i>Pseudomonas syringae</i> pv sesame the casual organism of sesame (<i>Sesamum indicum</i> L.) bacterial blight. HEC Rs. 6,413,760/- (in progress) 2). Screening of mycoflora and mycotoxins from some pulses of arid region. PMAS-AAUR Rs. 108000/- (Completed 2012) 3). Molecular characterization of <i>Sclerotium rolfsii</i> Sacc. isolated from chickpea (<i>Cicer arietium</i> L.). Funded PMAS-AAUR Rs. 138,000/- (completed in 2009). 4). Characterization to determine the adaptive role of dehydrins under drought stress in wheat (<i>Triticum aestivum</i> L.). ALP project PARC. Rs. 2.943 Million (completed in 2009).
Other Research or Creative Accomplishments	NA
Selected Professional Presentations	

Name:	Dr. Noshin Ilyas
Personal:	Department of Botany, PNMAS-Arid Agriculture University Rawalpindi 0572032247 noshinilyas@uaar.edu.pk
Experience	22-02-2010 Lecturer Botany, PMAS-AAUR 01-01-2010 Assist Prof Botany, PMAS-AAUR
Honors and Awards	1. Gold medallist (M.Sc Botany) 2. HEC indigenous scholarship
Memberships	Pakistan Botanical Society
Graduate Students, Postdocs, Undergraduate Students, Honor Students	M.Phil : 09

Service Activity	1. Member SAR team 2. Member of QEC team of department. 3. Faculty in charge for CMS
Brief Statement of Research Interest	1. Plant Physiology 2. Plant Microbiology
Publications	Paper (Impact factor) : 09 Book Chapter : 02
Research Grants and Contracts	Date Title Agency / Organization Total Amount Principal Investigator of HEC funded project “Exploration of Genetic Variations for Drought Tolerance in Wheat (<i>Triticum aestivum</i> L) by Using Some Physiological and Biochemical Attributes”
Other Research or Creative Accomplishments	8 Accession numbers submitted at NCBI
Selected Professional Presentations	Oral presentation at 11th National Meeting of Plant Scientist at GC Lahore on 23 to 25th Feb Oral presentation at 1st International Conference on Biotechnology and microbiology at Bara Gali. Bano A. and Ilyas N. 2009. Production of bioactive metabolites by <i>Rhizobium</i> and <i>Azospirillum</i> strains isolated from maize grown in various moisture regimes in field. International conference on Positive Plant Microbe Interaction in Relation to Plant Performance and Ecosystem Functions. United Kingdom. Oral presentation at 9th Biennial Conference Advances in Biochemistry and Molecular Biology held on 17-20 December, 2008. Poster presentation in International Conference of Plant Scientists[10th National Meeting of Plant Scientists] held on April 21 to 24, 2008. Poster Presentaion in the International Symposium on “Microbial Technologies for Sustainable Agriculture” Exploring the hidden potential of microbes held at NIBGE, Faisalabad-Pakistan from 12-16 March, 2007. <u>G) Training Courses and Workshops Attended</u> Participated in workshop “Training worshop on abiotic stress tolerance in plants ‘ by NIAB, 5 to 9 Sep, 2011. Participated in International Workshop on Climate Change

	and Sustainability of Agro-Environment: Challenges and Interventions held at PMAS AAUR on June 3-4, 2010. Participated as an organizer in 2nd International Seminar on Medicinal Plants (ISMP) held in Lahore College for Women University on Jan 14-16, 2010. Participated in 6th Annual National Training Course on Modern Techniques in Biotechnology held at National Institute For Biotechnology And Genetic Engineering(NIBGE), Faisalabad, 5-9 May, 2008. Participated in International Thematic Workshop on Biofertilizer Technology held at COMSTECH, Islamabad January 22nd -28th, 2008. Participated in the training course on 'Nuclear & other Techniques in Food & Agricultural Research' at Nuclear Institute for Food & Agriculture(NIFA), Peshawar, from 12th November to 23rd November, 2007. Participated in International Symposium on Strategies for Crop Improvement Against Abiotic Stress, An Event of Centenary, Celebration, University of Agriculture, Faisalabad, 18-20 september, 2006.
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Name:	Dr. Naveed Iqbal Raja
Personal:	Department of Botany, PMAS-Arid Agriculture University Rawalpindi +92-(0)313-5257004 drnaveedraja@gmail.com
Experience	17-09-2010- to date Assist Prof Botany, PMAS-AAUR
Honors and Awards	HEC indigenous scholarship
Memberships	Pakistan Botanical Society
Graduate Students, Postdocs, Undergraduate Students, Honor Students	M.Phil : 04
Service Activity	Date Sheet incharge
Brief Statement of Research Interest	Plant biotechnology
Publications	Paper (Impact factor) : 06
Research Grants and Contracts	<i>Correlation of percentage disease resistance with level of gene expression in transgenic wheat with Xa21 gene. Donar agency: HEC, Worth: 0.5 Millions</i>

Other Research or Creative Accomplishments	Nil
Selected Professional Presentations	

Name:	Dr. Yamin Bibi
Personal:	Email: dryaminbibi@uaar.edu.pk yamin.phd@gmail.com roshni_yamin@yahoo.com phone number: 03035712234
Experience	Contract: 09 month Regular (BPS-19): 1 year and 3 months Assistant Professor Department of Botany PMAS Arid agriculture University Rawalpindi
Honors and Awards	Gold Medalist (M.Sc. Botany) PhD Indigenous Scholarship of HEC IRSIP award for UK
Memberships	Pakistan Society for Microbiology
Graduate Students, Postdocs, Undergraduate Students, Honor Students	Nil.
Service Activity	
Brief Statement of Research Interest	1. Phytochemistry and biological evaluation of medicinal plants 2. Tissue Culture
Publications	Paper (impact factor) : 11
Research Grants and Contracts	Title: Biological and phytochemical investigation of some ethanobotanically important plants of Pakistan. Agency / Organization: HEC Total Amount 0.5 million Year : 2012

Other Research or Creative Accomplishments	NA
Selected Professional Presentations	Oral Presentation I n National Science Conference at PMAS arid Agriculture University, 10th Jan to 12th Jan, 2012. Poster presentation in British Pharmaceutical conference UK, 2009.